

**NORTHEAST OHIO FOUR COUNTY REGIONAL  
PLANNING AND DEVELOPMENT ORGANIZATION**

**Yellow Creek Watershed  
Storm Water Management Consortium**

**Final Report**

March 2004

The preparation of this report was financed in part through a water quality management planning grant provided through the Lake Erie Protection Fund and with funds provided by NEFCO.

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## Summary

This report has compiled all of the work from the Yellow Creek Storm Water Management Consortium. The report documents the efforts of the Northeast Ohio Four County Regional Planning and Development Organization (NEFCO) and the consortium. The mission of the consortium was to protect water quality and the biological communities of the Yellow Creek. The goal of the project was to establish a forum for communication to identify specific problems and to develop common, uniform strategies to improve storm water management and water quality in the Yellow Creek Watershed.

The project included several objectives and actions to accomplish improved storm water management in the Yellow Creek Watershed. The first objective was to develop a storm water management consortium with local elected officers to meet at least six times over a two year period. This consortium included stakeholders such as local community officials, county soil and water personnel, county engineers, and concerned citizens. For this project, a total of thirteen consortium meetings were held. This included five regular consortium meetings with the aforementioned stakeholders and eight community consortium meetings with representatives from each constituent watershed community.

The second objective was to develop a list of storm water management principles for watershed-wide consensus. The consortium generated eight principles. These core values were developed through several means. First, the consortium reviewed existing guidelines and regulations in the local communities, and identified common themes and gaps. These neglected subjects would be addressed in some of the principles. Second, a land use study was completed, focusing primarily on impervious surface areas, riparian corridors, and development patterns. This analysis helped identify storm water problems and assisted in the development of related principles. Finally, some of the principles were generated directly from discussions at consortium meetings. These principles were developed by identifying known or suspected problem areas and formulating appropriate principles that would address these locations.

The third objective was to create a location-specific Action Plan based on the principles and identified problem areas. The completed Action Plan listed goals, objectives, and actions, and prescribed methods to improve storm water management and water quality in the Yellow Creek Watershed. The goals reflected the consortium principles, the objectives identified ways to achieve each goal, and the actions listed specific projects that could satisfy each objective. The Action Plan was constructed in a tabular format with columns identifying stakeholders and responsible parties, possible funding sources, expected improvements, and evaluation measurements for each action.

The fourth objective was to expand public awareness and involvement and to disseminate consortium information. The first component of this objective was the creation of a brochure and two fact sheets. The consortium created a riparian landowner brochure detailing the subjects of erosion, sedimentation, and riparian vegetation. The brochure was sent to riparian property owners and identified simple household practices that could preserve and restore the watershed. Two fact sheets were produced: a storm water flyer

and a project handout for each of the nine communities in the watershed. The second component of this final objective was to convene two public meetings. The consortium sponsored two public meetings over the course of the project. These meetings explained the project, defined storm water management, advertised the principles of the consortium, and promoted the Action Plan. The public meetings generated significant feedback through questions, comments, and suggestions for the consortium. The third component of the fourth project objective was to prepare a photo-documentation of the watershed. The completed photo album has documented many problem areas located in the watershed. The photos documented the sites that would later be targeted in the Action Plan. The album also recorded sites where good storm water management existed.

In sum, each objective of the project was satisfied. The consortium achieved what it had set out to accomplish: to heighten the awareness and identify ways to improve storm water management and water quality in the Yellow Creek Watershed. The products of the consortium represented consensus-based and citizen-driven interests. The consortium and public meetings established forums for discourse, the fact sheets and brochure promulgated the tenets of the consortium, and the location-specific Action Plan outlined prescriptions for improved water quality and storm water management.

## **Introduction**

The Yellow Creek Watershed is one of only two remaining high quality tributaries of the Cuyahoga River. However, the future health of the watershed is in jeopardy. Defined as a “rapidly urbanizing watershed,” the Yellow Creek faces numerous threats. Increasing development continues to be the most poignant issue. Construction activities, increasing imperviousness, riparian vegetation removal, and forest depletion are some of the impacts associated with this quick growth. NEFCO believed it was paramount to address the problems occurring within the watershed and develop an action plan prescribing protection and remediation activities.

In 1999 NEFCO completed the Yellow Creek Watershed Comprehensive Watershed Management Plan. Recommendations from this document included the establishment of a consortium of stakeholders and the completion of a location-specific action plan.

In September 2001, NEFCO was awarded a grant by the Lake Erie Protection Fund to study the various approaches to managing storm water within the Yellow Creek Watershed. The main objective of this project was to form a consortium of local community officials and other stakeholders. This consortium established a forum for communication in order to identify specific problems, and develop a set of common, uniform storm water management strategies within the Yellow Creek.

The consortium was responsible for developing an action plan outlining activities needed to address the impacts of storm water runoff in the Yellow Creek Watershed. This action plan articulates storm water management goals and objectives, outlines specific activities, and identifies potential funding sources for watershed protection.

The Yellow Creek project included five consortium meetings, eight community consortium meetings, two public meetings, two fact sheets, a brochure, and an action plan. Overall, the project was a success. The efforts of the consortium increased the awareness of storm water management issues within the watershed. The meetings provided the citizens a forum in which to express their concerns and to learn more about the acute problems facing the watershed. The Action Plan was the culmination of the project’s efforts; the plan articulated the principles of the consortium and prescribed activities that could help achieve the goals and improve storm water management within the Yellow Creek Watershed.

## **Consortium Meetings**

The consortium meetings provided the primary outlet for discourse. The consortium consisted of technically-minded professionals, governmental representatives, and concerned citizens. The meetings gathered these individuals to discuss the watershed issues, formulate principles, and review the Action Plan.

The first two consortium meetings introduced the project and explained the importance of storm water management. These initial meetings also served in developing the core

group of consortium members. A set of consortium principles was discussed and adopted at the third and fourth meetings. This process involved a review of existing guidelines and regulations in the Yellow Creek communities. The consortium searched for common themes and gaps that needed to be addressed in order to develop a consensus on a set of principles that could be applied uniformly in the watershed to meet US EPA Phase II storm water regulations. These principles represented the basic tenets of the consortium and served as goals in the Action Plan. The final consortium meeting concluded the project, discussed the contents of the final report, and discussed possible future avenues.

The consortium meetings constituted the main portion of the Yellow Creek project. The meetings provided an excellent medium for discussing each component of the project and eliciting comments and suggestions from consortium members. All of the products of the consortium were developed directly from the input gathered at the meetings.

Appendix A includes all of the consortium meeting materials.

### **Community Consortium Meetings**

In addition to the regular consortium meetings, NEFCO also conducted eight community consortium meetings and one meeting with a county engineer representative. NEFCO believed that smaller, informal meetings with each individual community would be an additional tool for communicating the goals of the Yellow Creek Consortium and the Action Plan. These community consortium meetings supplemented the regular consortium meetings by further promoting the goals and products of the group and expanding the awareness of the project.

NEFCO convened with eight of the nine communities that comprise the Yellow Creek watershed: Akron, Bath Township, Copley Township, Cuyahoga Falls, Fairlawn, Richfield, Richfield Township, and Sharon Township. NEFCO also met with a representative of the Summit County Engineer to discuss the project. The community consortium meetings involved more intimate conversation between NEFCO and government officials including township trustees, mayors, and city engineers. The meetings allowed NEFCO to learn about the challenges and goals of each community in regard to storm water management.

The community consortium meetings were extremely productive in promoting the interests of the Consortium. These meetings provided NEFCO the opportunity to talk more personally with instrumental governmental officials. The most common concern among the communities was the lack of financial resources. Storm water management was not a primary concern for these communities. However, all of the communities understood the importance of watershed management and storm water control.

The meetings provided NEFCO the opportunity to discuss the contents of the Action Plan and to propose the formation of a permanent watershed group for the Yellow Creek. All of the communities were receptive to the establishment of a future watershed group, but each had financial concerns. Most of the communities feared that such a consortium

would incur a financial obligation. Most would have the resources for a representative at consortium meetings, but funds for projects would be limited.

### **Public Meetings**

There were two public meetings held. These meetings provided a citizen-based forum for disseminating information on the consortium and the Action Plan. Unlike the consortium meetings, the public meetings were highly advertised. Press releases were sent to the Akron Beacon Journal and the West Side Leader, a local newspaper in the watershed area. Also, announcements were posted on community websites, the Summit County website, and many of the township and municipal buildings in the watershed. The objective was to get the word out about the meetings to as many as possible.

The purposes of the public meetings were to introduce the project, explain the Action Plan, and solicit feedback from the watershed residents. Many questions, suggestions, and comments were generated at these meetings. The meetings verified that there were many concerned citizens living within the Yellow Creek Watershed. The residents were cognizant of the changes occurring around them and appeared eager for change.

Appendix B includes all of the public meeting materials.

### **Consortium Principles**

One of the primary objectives of the project was to formulate a list of principles. These principles would guide all future actions of the consortium and would establish a foundation for the priority area selection and Action Plan development. The consortium reached a consensus on eight principles. These principles were reflected in the goals of the Action Plan.

Appendix C includes a list of the principles for watershed-wide consensus.

### **Fact Sheets**

The fact sheets defined storm water and the importance of effective management. The sheets also defined some of the Phase II regulations. The fact sheets provided elementary descriptions of storm water, impervious surfaces, and the impacts of storm water pollution. Fact sheets were mailed to all of the communities within the watershed.

Though colorful and informative, the fact sheets explicitly warned of the perils of improper storm water management practices.

Appendix D includes both fact sheets.

## **Brochure**

Another product of the Yellow Creek Consortium was the creation of a brochure. NEFCO had to consider the target audience and content of the brochure. Riparian landowners were chosen as the recipients since they have the greatest stake in the health of the watershed. There are nearly 600 riparian landowners in the Yellow Creek Watershed. Each received a copy of the pamphlet.

The brochure is entitled *Riparian Landowner's Manual*. The brochure highlights three principal topics: riparian vegetation, erosion, and sedimentation. Each of these subtopics contains bulleted information and two illustrative photographs. The back page includes simple "dos" and "don'ts" for landowners.

The brochure was a colorful, explanatory manual for the riparian landowners in the watershed. The purpose of the brochure was to make landowners cognizant of their actions and domestic practices. The brochure tried to inform the resident that their property is a critical piece of an endangered watershed. The brochure explained simple practices that residents should follow to preserve the health of the entire watershed.

Appendix E includes a copy of the brochure and a list of the riparian landowners.

## **Photo Album**

The photo album was compiled to document and illustrate areas throughout the watershed. The photographs show both problem areas and locations exemplifying storm water management and watershed quality. Photos were taken at roadside locations. A digital camera was used to photograph the sites. The digital camera proved a convenient and useful tool at effectively documenting and illustrating the areas of concern within the watershed.

Many of the photos were included in PowerPoint presentations at consortium and public meetings. Others were incorporated into the riparian landowner's manual.

Appendix F contains the photo album.

## **Action Plan**

The Action Plan represents the culmination of the Yellow Creek Consortium's efforts. The Plan is a document that promulgates the principles and recommendations of the consortium. The Action Plan exists as a guidebook containing a host of activities in which communities could participate to improve the watershed.

The Action Plan is constructed in a detailed tabular format and is organized into goals, objectives, and actions. The Plan consists of nine goals. The majority of these goals were drafted at earlier meetings by the consortium members. The goals represent the

core values of the consortium; they include the most basic principles that, if attained, could result in improved storm water management and water quality.

Each goal has a series of objectives. The objectives include methods by which to achieve each goal. Each objective consists of a series of actions. The actions are the most specific component of the Action Plan. The actions include individual activities that could be performed to satisfy its corresponding objective and achieve the associated goal. Each action is represented by a separate row in the table of the Action Plan; each row includes activity descriptions, columns identifying stakeholders, potential funding sources, expected improvements, and evaluation indices.

The Action Plan is both watershed-based and location-specific. There are 70 priority areas identified in the Plan. These areas were deemed to be of most concern. The total of 70 sites does not include all of the problem locations in the watershed. Many areas of concern were excluded. The majority of the activities outlined in the Action Plan pertain to these priority areas. The remaining activities are more general, pertaining to the watershed as a whole.

Appendix G contains the Action Plan.

### **Next Steps**

The Summit County Engineer has initiated the idea of continuing the watershed-based efforts in the Yellow Creek. As part of the Phase II requirements, the County Engineer must institute efforts of public education and involvement. Yellow Creek could become a pilot watershed group project that could serve as a template for all of the watersheds in Summit County. Thus, a future watershed group for the Yellow Creek could be under the auspices of the County Engineer. Summit County could provide the initiative that could spawn a more citizen-driven watershed group.

There are other future options for the Yellow Creek. NEFCO would like to be an instrumental component of any future watershed group. Whether acting as the coordinator of a community and citizen group or some other role, NEFCO would like to be involved in some capacity.

Another option could include the pursuance of future grant monies for the support of a future watershed group. NEFCO has the resources and capability to submit grant applications for communities within the watershed. NEFCO could pursue the start-up funding that could spur the creation of a more permanent watershed group.

### **Conclusion**

Watershed planning is a continuous process measured by small successes. The Yellow Creek Consortium experienced many promising achievements. Such a group is not a panacea; it can not solve all of the problems and address all of the threats facing the

watershed. However, a consortium can bring together communities and citizens within the watershed to discuss these concerns and formulate plans of action.

One of the main goals that NEFCO envisions is the formation of a permanent watershed group for the Yellow Creek. The Action Plan can be seen as a foundation for future protection and remediation endeavors in the watershed. It can be a guidebook for communities to select particular activities that are financially viable.

Overall, NEFCO believes that the Yellow Creek Consortium was a successful endeavor. The project raised the awareness of watershed-wide issues and generated interest among the residents of the communities. The fact sheets, brochure, and Action Plan were testaments to the accomplishments of the consortium.

**APPENDIX A**  
**Consortium Meeting Materials**

# **Yellow Creek Consortium Meetings**

## **Consortium Meetings**

Meeting 1: January 28, 2003

- Project introduction
- Land use study/guidelines review
- Phase II MS4 requirements
- Project expectations

Meeting 2: April 29, 2003

- Begin development of principles for watershed consensus
- Discuss format for brochures and fact sheets
- Schedule public meeting

Meeting 3: June 19, 2003

- Continue development of principles for watershed consensus
- Begin development of list of priority areas
- Finalize format for brochures and fact sheets

Meeting 4: August 26, 2003

- Finalize principles for watershed consensus
- Continue discussion on priority areas
- Begin discussion of content of Action Plan

Meeting 5: March 18, 2004

- Review completed Action Plan
- Review contents of final report
- Discuss future planning endeavors for Yellow Creek

## **Community Consortium Meetings**

Meeting 1: January 15, 2004

- Copley Township

Meeting 2: January 15, 2004

- Bath Township

Meeting 3: January 16, 2004

- Sharon Township

Meeting 4: January 22, 2004

- Richfield Township
- Village of Richfield

Meeting 5: January 29, 2004

- City of Fairlawn

Meeting 6: January 30, 2004

- City of Akron

Meeting 7: February 5, 2004

- City of Cuyahoga Falls

Meeting 8: February 9, 2004

- Summit County Engineer

## Meeting Agenda

Tuesday, January 28, 2003

2:00 PM

Bath Township Offices: Fire Training Room  
3864 West Bath Road  
Bath, OH 44210

- I. Welcome/Introductions
  
- II. Yellow Creek Watershed Storm Water Management Consortium project introduction  
-Adam Negley, NEFCO
  
- III. Results of NEFCO's review of existing storm water management guidelines and land use in the Yellow Creek Watershed  
-Adam Negley, NEFCO
  
- IV. Final NPDES Phase II MS4 Requirements  
-Dan Bogoevski, Ohio EPA, Division of Surface Water
  
- V. Discussion of project goals and scheduling of next meeting

<Name>  
<Title>  
<Organization>  
<Address>  
<City/State/Zip>

December 31, 2002

SUBJECT: Yellow Creek Storm Water Management Consortium

Dear <Name>:

In a few months, Phase II storm water regulations will be implemented, requiring much greater overall control and management of surface water runoff in many Northeast Ohio communities. Specific watersheds, including the Yellow Creek in Summit and Medina Counties, have been targeted for accelerated implementation of the new requirements based on their potential for rapid development. While the cost associated with complying with these new rules will vary by community, the development of partnerships to address issues of mutual concern could reduce the individual share each jurisdiction must bear.

In January of 2002, NEFCO was awarded a grant by the Lake Erie Protection Fund to study the various approaches to managing storm water within the Yellow Creek Watershed. The main objective of this project is to form a locally led consortium made up of community officials and other watershed stakeholders. This will establish a forum for communication in order to identify specific problems, and develop a set of common, uniform storm water management strategies within the watershed. The consortium will be a highly focused group, charged with developing a storm water action plan. This action plan will be a document that articulates goals and objectives, outlines specific activities, and identifies potential funding sources for continued watershed protection.

We feel strongly that this effort will be valuable in aiding jurisdictional compliance with upcoming NPDES Phase II storm water regulations by encouraging local partnerships that could reduce certain costs associated with the program. It will also be helpful in protecting one of the remaining high quality streams in the Lower Cuyahoga River Watershed from the harmful effects of excessive storm water runoff and the associated non-point source pollutants.

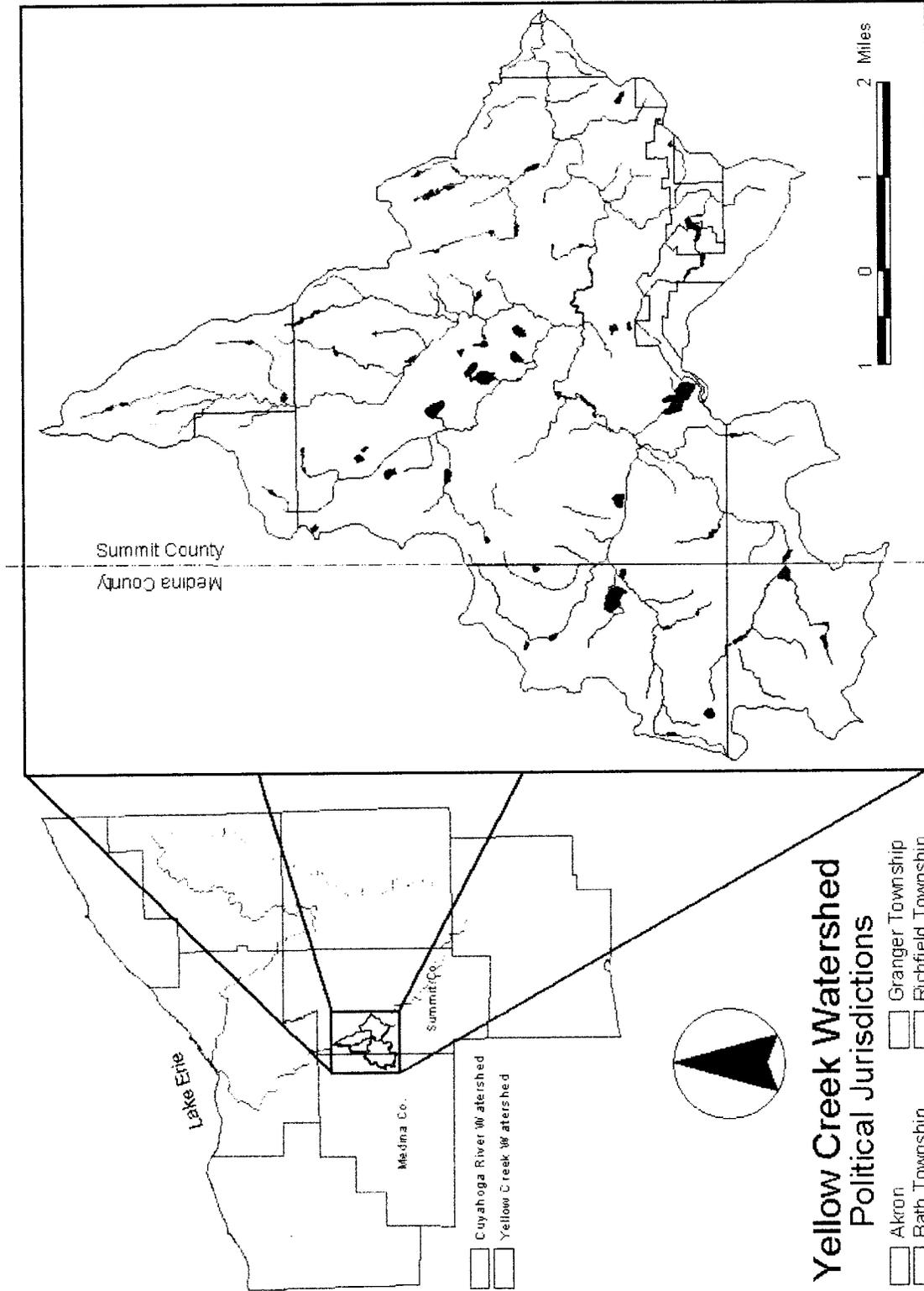
We plan on convening quarterly consortium meetings over the next 18 months. As a watershed stakeholder your participation is important to the success of the project. Please join us for a the first meeting which will be held on Tuesday, January 28, 2003 at 2:00 PM in the Fire Training Room at the Bath Township Offices. If you are able to attend, please let us know by January 22, 2003. If you have any questions about the consortium, please do not hesitate to contact me at 330.252.0337.

Sincerely,

Adam Negley  
Environmental Planner

Yellow Creek Watershed Stormwater Management Consortium Meeting - January 28, 2003

#	Name	Organization	Phone #	Email Address
1	Erik A. Flickinger	FWSG	865-0688	Flickwet@A.H.Net
2	Peter Bell	City of Cuyahoga Falls	971-8180	bellp@cityofcf.com
3	Randy Keitz	ODNR DSWC	330-489-4420 x 111	randy-keitz@oh.nadnet.org
4	Jim Sherwood	US Geological Survey	614-430-7743	sherwood@usgs.gov
5	Jay Mosley	Summit Co Engineer	330-443-8975	jmosley@engr.co.summit.oh.us
6	CHARLES HAMBLY	CUYAHOGA RIVER RAP	216-241-2414	Chambly@C.M.P.E.N.O.O.C.O.R.G
7	TIM WARTA	CUYAHOGA RIVER RAP	216-241-1111 x 307	TWARTA@C.M.P.E.N.O.O.C.O.R.G
8	DAVE WHITE	SUMMIT CO ENGINEER	930-643-8377	
9	Dave Ritter	Summit SWCD	330-929-2171	DRITTER@SummitSWCD.org
10	John Vittum	Vittum Auction Assoc.	330-658-2982	Vittumandrew@aol.com
11	Carla Dionio	Medina SWCD	330-722-2028 x 3	Carla-dionio@oh.nadnet.org
12	Todd Houser	Medina SWCD		
13	Laurei Pinning	Richfield Twp	330-659-4700	RTZONING@ALLTEL.NET
14	Roger Swan	Richfield Villages	330-659-9201	
15	Don Bogowski	OEPA	330-963-1145	
16	Don Jenkins	Ball Twp.		
17				
18				
19				
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**Yellow Creek Watershed  
Political Jurisdictions**

- Akron
- Bath Township
- Copley Township
- Cuyahoga Falls
- Fairlawn
- Granger Township
- Richfield Township
- Sharon Township
- Village of Richfield

Northeast Ohio Four County Regional Planning and Development Organization January, 2003  
Source: Ohio Department of Natural Resources

General Stormwater Management Principles in the Yellow Creek Watershed

	Formal Stormwater Ordinance or Policy for New Development	Formal Sediment and Erosion Control Ordinance or Standards	Established Sediment and Erosion Control Inspection Program	Established Stormwater Utility	Riparian Setback Ordinance or Standards	Conservation Development is Required or Encouraged	Innovative Stormwater Management BMP's are Promoted	Established Stormwater Treatment Criteria	Illicit Connection Detection Program	Public Involvement and Outreach Program
Bath Township	● <sup>1</sup>	○	● <sup>3</sup>	○	● <sup>3</sup>	●	● <sup>1</sup>	○	● <sup>1</sup>	● <sup>3</sup>
Village of Richfield	○	○	● <sup>3</sup>	○	● <sup>3</sup>	●	○	○	○	○
Copley Township	● <sup>1</sup>	○	● <sup>3</sup>	○	● <sup>3</sup>	○	● <sup>1</sup>	○	● <sup>1</sup>	● <sup>3</sup>
City of Fairawn	○	○	● <sup>3</sup>	○	○	○	○	○	○	○
Richfield Township	● <sup>1</sup>	○	● <sup>3</sup>	○	● <sup>3</sup>	●	● <sup>1</sup>	○	● <sup>1</sup>	● <sup>1</sup>
City of Cuyahoga Falls	●	○	● <sup>3</sup>	●	○	○	○	○	○	○
City of Akron	●	○	○	●	○	●	○	○	○	○
Granger Township	● <sup>2</sup>	● <sup>4</sup>	● <sup>4</sup>	○	○	○	● <sup>2</sup>	○	● <sup>4</sup>	● <sup>4</sup>
Sharon Township	● <sup>2</sup>	● <sup>4</sup>	● <sup>4</sup>	○	○	○	● <sup>2</sup>	○	● <sup>4</sup>	● <sup>4</sup>

● = Program already exists    ○ = Program does not exist    ◐ = Program is under development  
<sup>1</sup>Administered by Summit County Engineer    <sup>2</sup>Administered by Medina County Engineer    <sup>3</sup>Administered by Summit SWCD    <sup>4</sup>Administered by Medina SWCD

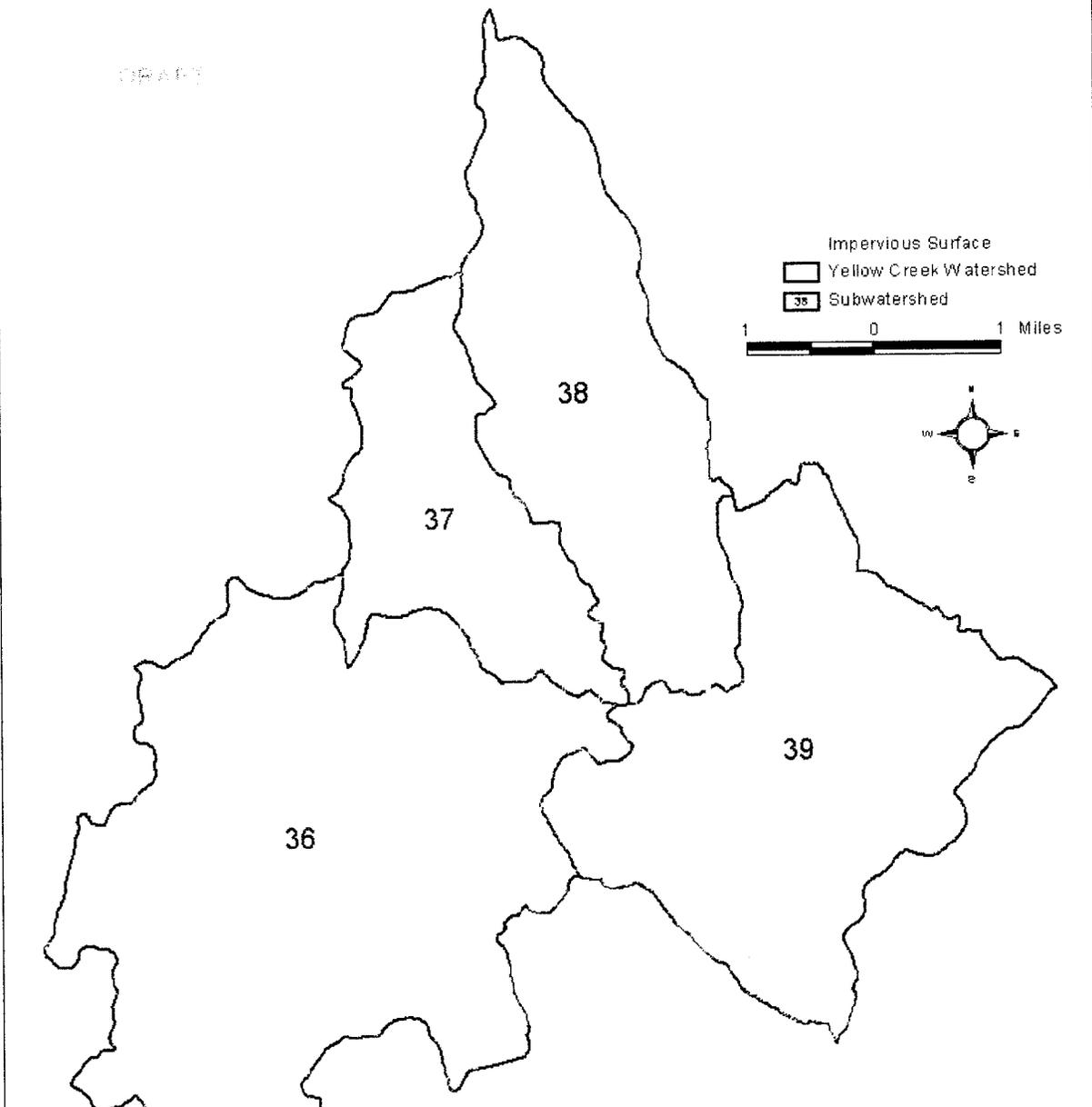
Specific Stormwater Management Requirements in the Yellow Creek Watershed

	Retention Volume Requirements	Stormwater Treatment Requirements	Runoff Calculation Requirements	SWPPP <sup>1</sup> Requirements	Non-structural BMP <sup>2</sup> Requirements	Stormwater Design Manual	Inspection and Maintenance Requirements
Summit County	Runoff from 75, 10, 5, & 2yr 24hr post development storms must be no greater than runoff from 2yr 24hr pre-development storm. Runoff from 50 & 100yr 24hr storms must be no greater than the same storm under pre-development conditions	None, but treatment BMPs are detailed in Stormwater Manual	-Rational Method for sites <20ac. -Modified Rational -SCS Tabular -Unit Hydrograph -SCS Graphical Peak Discharge	Must be approved by SWCD and included in final plans	None required, but examples are listed in Stormwater Manual	Yes	County assumes maintenance responsibility per Ohio Revised Code Chapter 6131
Medina County	Runoff from critical storm and all more frequent storms must be no greater than runoff from 1yr 24hr storm. The critical storm is determined by calculating the % increase in runoff between the 1yr 24hr pre-development and post development storms.	None	-Rational Method for sites <200 ac. -Hydrograph for sites >200 ac. -Peak Discharge (TR55)	Must be approved by SWCD and included in final plans	None required, but mentioned as "first line of defense" in regulations.	Yes, but included in regulations so it cannot be easily updated.	County assumes maintenance responsibility per Ohio Revised Code Chapter 6131
Village of Richfield	None	None	None	Must be approved by SWCD per agreement	None	No	None
City of Cuyahoga Falls	Runoff from 10, 5, & 2yr post development storms must be no greater than runoff from 2yr 24hr pre-development storm. Runoff from 25, 50 & 100yr 24hr storms must be no greater than the same storm under pre-development conditions	None	-Rational method for sites <2ac. -SCS Method for sites greater than 2 ac.	Must be approved by SWCD per agreement	None	No	None
City of Fairlawn	None	None	None	Must be approved by SWCD per agreement	None	No	None
City of Akron	None	None	SCS TR55 -Rational Method -Modified Rational Method	None	None	No	None
NPDES Phase II	None	Stormwater facilities on large construction sites must be sized to treat the Water Quality Volume	None	Must be developed prior to applying for NPDES permit coverage	SWPPP must make use of BMPs that preserve the natural condition of the site	Not required	Inspection and maintenance must be addressed in post construction runoff control ordinance

<sup>1</sup> Stormwater Pollution Prevention Plan

<sup>2</sup> Best Management Practice

# Impervious Surfaces in the Yellow Creek Watershed



Subwatershed	Total Area (ac.)	Total Impervious Area (ac.)	% Impervious Area	% Impervious Area (1994)
36	8040.7	548.6	6.8%	3.4%
37	2471.5	98.7	4.0%	1.8%
38	4051.7	376.2	9.3%	6.8%
39	5254.2	772.0	14.7%	10.2%
Total	19818.1	1795.5	9.1%	5.6%

Northwest Ohio Four County Regional Planning and Development Organization, December 2002  
 Source: Summit County Department of Community and Economic Development, Summit County Fiscal Office, Medina County Engineer

the yellow creek consortium

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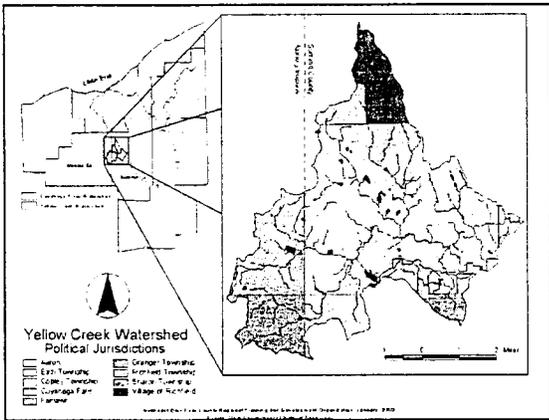
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project introduction

**Purpose:**  
To foster consensus and cooperation between the political jurisdictions that make up the Yellow Creek Watershed with regard to improved strategies for storm water management.

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project introduction

**A consistent and cooperative implementation of improved storm water management strategies throughout the watershed will:**

1. Reduce the cost of NPDES Phase II compliance.
2. Increase public and governmental awareness of the impacts of storm water runoff.
3. Simplify the development process by standardizing requirements.

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project introduction

**A consistent and cooperative implementation of improved storm water management strategies throughout the watershed will:**

4. Allow communities to share the burden of innovative technology.
5. Improve the likelihood of receiving external funding to complete watershed protection and restoration projects.

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project introduction

**A consistent and cooperative implementation of improved storm water management strategies throughout the watershed will:**

6. Benefit the water quality and the biological communities of the stream by moderating the effects of storm water flow and reducing the impacts of non-point source pollution.

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project introduction

**Objectives**

1. Develop a sustainable watershed consortium of local community officials and other stakeholders.
2. Develop a list of storm water management principles for watershed-wide consensus.
3. Create a location-specific Action Plan based upon the agreed principles.
4. Expand public awareness and involvement in the efforts of the consortium.

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project introduction

**Timeframe**

- Meetings will be held every 2-3 months.
- Priority areas will be identified in 3-6 months.
- List of agreed principles will be developed in 3-6 months.
- Action plan will be developed in 6-12 months.
- Brochures and fact sheets will be developed and distributed in 3-12 months.
- Two public meetings will be held in the next 12 months.

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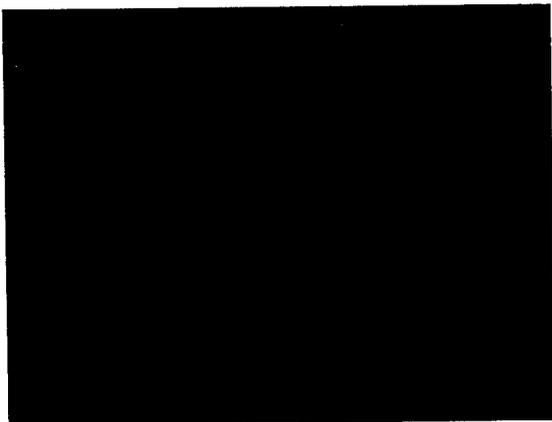
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## guidelines review

**A review of existing guidelines and regulations in the communities that make up the Yellow Creek Watershed has been completed.**

- Common themes
- Gaps
- Phase II

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## land use study

**Impervious area in the Yellow Creek Watershed was measured using data derived from year 2000 orthophotos.**

- Summit County Department of Community and Economic Development
- Summit County Fiscal Office
- Medina County Engineer

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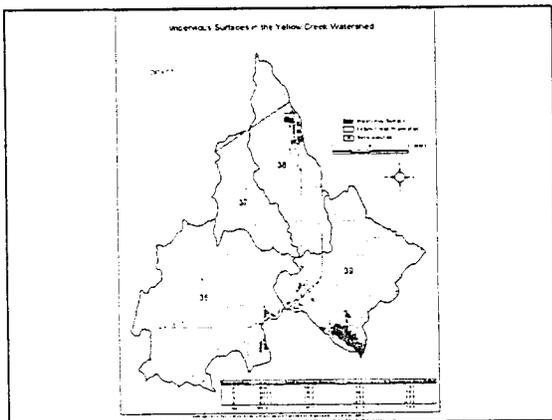
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land use study

**Results:**

- Total watershed imperviousness measured at 9.1%
- Subwatershed imperviousness ranged from 4.0% to 14.7%.
- Yellow Creek Comprehensive Watershed Management Plan (NEFCO 1999) cites total watershed imperviousness in 1994 at 5.6%

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land use study

**Conclusions:**

- The efforts of the Yellow Creek Consortium are timely as the watershed is approaching the 10% imperviousness threshold.
- Without adequate control, this is the point at which streams begin to show distinct signs of degradation as a result of increased volume and velocity of storm water runoff.

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**Meeting Agenda**  
**Tuesday April 29, 2003**  
**2:00 PM**

**Bath Township Offices: Fire Training Room**  
**3864 West Bath Road**  
**Bath, OH 44210**

- I. Review of input received from the Public Forum held April 9, 2003  
-Adam Negley, NEFCO
  
- II. Discussion of storm water principles for watershed-wide consensus
  - a. Storm water treatment criteria
  - b. Sediment and erosion control ordinance or standards
  - c. Storm water utility
  - d. Riparian setback ordinance
  - e. Conservation development
  - f. Use of innovative storm water BMPs
  - g. Illicit connection and detection
  - h. Public involvement and outreach
  - i. Storm water management ordinance or standards
  - j. Sediment and erosion control inspection program
  - k. Other principles suggested by the Consortium
  
- III. Discussion of priority areas
  
- IV. Schedule next meeting

# NEFCO

NORTHEAST OHIO FOUR COUNTY REGIONAL PLANNING & DEVELOPMENT ORGANIZATION

180 East South Street, Akron, Ohio 44311-2035

(330) 252-0337 • Fax (330) 252-0664

*James A. Howey, Chairman*

*Joseph Hadley, Jr., Executive Director*

April 1, 2003

Trustees  
Granger Township  
3717 Ridge Road  
Medina, OH 44256

SUBJECT: Yellow Creek Watershed Storm Water Management Consortium Meeting

Dear Trustees:

I have scheduled the next meeting of the Yellow Creek Watershed Storm Water Management Consortium for April 29, 2003 at 2:00 PM. The meeting will be held at the Bath Township Offices in the Fire Training Room. Enclosed you will find a draft agenda.

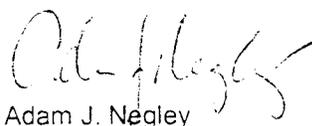
The purpose of this meeting will be to review the comments received at the April 9 public forum, and to begin the process of formulating a list of storm water management principles for watershed-wide consensus. Suggested principles were outlined at the first meeting, and along with the public input, will form the basis of discussion for the upcoming meeting. Consortium members should consider this list (found in agenda item 2) and also consider any other principles that might be of importance in improving the consistency of storm water management throughout the watershed. The format for this meeting will be very much a roundtable discussion.

In addition, we will begin discussing watershed priority areas. Please begin to consider specific areas of the watershed that you feel should be included in the action plan for potential future protection or remediation activities. Over the course of the next few months, I will be compiling this list and visiting the sites to document current conditions. Your help in identifying these areas will be greatly appreciated.

Please let me know if you plan to attend this meeting, and as always, please call me with any questions or concerns.

Thank you for your continued support.

Sincerely,



Adam J. Negley  
Environmental Planner

Yellow Creek Watershed Storm Water Management Consortium Meeting - April 29, 2003

#	Name	Organization	Phone #	Email
01	RACHEL SWAN	VILLAGES OF RICHFIELD	330.658.9201	NSO1
02	<del>James</del>	BOSTON	330.666.2823	15CA6050 @AOL
03	Peter Bell	Cuyahoga Falls	730.971-8480	bellpe@city.ohio.gov
04	David White	County of Summit Engin	330.643.4833	
05	Don Jenkins	Bath Township		
06	Chris Hartman	Medina SWCO		
07	Jim white	Cuyahoga RAR		
08	<del>Bill Pierce</del>			
09	Bill Pierce			
30	Randy Keitz	ODNR - DSWC		
31				
32				
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Meeting Agenda  
Thursday June 19, 2003  
2:00 PM  
NEFCO Offices  
180 East South Street  
Akron, Ohio 44311

- I. Review of Goal, Objectives, and Actions
- II. Discussion of the Project Status
- III. Discussion of next steps
- IV. Tentative Schedule of work program

**ATTENDANCE SHEET**  
**Yellow Creek Consortium**  
**June 19, 2003**  
**2:00 p.m.**

	NAME (please print)	REPRESENTING	ADDRESS (email)
1			
2	ROGER EVAN	VILLAGE OF RICHFIELD	
3	CHRISTIE HANCOCK	DEPARTMENT OF WATER EOP	hancockc@water.com
4	Fred Neugebauer	City of Akron	neugebfr@akron.oh.us
5			
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Principle	Coordinating Parties	Funding Sources	Time Frame	Expected Improvements
1. Education efforts	Summit SWCD Cuyahoga RAP NEFCO	Ohio Environmental Education Fund Lake Erie Protection Fund	One year for development and implementation	Greater understanding of technical aspects of Phase II. Allow for improved rule making process in communities
2. Watershed assessment	Summit SWCD Medina SWCD ODNR Ohio EPA	Ohio Environmental Education Fund Lake Erie Protection Fund	Six months for site selection and establishing base line conditions Subsequent monitoring every six months	Greater ability to assess effectiveness of BMPs Diagnostic tool to address problems in early stages
3. Post-construction runoff control legislation	County Engineer City Engineer Soil and Water Conservation District NEFCO	Permit Fees	Must be completed by March 10, 2006	Reduced water quality impacts to Yellow Creek
4. Sediment and erosion control legislation	Soil and Water Conservation District County Engineer NEFCO	Permit fees	Must be completed by March 10, 2006	Reduced sediment loading to stream Greater consistency in implementation of sediment and erosion control practices
5. Storm water utilities	County Engineer City Engineer Village Engineer	N/A	1-2 Years	Provide viable funding source for storm water improvements Provide incentives for property owners to reduce storm water runoff
6. Riparian setback legislation	Soil and Water Conservation District NEFCO	N/A	1-2 Years	Reduced pollutant loading to stream Reduced stream-bank erosion Less property damage resulting from stream channel movement
7. Conservation development"	Soil and Water Conservation District NEFCO	N/A	1-2 Years	Reduced pollutant loading to stream Reduced stream-bank erosion
8. Innovative storm water management	Soil and Water Conservation District County Engineer NEFCO	Lake Erie Protection Fund Section 319 of Clean Water Act	1-2 Years	Reduced pollutant loading to stream Reduced stream-bank erosion

# **The Yellow Creek Consortium**

A Watershed-Based Approach to Storm Water Management

## **Meeting Agenda**

**Tuesday, August 26, 2003**

**2:00 PM**

Bath Township Offices: Fire Training Room

3864 West Bath Road

Bath, OH 44210

1. Introductions of Consortium meeting attendees
2. Quick recap of project goals and objectives
3. Review the 6 NPDES Phase II Control Measures
4. Review draft principles of Consortium
5. Reach a consensus on principles – consistent with Phase II, SWCD, and jurisdiction objectives
6. Discuss problem/priority areas
7. Discuss the next steps for Consortium to pursue

August 12, 2003

Name  
Title  
Address  
City State Zip

SUBJECT: Yellow Creek Watershed Storm Water Management Consortium Meeting

Dear \_\_\_\_\_:

I have scheduled the next meeting of the Yellow Creek Watershed Storm Water Management Consortium for Tuesday August 26, 2003 at 2:00 PM. The meeting will be held at the Bath Township Offices in the Fire Training Room. Enclosed you will find a draft agenda, a list of the drafted principles, and a form for priority areas.

The purpose of this meeting will be to review the previous two consortium meetings and the public forum, to finalize the list of storm water management principles for watershed-wide consensus, and to discuss watershed priority areas.

Please begin to consider specific locations within the watershed that you feel should be included in the action plan for potential future protection or remediation activities. I have enclosed a sheet for each consortium member to fill out. Please complete the form and bring it to the consortium meeting. We can discuss the results and begin drafting a list of priority locations. Over the next few months, I will be compiling this list and visiting the sites to document current conditions. Your help in identifying these areas will be greatly appreciated.

Please let me know if you plan to attend this meeting. Please call me if you have any questions or concerns.

Thank you for your continued support.

Sincerely,

Nick Lautzenheiser  
Environmental Planner  
330.252.0337

Yellow Creek Watershed Storm Water Management Consortium Meeting - August 26, 2003

#	Name	Organization	Phone #	Email
1	Norma Sathaur		873-3499	
2	Philip King	City of Fairlawn	668-9500	
3	Fred Neugebauer	City of Akron	928-1164 x487	neugefr@ci.akron.oh.us
4	CHARLES HAMBLY	CUYAHOGA RIVER RAP	216-241-2414 x 253	hamblyc@CuyahogaRiverRAP
5	Joan Hug-Anderson	Summit SWCO		
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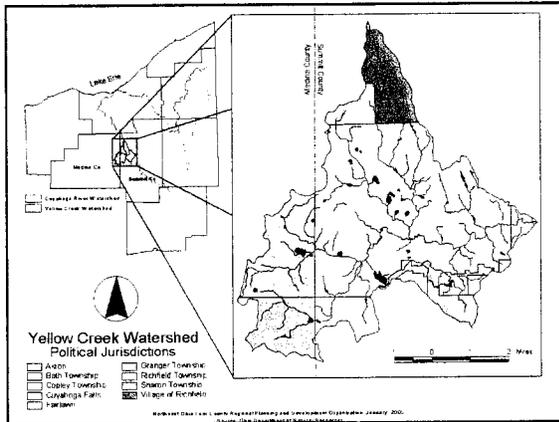
## Yellow Creek Watershed Storm Water Management Consortium

Third Consortium Meeting

August 26, 2003  
Nick Lautzenheiser  
NEFCO

## Meeting Agenda

- Introductions of Consortium meeting attendees
- Quick recap of project goals and objectives
- Review the 6 NPDES Phase II Control Measures
- Review draft principles of Consortium
- Reach a consensus on principles – consistent with Phase II, SWCD, and jurisdiction objectives



## Project Purpose

To foster **CONSENSUS** and **COOPERATION** between the political jurisdictions that make up the Yellow Creek Watershed with regard to **IMPROVED STRATEGIES** for **STORM WATER MANAGEMENT**.

## Project Goals

1. Reduce the cost of NPDES Phase II compliance.
2. Increase public and governmental awareness of the impacts of storm water runoff.
3. Simplify the development process by standardizing requirements.

## Project Goals

4. Allow communities to share the burden of innovative technology.
5. Improve the likelihood of receiving external funding to complete watershed protection and restoration projects.
6. Benefit the water quality and the biological communities of the stream by moderating the effects of storm water flow and reducing the impacts of non-point source pollution.

## Project Objectives

1. Develop a sustainable watershed **CONSORTIUM** of local community officials and other stakeholders.
2. Develop a list of **STORM WATER MANAGEMENT PRINCIPLES** for watershed-wide consensus.
3. Create a location-specific **ACTION PLAN** based upon the agreed principles.
4. Expand **PUBLIC AWARENESS** and **INVOLVEMENT** in the efforts of the Consortium.

## Guidelines Review

**A review of existing guidelines and regulations in the communities that make up the Yellow Creek Watershed has been completed.**

- Common themes
- Gaps
- Phase II

### General Stormwater Management Principles in the Yellow Creek Watershed

	Formal Stormwater Ordinance or Policy for New Development	Formal Substorm and Erosion Control Ordinance or Standards	Established Substorm and Erosion Control Inspection Program	Established Stormwater Liability	Separate Substorm Ordinances or Standards	Conservation Development or Reduced or Encouraged	Innovative Stormwater Management BMPs are Promoted	Established Stormwater Treatment Device	Wet Connection Collection Program	Public Involvement and Outreach Program
Wet Township	#1	0	#3	0	#3	*	#1	0	#1	#3
Village of Rowland	0	0	#2	0	0	*	0	0	0	0
Cooper Township	#1	0	#3	0	#3	0	#1	0	0	#3
City of Fairport	0	0	#2	0	0	0	0	0	0	0
Rowland Township	#1	0	#3	0	#3	*	#1	0	#1	#3
City of Cuyahoga Falls	*	0	#2	*	0	0	0	0	0	0
City of Akron	*	0	0	*	0	*	0	0	0	0
Orange Township	#2	#2	#4	0	0	0	#2	0	#4	#4
Sharon Township	#2	#4	#4	0	0	0	#2	0	#4	#4

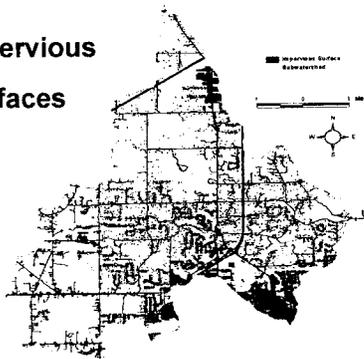
#1 Program already in place    #2 Program does not exist    #3 Program in under development  
 \* Administered by Summit County Engineer    \* Administered by Medina County Engineer    \* Administered by Summit SWCD    \* Administered by Medina SWCD

## Land Use Study – Imperviousness

**Impervious area in the Yellow Creek Watershed was measured using data derived from year 2000 orthophotos.**

- Summit County Department of Community and Economic Development
- Summit County Fiscal Office
- Medina County Engineer

## Impervious Surfaces

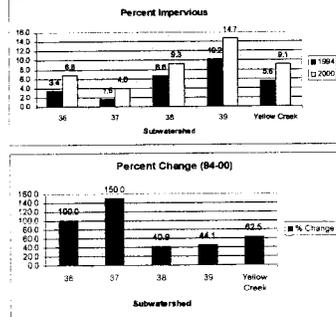


Northwest Ohio Four County Regional Planning and Development Organization, December 2002  
 Source: Summit County Department of Community and Economic Development, Summit County Fiscal Office, Medina County Engineer

## Impervious Surface Analysis

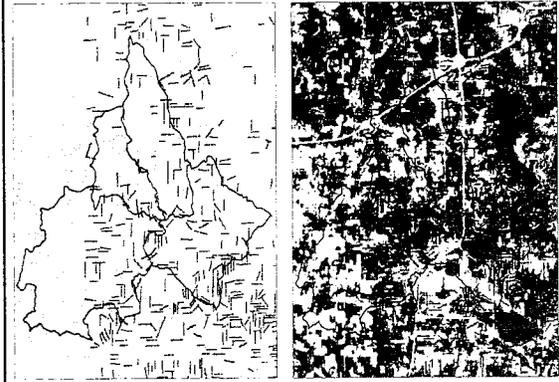
Subwatershed	Total Area (ac.)	Total Impervious Area (ac.)	% Impervious (2000)	% Impervious (1994)
36	8040.7	548.6	6.8%	3.4%
37	2471.5	98.7	4.0%	1.6%
38	4051.7	376.2	9.3%	6.6%
39	5254.2	772.0	14.7%	10.2%
Total	19818.1	1795.5	9.1%	5.6%

## Impervious Surface Analysis

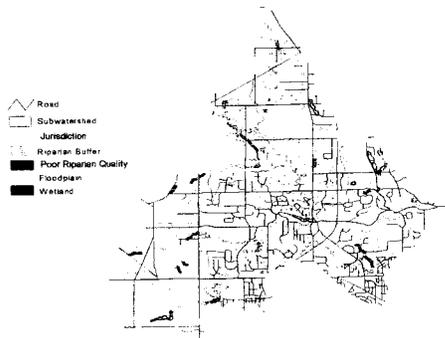


Agricultural (1994)

Wooded (1994)



## Riparian Quality Analysis



## NPDES Phase II 6 Control Measures

- Public Education and Outreach
- Public Participation and Involvement
- Illicit Discharge Detection and Elimination
- Construction Site Runoff Control
- Post-Construction Site Runoff Control
- Pollution Prevention/Good Housekeeping

## Yellow Creek Watershed Storm Water Management Consortium Principles

- Consistent with Summit and Medina County Engineers and NPDES Phase II regulations and requirements
- Consistent with Summit and Medina Soil and Water Conservation District objectives (riparian setback ordinances, education efforts, etc.)
- Consistent with objectives of affected jurisdictions within the Yellow Creek Watershed
- Principles should reflect the goals and objectives of all aforementioned organizations

## Yellow Creek Watershed Storm Water Management Consortium Principles

1. FOCUSED EDUCATION EFFORT
  - Target community decision-makers, general public
  - NPDES Phase II regulations
  - General storm water management concepts, pollution sources, impervious surfaces, erosion, sedimentation, riparian vegetation, etc.

Yellow Creek Watershed Storm  
Water Management Consortium  
Principles  
2. WATERSHED ASSESSMENT TOOLS  
– Establish baseline conditions  
– Monitor the effectiveness of BMPs and overall storm water management

Yellow Creek Watershed Storm  
Water Management Consortium  
Principles  
3. Consistent POST-CONSTRUCTION  
RUNOFF CONTROL LEGISLATION  
– All jurisdictions within the watershed  
– Consistent with NPDES Phase II requirements

Yellow Creek Watershed Storm  
Water Management Consortium  
Principles  
4. Consistent SEDIMENT and EROSION  
CONTROL LEGISLATION  
– All jurisdictions within the watershed  
– Consistent with NPDES Phase II requirements  
– New development/construction  
– Agricultural areas

Yellow Creek Watershed Storm  
Water Management Consortium  
Principles  
5. STORM WATER UTILITY formation  
– Cooperation with the county engineers, SWCDs, and jurisdictions within the watershed

Yellow Creek Watershed Storm  
Water Management Consortium  
Principles  
DRAFT  
6. Universal RIPARIAN SETBACK  
LEGISLATION  
– Adoption by all jurisdictions within the watershed  
– Clear delineation of buffer areas

Yellow Creek Watershed Storm  
Water Management Consortium  
Principles  
DRAFT  
7. CONSERVATION DEVELOPMENT  
PRACTICES  
– Minimizing disturbed areas  
– Cluster development design  
– Reducing road width/length  
– Breaking up large impervious areas (parking lots) with vegetated filter strips

Yellow Creek Watershed Storm  
Water Management Consortium  
Principles

8. Encouragement of INNOVATIVE STORM  
WATER MANAGEMENT PRACTICES

Principles of Consortium

- Standardize principles/objectives to match goals of Engineer/NPDES, SWCDs, and jurisdictions
- Common/joint effort at effectively addressing storm water management issues and devising plans of action
- Adhere to Consortium principles when developing a location-specific action plan

PRIORITY and PROBLEM  
AREAS

- Specific locations within the watershed that should be included in the final Action Plan for future protection and remediation activities
- Handout discussion

Next Consortium Meeting?

- Goals to be accomplished
- Future direction of Consortium
  - Priority area identification
  - Brochure/fact sheet compilation and dissemination
  - Action Plan identifying specific locations where protection and remediation activities will occur and to identify sources for grants and funding

Thank You

# The Yellow Creek Consortium

## A Watershed-Based Approach to Storm Water Management

### **NPDES Phase II – 6 Control Measures:**

1. Public Education and Outreach
2. Public Participation and Involvement
3. Illicit Discharge Detection and Elimination
4. Construction Site Runoff Control
5. Post-Construction Site Runoff Control
6. Pollution Prevention/Good Housekeeping

### **Yellow Creek Watershed Storm Water Management Consortium Draft Principles:**

1. Focused Education Effort
2. Watershed Assessment Tools – monitor effectiveness of BMPs and overall storm water management
3. Consistent Post-Construction Runoff Control Legislation
4. Consistent Sediment and Erosion Control Legislation
5. Storm Water Utility Formation
6. Universal Riparian Setback Legislation
7. Conservation Development Practices
8. Use of Innovative Storm Water Management Practices

### **Other Principles:**

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**Priority Area Identification** (Please complete form and bring to consortium meeting)

**Priority Area 1**

Location: \_\_\_\_\_  
Activity/Land Use: \_\_\_\_\_  
Problem/Issue: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Priority Area 2**

Location: \_\_\_\_\_  
Activity/Land Use: \_\_\_\_\_  
Problem/Issue: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Priority Area 3**

Location: \_\_\_\_\_  
Activity/Land Use: \_\_\_\_\_  
Problem/Issue: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Priority Area 4**

Location: \_\_\_\_\_  
Activity/Land Use: \_\_\_\_\_  
Problem/Issue: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Meeting Agenda**  
**Thursday March 18, 2004**  
**2:00 PM**

**Bath Township Offices: Trustees Meeting Room**  
**3864 West Bath Road**  
**Bath, OH 44210**

- I. Welcome/Introductions
  
- II. Yellow Creek Consortium Final Report
  
- III. Summit County Engineer's involvement in future watershed groups
  
- IV. Future steps for Yellow Creek
  
- V. Thank you for attending

# NEFCO

**NORTHEAST OHIO FOUR COUNTY REGIONAL PLANNING & DEVELOPMENT ORGANIZATION**

180 East South Street, Akron, Ohio 44311-2035

(330) 252-0337 • Fax (330) 252-0664

*Fred Cannon, Chairman*

*Joseph Hadley, Jr., Executive Director*

February 26, 2004

Mr. Don Jenkins  
Trustee  
Bath Township  
3864 West Bath Road  
Bath, OH 44210

SUBJECT: Yellow Creek Watershed Storm Water Management Consortium Meeting

Dear Mr. Jenkins:

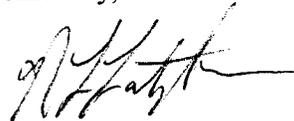
I have scheduled the final meeting of the Yellow Creek Watershed Storm Water Management Consortium for Thursday March 18 at 2:00 PM. The meeting will be held at the Bath Township offices in the Trustees Room.

The purpose of this meeting will be to review feedback from the February public meeting, discuss the contents of the final report, and to discuss potential future endeavors concerning the Yellow Creek watershed.

Please call or e-mail me if you plan to attend this meeting or if you have any questions or concerns.

Thank you for your continued support.

Sincerely,



Nick Lautzenheiser  
Environmental Planner  
[nlautzenheiser@nefcoplanning.org](mailto:nlautzenheiser@nefcoplanning.org)

Yellow Creek Watershed Consortium Meeting - March 18, 2004

#	Name	Organization/Address	Phone #	Email
1	Randy Keitz	ODNR Div. of Soil & Water Conser.	730-4420 x111	randy.keitz@oh.nacdn.net.org
2	Norma Sothear		330-873-3499	
3	Jay Masley	Summit Co. Engineer	330-643-8375	
4	Philip Kirk	City of Fairport	330-668-9550	
5	Debbie Stein	Citizen	330-668-8339	
6	CHARLES C. HAMBLEY	CUYAHOGA RIVER RAP	216-241-2414 x 253	Hambley C @ Cuyahoga River RAP.org
7	Fred Neugebauer	City of Akron	330-928-1164	neugefr@ci.akron.oh.us
8	RAGER SHAW	VILLAGE OF RICHFIELD	330-659-9201	RICHFIELD VILLAGE@OH.ORG
9	Elana Goodrich	Bath Twp	330-666-9007	egoodrich@bathtownship.oh.us
10	Donald M. Johnson	BATH Township	330-666-4007	
11	JOAN HUGSTADTSON	SUMMIT SWED	330-929-2871 v12	Jhugand@summitswed.org
12	Dave Keitz	Summit SWED	" x14	d.keitz@summitswed.org

## **APPENDIX B**

### **Public Meeting Materials**

## **Public Meetings**

Meeting 1: April 9, 2003

- Introduction to storm water management
- Discussion on domestic storm water volume reduction
- Discussion on domestic storm water pollution prevention
- Small group discussion on various topics regarding the Yellow Creek watershed

Meeting 2: February 11, 2004

- Discuss contents of Action Plan
- Discuss possible future permanent watershed group

# NEFCO

NORTHEAST OHIO FOUR COUNTY REGIONAL PLANNING & DEVELOPMENT ORGANIZATION

180 East South Street, Akron, Ohio 44311-2035

(330) 252-0337 • Fax (330) 252-0664

*James A. Howey, Chairman*

*Joseph Hadley, Jr., Executive Director*

## PUBLIC FORUM NOTICE

**What:** Public Forum Sponsored by the Yellow Creek Watershed Storm Water Management Consortium

**When:** Wednesday April 9, 2003  
6:30-8:00 PM

**Where:** Bath Township Offices  
Fire Training Room  
3864 West Bath Road  
Bath, OH 44210

A public forum will be held on Wednesday April 9, 2003 at 6:30 PM to inform members of the community about the efforts of the Yellow Creek Watershed Storm Water Management Consortium, and to solicit comments regarding the implementation of improved strategies for managing storm water in the Yellow Creek Watershed.

The public meeting will include information on how individuals and commercial interests can help alleviate storm water problems by employing simple and economical management practices. Additionally, there will be a small group discussion where attendees can voice their concerns regarding storm water and related non-point source pollution issues. These comments will be used to formulate a list of storm water management principles for watershed-wide consensus.

The Yellow Creek Watershed Storm Water Management Consortium is supported by a Lake Erie Protection Fund Grant, which NEFCO received, and is made up of community officials and local stakeholders. The intent of the Consortium is to build consensus and to foster cooperation between the political jurisdictions that make up the Yellow Creek Watershed with regard to improved strategies for storm water management.

This project is being coordinated by the Northeast Ohio Four County Regional Planning and Development Organization (NEFCO), a regional council of governments created by the elected officials within Portage, Stark, Summit and Wayne Counties. NEFCO is a voluntary organization that enables local officials to discuss problems facing the Region and to develop strategies to cope with them.

Please contact Adam Negley at 330.252.0337 if you plan on attending this public forum to ensure adequate seating, or if you need additional information regarding this meeting.

akron.com

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Online**

04-03-2003

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Features](#)[Meeting  
Archives](#)[Contact Us](#)[Editorial](#)[Webmaster](#)[Community News](#)

## Meeting note

BATH -- A public forum will take place April 9 at 6:30 p.m. in the fire training room at the Bath Township Offices, 3864 West Bath Road, to inform members of the community about the efforts of the **Yellow Creek Watershed Storm Water Management Consortium** and to solicit comments regarding the implementation of improved strategies for managing storm water in the Yellow Creek Watershed. Comments will be used to formulate a list of storm water management principles for watershed-wide consensus. For more information and to reserve a spot, call Adam Negley at (330) 252-0337.

\* **DOWNTOWN AKRON -- The Friends of Children's Hospital** will host a general meeting April 22 at the New Akron Civic Theatre, with assembly at 11:30 a.m. A box lunch will be served at noon, followed by a tour of the landmark Civic. The cost is \$14, and the reservation deadline is April 18. The public is welcome. Send checks to Carolyn Vogenitz, 3326 Waterside Drive, Akron, OH 44319. Call (330) 645-9928 for more information.

\* **WEST AKRON -- Zonta Club of Akron/Barberton/Cuyahoga Falls** will host a dinner meeting April 16 at 6 p.m. at Akron Woman's City Club, 732 W. Exchange St. The cost for members and guests is \$14. For more information, call (330) 762-6261.

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[Click here to return to Community News menu.](#)

## Public Forum

# Agenda

Wednesday, April 9, 2003

6:30-8:00 PM

Bath Township Offices: Fire Training Room  
3864 West Bath Road  
Bath, OH 44210

- I. **Welcome**
  
- II. **Storm water: What is it, and why is it a problem?**
  - Adam Negley, Environmental Planner  
Northeast Ohio Four County Regional Planning and Development Agency
  
- III. **Storm water volume reduction at home**
  - Chris Hartman, District Manager  
Medina County Soil and Water Conservation District
  
- IV. **Storm water pollution prevention at home**
  - Dave Ritter, Urban Resource Specialist  
Summit Soil and Water Conservation District
  
- V. **Small group discussion**
  
- VI. **Closing remarks**

**Yellow Creek Watershed Storm Water Management Consortium**  
Public Forum April 9, 2003

Please use this sheet to provide any individual comments or suggestions you may have regarding the efforts of the Yellow Creek Watershed Storm Water Management Consortium.

Comments may be handed in at the end of the public forum, or can be sent to our office.

NEFCO  
180 East South Street  
Akron, OH 44311  
Fax: 330.252.0664  
Email: nefco@att.net

**Reducing Storm Water  
Runoff on Your Homesite**



Madison County  
Arkansas  
1820

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**Tonight's Goal:**

To demonstrate practices the typical homeowner can implement to reduce the volume of storm water flowing off their property.

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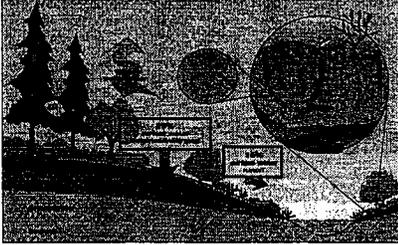
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**Natural Areas vs. Developed Areas**



Native Soil

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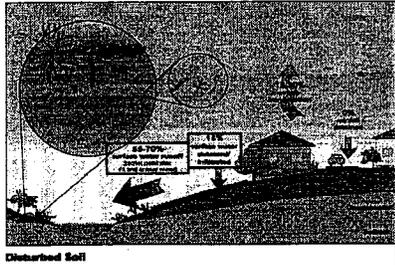
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### Natural Areas vs. Developed Areas



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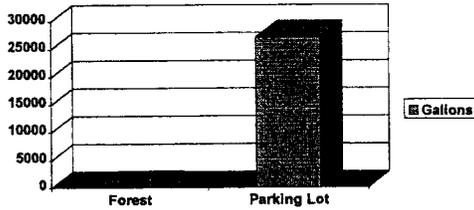
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### Runoff Generated by 1" Rainfall over 1-acre Parcel



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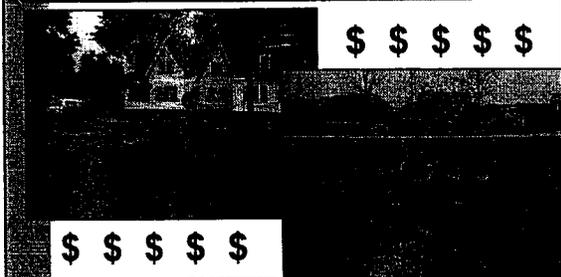
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### Impacts of Increased Runoff Volumes



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**A combination of practices that...**

- Increase infiltration
- Better manage runoff & promote "run-on"
- Decrease impervious surfaces

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**Increase Infiltration**

- Reduce soil compaction
- Landscaping alternatives
- Turf management

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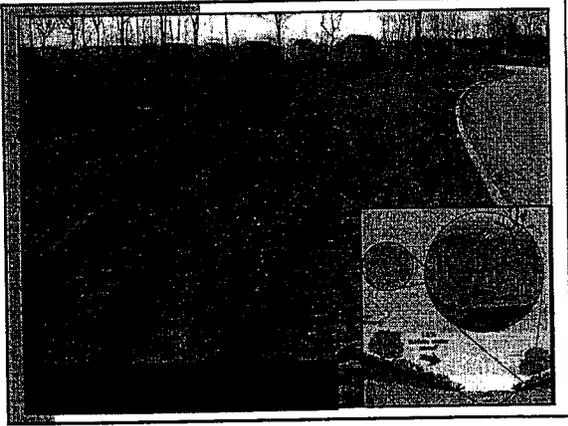
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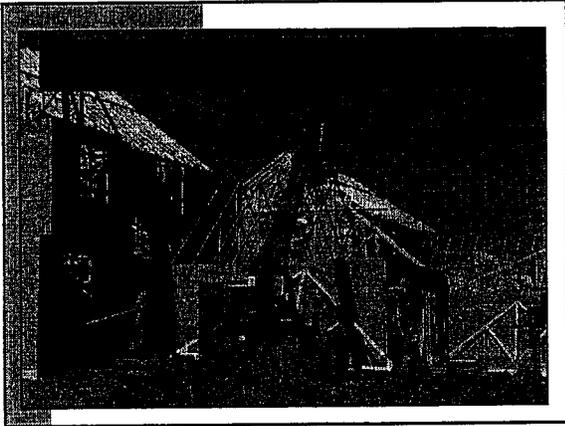
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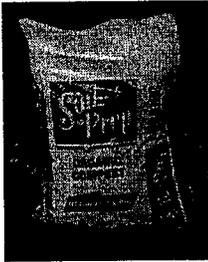
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**Reverse Soil Compaction on Existing Homes: Add Compost**

*A study completed in Seattle, WA showed the addition of compost amendments to urban soils reduced runoff from 29-50% over soils with no amendments added.*



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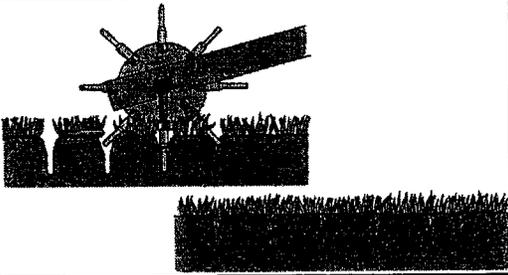
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**Reverse Soil Compaction on Existing Homes: Aerate Your Lawn**



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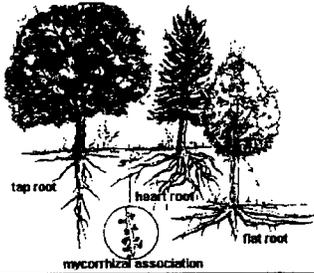
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## Reverse Soil Compaction on Existing Homes: Plant Trees




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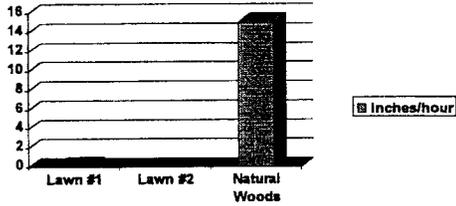
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## Permeability Rates



Study completed in Ocean County, NJ – March '01

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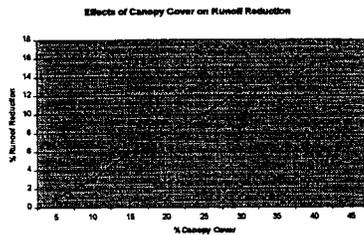
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## Tree Canopy Cover Study: Garland, TX – 3.86 acre site




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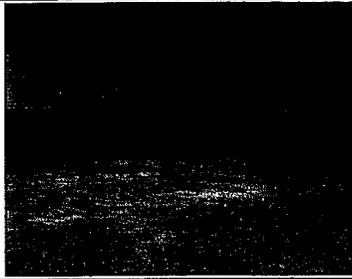
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**Minimize Soil Compaction on New Homes: Avoid Compaction**



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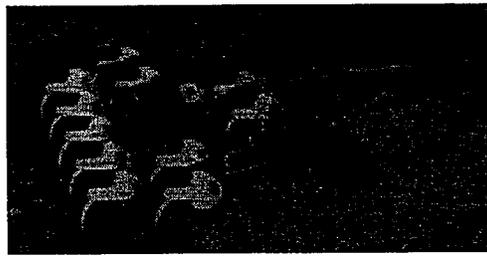
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**Minimize Soil Compaction on New Homes: Break-up Compaction**



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**Increase Infiltration: Landscape Alternatives**



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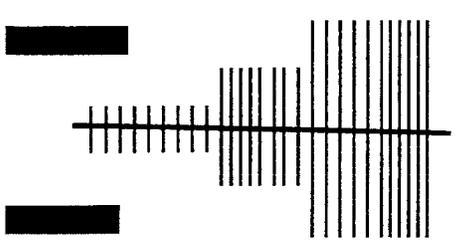
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**Increase Infiltration:  
Turf - Let it Grow Tall**



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**Better Manage Runoff &  
Promote "Run-on"**

- Disconnect gutter downspouts
- Collect storm water
- Maintain open swales and ditches
- Sloping impervious areas

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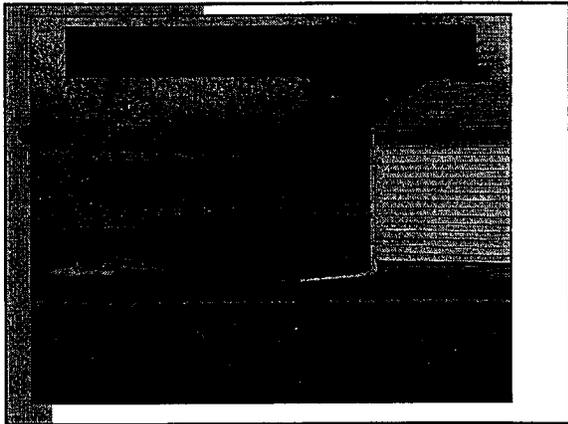
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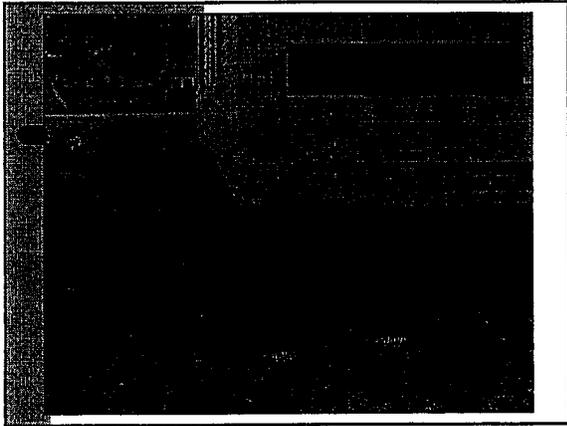
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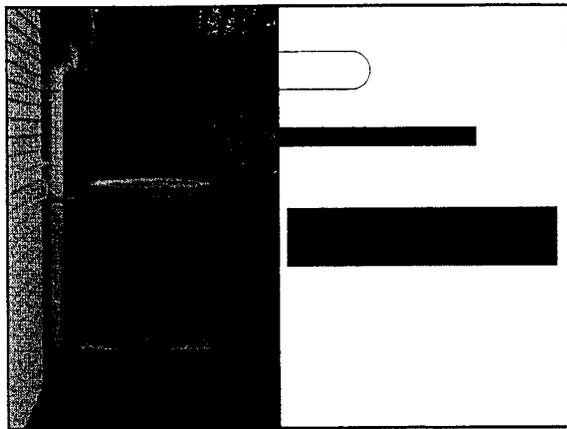
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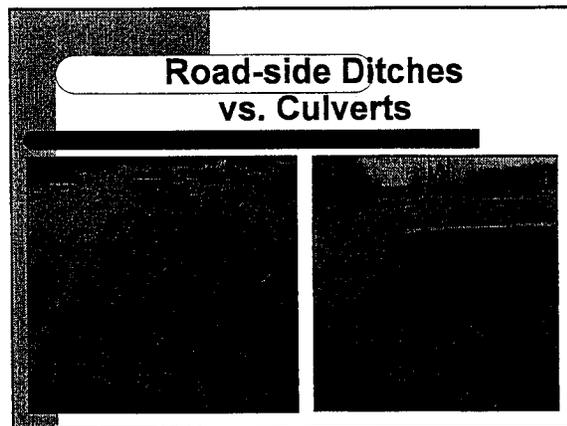
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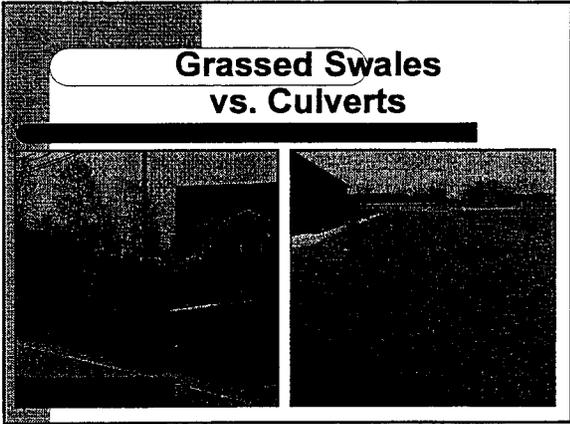
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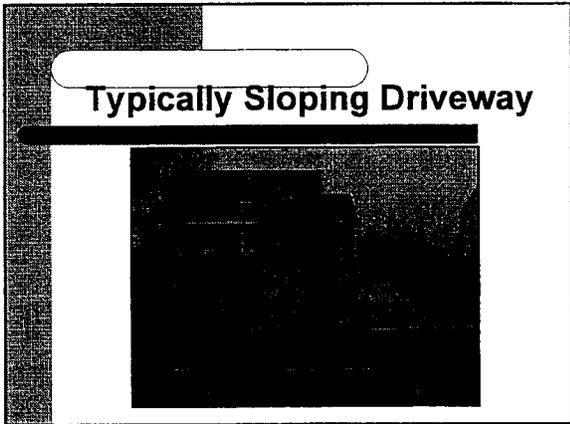
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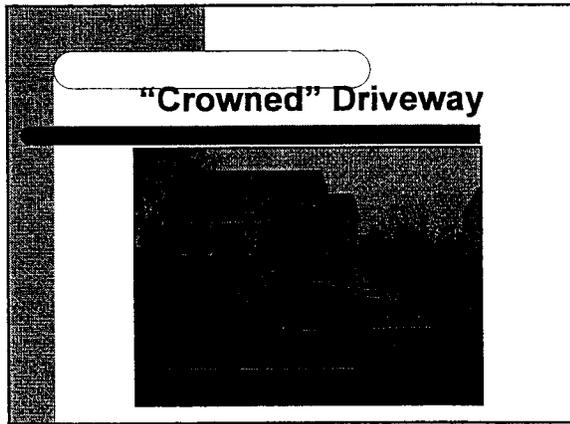
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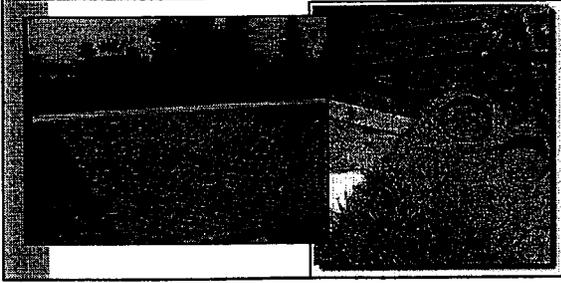
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**Decrease Impervious Areas:  
Pervious Alternatives**




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**Decrease Impervious Areas:  
Build Up vs. Out**

Type of House	Living Space	Roof Area	Runoff from 1" Rainfall
Ranch (1-story)	2000 ft <sup>2</sup>	2000 ft <sup>2</sup>	1250 gallons
Colonial (2-story)	3000 ft <sup>2</sup>	1500 ft <sup>2</sup>	938 gallons

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**Top 5 Practices to Implement  
on an Existing Home**

- Let grass grow taller
- Maintain all open drainageways (ditches & swales)
- Disconnect downspouts and/or use a rain barrel or cistern
- Aerate your lawn
- Plant trees & shrubs

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**Top 5 Practices to Implement  
on a New Home**

- Prevent soil compaction during construction
- Add organic amendments to your soil
- Plant trees & shrubs
- Disconnect downspouts and/or use a rain barrel or cistern
- Promote "run-on"

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Yellow Creek Watershed Storm Water Management Consortium  
Public Forum April 9, 2003

Facilitator Name: \_\_\_\_\_

Group Number: \_\_\_\_\_

Number of Participants: \_\_\_\_\_

**Section 1:** Following are 10 statements; please react to these statements with a "yes" or "no".

1. Storm water runoff is natural and we don't need to do anything about it except at the points where there are visible problems.
2. Property owners should be responsible for controlling storm water runoff.
3. Mandatory riparian protection standards are an intrusion on property owner's rights.
4. Property owners should not be forced to implement storm water management strategies.
5. Adequate regulations are in place to deal with storm water problems.
6. Storm water utility fees are the best way to pay for storm water management.
7. All detention and retention ponds should be maintained by public agencies.
8. Development can occur in a manner that does not adversely affect the volume or quality of storm water runoff.
9. Education, rather than regulation, is the best way to prevent or reduce storm water problems.
10. Incentives should be offered to property owners who use approved management practices to reduce runoff from their property.

Indicate number of yes and no responses with a hash mark

Yes	No

**Section 2:** Would you be willing to implement the following management practices on your property in order to moderate the effects of storm water runoff?

1. Decreased soil compaction	5. Storing roof runoff	9. Build up vs. out
2. Landscaping	6. Open ditches	10. Manage fertilizer runoff
3. Turf management	7. Pervious driveway materials	11. Construction BMPs
4. Disconnecting downspouts	8. Encourage "run-on"	12. Stream stewardship

Indicate number of Yes responses in appropriate box.

1.	6.	11.
2.	7.	12.
3.	8.	13.
4.	9.	

**Section 3:** Rate the following storm water problems by how common you perceive them to be in the Yellow Creek Watershed.

1. Non-point source pollution
2. Stream bank erosion
3. Flooding
4. Loss of riparian areas
5. Urban sprawl

**Section 4:** As a group, come up with 5 words that you feel best describe the Yellow Creek Watershed.

**Section 5:** As a group, come up with 3 words that you feel best describe your vision for the Yellow Creek Watershed.

**Section 6:** Please give us any other feedback you feel would be helpful.

Record order in column(s), use more than one column only if the group cannot agree on one order.

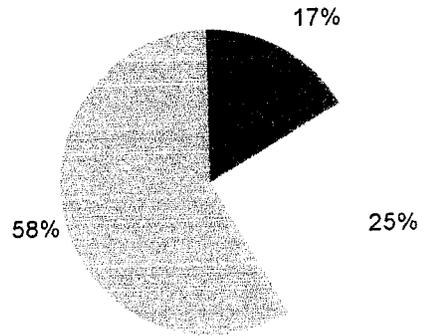

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2.
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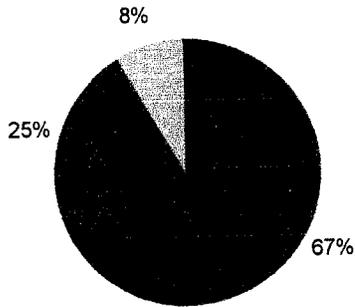
**Problem perceived to be the most common in the Yellow Creek Watershed**

**The participants were asked to put five storm water related problems in order of how common they perceived them to be in the Yellow Creek Watershed.**

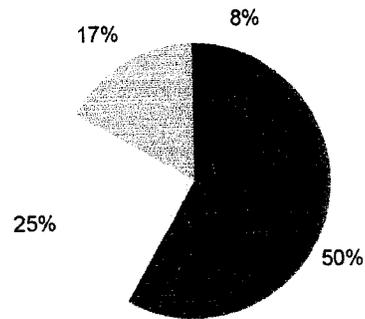
- Flooding
- Loss of Riparian Areas
- Non-point source pollution
- Stream Bank Erosion
- Urban Sprawl



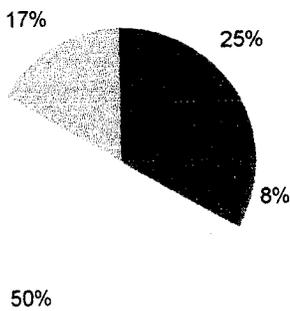
**Problem perceived to be the second most common in the Yellow Creek Watershed**



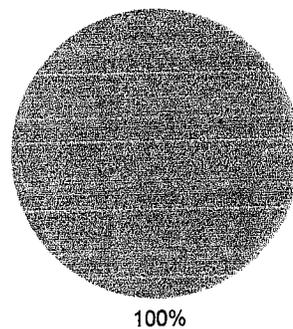
**Problem perceived to be the third most common in the Yellow Creek Watershed**



**Problem perceived to be the fourth most common in the Yellow Creek Watershed**

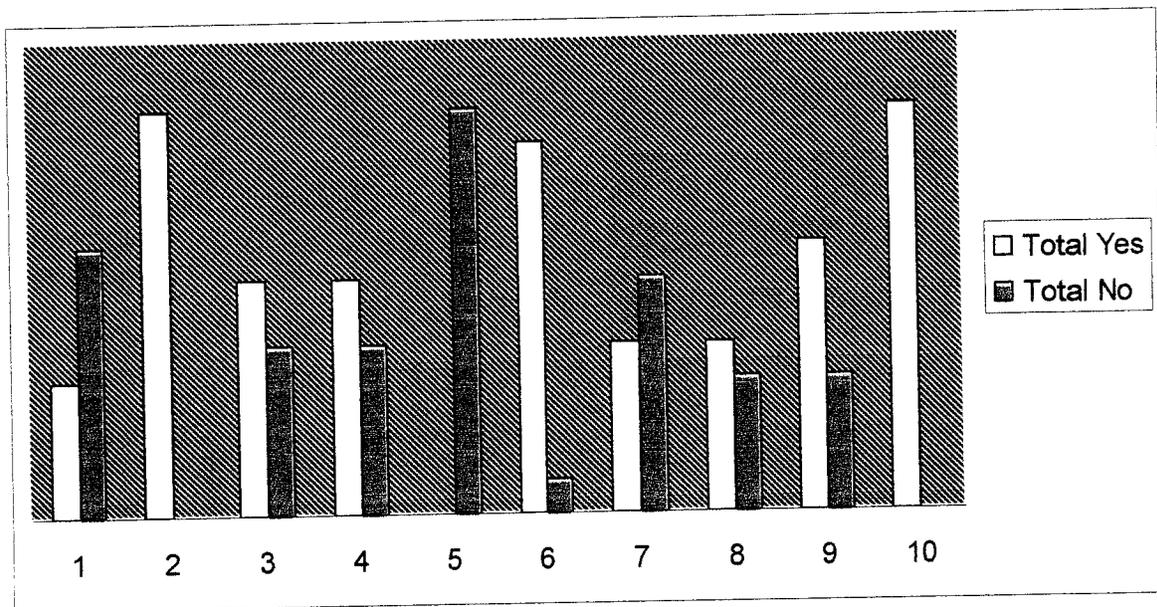


**Problem perceived to be the least common in the Yellow Creek Watershed**



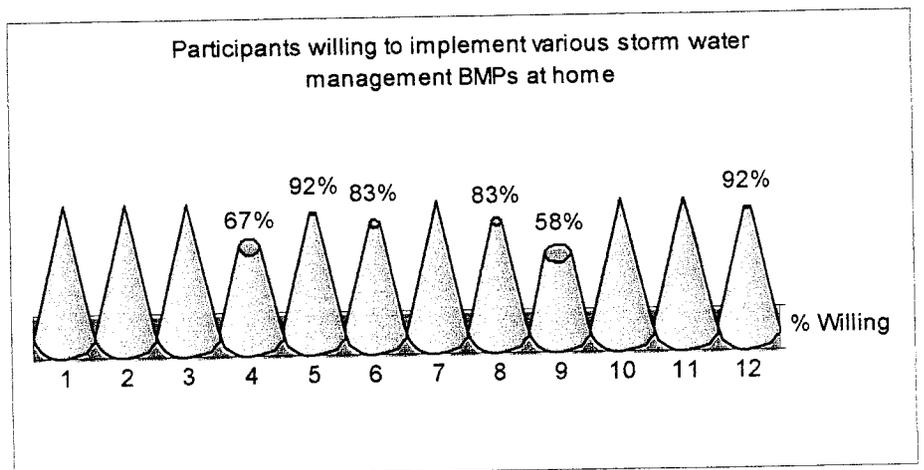
**Participants were asked to react to the following 10 statements with a "yes" or "no"**

1. Storm water runoff is natural and we don't need to do anything about it except at the point where there are visible problems.
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5. Adequate regulations are in place to deal with storm water problems
6. Storm water utility fees are the best way to pay for storm water management
7. All detention and retention ponds should be maintained by public agencies
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9. Education, rather than regulation, is the best way to prevent or reduce storm water problems
10. Incentives should be offered to property owners who use approved management practices to reduce runoff from their property



**Participants were asked if they would be willing to implement the following management practices on their property.**

1. Decrease soil compaction
2. Landscaping
3. Turf management
4. Disconnecting downspouts
5. Storing roof runoff
6. Open ditches
7. Pervious driveway materials
8. Encourage "run-on"
9. Build up vs. build out
10. Manage fertilizer runoff
11. Construction BMPs
12. Stream Stewardship



**Each small group was asked to come up with five words that best described Yellow Creek**

- **Aesthetically pleasing**
- **Attention**
- **Diverse biological**
- **Education/cooperation**
- **Endanger**
- **Gentrified**
- **Good quality**
- **Green**
- **Healthy**
- **Jewel**
- **Natural**
- **Preserve and protect**
- **Pristine**

**Each small group was asked to come up with three words that best described their vision for Yellow Creek**

- **Babbling brook**
- **Cooperation**
- **Exemplify**
- **Improve**
- **Improvement**
- **Natural**
- **Pristine**
- **Pristine**
- **Protect**
- **Steelhead**

# PUBLIC FORUM NOTICE

**What:** Public Forum Sponsored by the Yellow Creek Watershed Storm Water Management Consortium

**When:** Wednesday February 11, 2004  
6:30-8:00 PM

**Where:** Bath Township Offices  
Trustees Meeting Room  
3864 West Bath Road  
Bath, OH 44210

A public forum will be held on Wednesday February 11 at 6:30 PM to inform members of the community about the Yellow Creek Watershed Action Plan, and to solicit comments regarding the implementation of improved strategies for managing storm water in the Yellow Creek Watershed.

The Action Plan promulgates the principles of the Yellow Creek Watershed Storm Water Management Consortium. The Plan includes nine goals, various objectives for each goal, and numerous actions corresponding to each objective. The Action Plan is the culmination of the Consortium's efforts and serves as a referential guide for future watershed protection and remediation activities.

The Yellow Creek Watershed Storm Water Management Consortium is supported by a Lake Erie Protection Fund Grant, and is made up of community officials and local stakeholders. The intent of the Consortium is to build consensus and to foster cooperation between the political jurisdictions that make up the Yellow Creek Watershed with regard to improved strategies for storm water management.

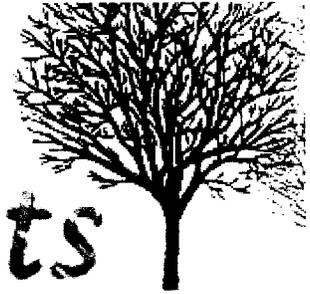
This project is being coordinated by the Northeast Ohio Four County Regional Planning and Development Organization (NEFCO), a regional council of governments created by the elected officials within Portage, Stark, Summit and Wayne Counties. NEFCO is a voluntary organization that enables local officials to discuss problems facing the region and to develop strategies to cope with them.

Please contact Nick Lautzenheiser at 330.252.0337 if you plan on attending this public forum to ensure adequate seating.

Back



# Winter Events

**NOTE:**

Summit County provides this information as a public service. Events and times are subject to change. All events and times were accurate at the time of publication.

## February 2004 Events

<u>Date</u>	<u>Event</u>	<u>Place</u>	<u>Time</u>
1	The Mystery of Irma Vep	Weathervane Playhouse	Cal
1	The Diary of Anne Frank	Magical Theatre Company	Cal
1	Smokey Joe's Cafe	Carousel Dinner Theatre	Cal
1	Antique Valentines on Display	Hower House	Cal
2	Summit Co. Cncl. Cmt. Mtng.	7th Floor, Ohio Building	4:3
3-7	Jim Dine Prints	Akron Art Museum	Cal
3-8	Smokey Joe's Cafe	Carousel Dinner Theatre	Cal
3	Tuesday Musical Club	E. J. Thomas Hall	Cal
4-8	Antique Valentines on Display	Hower House	Cal
5-8	Personals	Actors Summit-Hudson	Cal
6,7	Farmhouse Suppers	Hale Farm & Village	Cal
6	Family of Composers-Cavani String Quartet	Stan Hywet Hall & Gardens	Cal
6	Ohio Ballet	E. J. Thomas Hall	Cal
7	Ohio Ballet	E. J. Thomas Hall	Cal
9	Summit County Council Mtng.	7th Floor, Ohio Building	6pr
10-14	Jim Dine Prints	Akron Art Museum	Cal
10-15	Smokey Joe's Cafe	Carousel Dinner Theatre	Cal
11-15	Antique Valentines on Display	Hower House	Cal
11	Yellow Creek Watershed Plan Public Hearing	Bath Township Offices	6:3
12-15	Personals	Actors Summit-Hudson	Cal
12-15	ART by Yasmina Reza	Coach House Theatre	Cal
12	Cuyahoga Valley Contra Dance	Boston Twp. School House	7pr
13,14	Farmhouse Suppers	Hale Farm & Village	Cal
13	Distinguished Speakers Series	Happy Days Center-CVNP	7:3
14	Jim Mismas & Friends	Stan Hywet Hall & Gardens	Cal
17-21	Jim Dine Prints	Akron Art Museum	Cal
17-22	Smokey Joe's Cafe	Carousel Dinner Theatre	Cal
18-22	Antique Valentines on Display	Hower House	Cal
19-22	Personals	Actors Summit-Hudson	Cal
19-22	ART by Yasmina Reza	Coach House Theatre	Cal
20-22	Summit Indoor Motorcross	Summit County Fairgrounds	Cal
20,21	Farmhouse Suppers	Hale Farm & Village	Cal
20	Extravaganza 2004-Boys&Girls Clubs Auction	Greek Community Church	Cal
21	Akron Symphony Orchestra	E. J. Thomas Hall	Cal
23	Summit Co. Cncl. Cmt. Mtng.	7th Floor, Ohio Building	4:3
24-28	Jim Dine Prints	Akron Art Museum	Cal
26-28	ART by Yasmina Reza	Coach House Theatre	Cal
26	Cuyahoga Valley Contra Dance	Boston Twp. School House	7pr
27,29	Akron/Canton Home & Flower Show	John S. Knight Center	Cal
27,28	57th Annual SPEBSQSA Harmony Show	Akron Civic Theatre	Cal

## Area news

BATH — A public forum has been scheduled on Feb. 11 from 6:30 to 8:30 p.m. to inform members of the community about the **Yellow Creek Watershed Action Plan** and to solicit comments regarding the implementation of improved strategies for managing storm water in the Yellow Creek Watershed. The public forum will take place in the Trustees Meeting Room at the Bath Township Offices, 3864 W. Bath Road. To ensure adequate seating, those planning to attend are asked to contact Nick Lautzenheiser at (330) 252-0337.



# GRANGER TOWNSHIP

Medina, Ohio, USA  
Established 1820



www.ohio.gov

We welcome you to our site and hope you find the information interesting and helpful. We are updating it monthly shortly after the Regular Township Meeting. Please let us hear from you with your questions, comments, or improvements you would like to see us make. We invite you to attend our Regular Township Meeting held at 7:30 PM on the second Monday and a Work Session Meeting at 4:00 PM on the fourth Monday; both at the Twp. Administration Building.

- administration
- general info
- zoning
- fire & rescue
- cemeteries
- roads
- parks

### NEWS BULLETINS:

- Zoning Amend. eff. 1/8/04
- Trustee Chp. for 2004
- Salt Shed Nearing Completion
- New Fire Station Update
- Road Levy on March Ballot
- Yellow Creek Public Forum.
- Sr.Citizen Update

Meetings		
Jan. 1	Happy New Year	
Jan. 6	Zoning Com.	7:30
Jan. 12	Trustee's Reg. Meeting	7:30
Jan. 26	Trustee's Work Session	3:00
Jan. 27	NO Appeals Board	
Feb. 3	Zoning Com.	7:30
Feb. 9	Trustee's Reg. Meeting	7:30
Feb. 23	Trustee's Work Session	4:00
Feb. 24	Appeals Board	7:30
Mar. 2	Zoning Com.	7:30
Mar. 8	Trustee's Reg. Meeting	7:30
Mar. 29	Trustee's Work Session	4:00
Mar. 30	Appeals Board	7:30
Apr. 6	Zoning Com.	7:30
Apr. 12	Trustee's Reg. Meeting	7:30

You may contact the township via e-mail  
(grangertwp@grangertwp.org)  
or 3717 Ridge Rd., Medina, OH 44256  
330/239-3611 FAX: 239-9921

Granger Township is a member of the Medina County Ohio Township Associations.

Although this web site is the official site for Granger Township, it is for informational purposes only, and is not the "official record" of Granger Township.

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### **Yellow Creek Watershed Public Forum**

A Public Forum will be held on Wednesday, February 11, 6:30 PM at the Bath Township Offices Trustees Meeting Room to inform members of the community about the Yellow Creek Watershed Action Plan, and to solicit comments regarding the implementation of improved strategies for managing storm water in the Yellow Creek Watershed. The hearing is being sponsored by the Northeast Ohio Four County Regional Planning and Development Organization (NEFCO) and the Yellow Creek Storm Water Management Consortium. A portion of Granger Township lies within the Yellow Creek Watershed.

Bath Township Offices are located at 3864 West Bath Road in Bath, Ohio.

The Action Plan includes goals, objectives, and actions for future protection of the Yellow Creek Watershed.

3864 W. Bath Rd  
P.O. Box 1188 Bath,  
Ohio 44210-1108

# BATH TOWNSHIP

Telephone: (330)666-  
4007 Fax:  
(330) 666-0305

*SUMMIT COUNTY, OHIO*

Community  
Information

## **Oil & Gas Drilling Issues**

Fire  
Department

January Calendar

Bath Township Opposes House Bill 278 that will effectively repeal all statutory authority of local governments to regulate oil & gas exploration and operations.

Police  
Department

Township  
Quarterly

**[Click Here for More Information](#)**

Parks

Board of Trustee  
Meeting  
Schedule

## **Summit County Health Department is proposing a Septic Inspection Program**

Zoning

Solid Waste

**[Click Here for More Information](#)**

Trustee Meeting  
Agenda

## **Yellow Creek Watershed Storm Water Management Consortium is holding a Public Forum at Bath.**

Lifeline Services

**[Click Here for More Information](#)**

Living Tree

Directory of  
related links

The purpose of this web presence is to provide an additional avenue for the Township's residents but also to learn more about Bath Township and the many services it has to offer.

Each of the Township's departments has a section of this site on which they will present information about their services and operations. You may access each one of them by clicking the appropriate link listed to the right.

Please check back often to review any updates and to learn more about your local government.

If there is something that you would like to see Bath Township publish on this web site, please contact us, either by telephone at (330) 666-4007, or by sending an e-mail to any of the below individuals

*Trustee James N. Nelson*  
President, Board of Trustees

*Trustee Elaina E. Goodrich*  
Vice-President Board of Trustees

# PUBLIC FORUM NOTICE

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6:30-8:00 PM

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Please contact Nick Lautzenheiser at 330.252.0337 if you plan on attending this public forum to ensure adequate seating.

# Fairlawn

OHIO

a great place to live

- our city
- our history
- our schools
- city council
- city departments
- city safety
- meetings & events
- map
- the stats
- codified ordinances
- legislation & meeting minutes



**02/11/04 - Public Forum Notice for the Yellow Creek Watershed**

When: Wednesday, February 11, 2004 6:30-8:00 PM [more»](#)

**Flood Information**

**City of Fairlawn**  
3487 S. Smith Road  
Fairlawn, Ohio 44333  
(330) 668-9500

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## Special Notices

### Public Forum Notice for the Yellow Creek Watershed

Yellow Creek Watershed Action Plan

When: Wednesday, February 11, 2004 6:30-8:00 PM  
 Where: Bath Township Offices, Trustees Meeting Room 3864 West Bath Road, Bath, Ohio 44210

[Click here to download 2nd PUBLIC MEETING NOTICE](#)

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# **the yellow creek consortium**

a watershed-based approach to storm water management

## **MEETING AGENDA**

**Wednesday, February 11, 2004**

**6:30 – 8:00 PM**

Bath Township Offices: Trustees Meeting Room

- I. Welcome**  
-Nick Lautzenheiser, NEFCO
- II. Background of Yellow Creek Watershed Activities**  
-Claude Custer, NEFCO
- III. Action Plan Summary**  
-Nick Lautzenheiser, NEFCO
- IV. Conclusions/Future Goals**  
-Claude Custer, NEFCO
- V. Summit County Phase II Program – Future Watershed Involvement**  
-Jay Mosley, Summit County Drainage Engineer
- VI. Questions/Comments/Suggestions**
- VII. Thank You**

Yellow Creek Watershed Storm Water Management Consortium Public Meeting - February 11, 2004

#	Name	Organization/Address	Phone #	Email
1	NICK KOSTANDARAS	NEFCO	530 657 9805	
2	GILBERT LORENZO	owner	330-665-2980	lorenzog@adelphia.net
3	Ann Maggzeni			
4	Arthur B. Maggzeni			
5	Roger Brain	3420 Yellow Creek Rd Akron, OH 44333	330-666-1968	
6	JOHN TARGETT	550 CRYSTAL LAKE ROAD	666-6219	jbrtcar@aol.com
7	Bob Heuback	3477 Home owners	666-0880	R.Heuback@adelphia.net
8	JIM WHITE	CONGRESS RIVER RAP	266-241-2414	WHITE@CONGRESSRIVERRAP.ORG
9	Jay Mosley	Summit Co. Engineer	530-693-8375	jmosley@engineer-co.summit.oh.us
10	Dale Nader	resident	330-869-0380	dnader@fin-ed.org
11	Sr. Patricia Sigler	Sisters of St. Dominic	330-836-9908	sigler@akronsp.org
12	Priscilla Steiner	3675 So Milan Rd	330-664-8389	steiner@akronsp.org
13	Edie Chase	5731 Calvary Road, Kent	330-673-1787	
14	Peggy Reid	City of Akron Planning		
15	Kelvin Rogers	Ohio EPA - NEDO		
16	Don Jenkins			
17				
18				
19				
20				

**Yellow Creek Watershed Storm Water Management Consortium**  
Public Meeting February 11, 2004

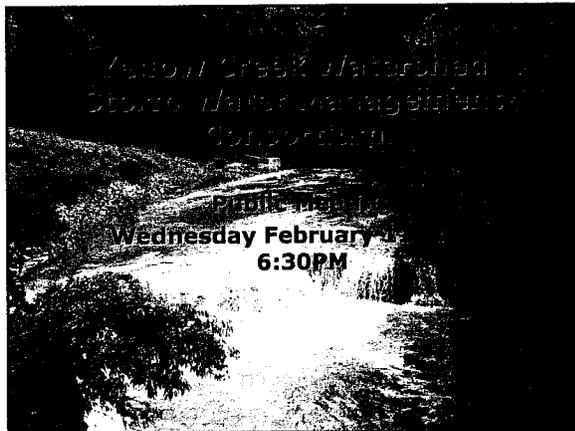
Please use this sheet to provide any individual comments or suggestions you may have regarding the efforts of the Yellow Creek Watershed Storm Water Management Consortium.

Also, indicate whether you would or would not be interested in being involved with a future Yellow Creek Watershed group.

Comments may be handed in at the end of the public meeting or can be sent to our office.

NEFCO  
180 East South Street  
Akron, OH 44311  
Phone: 330.252.0337  
Fax: 330.252.0664  
Email: [nlautzenheiser@nfcoplanning.org](mailto:nlautzenheiser@nfcoplanning.org)

Comments:

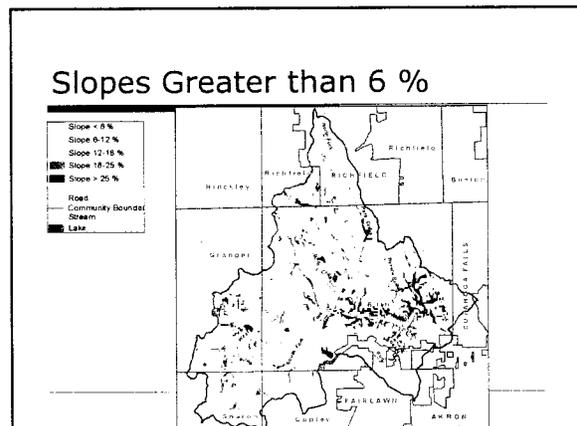
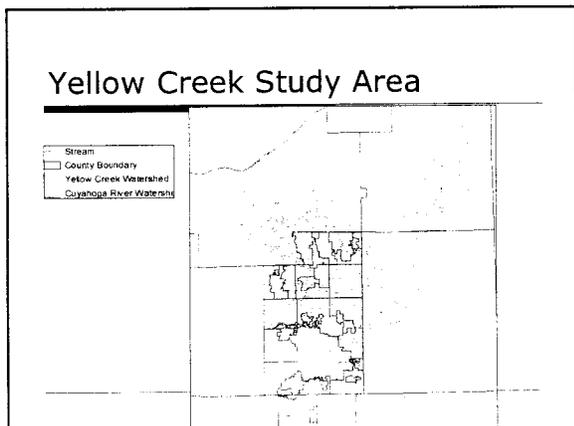


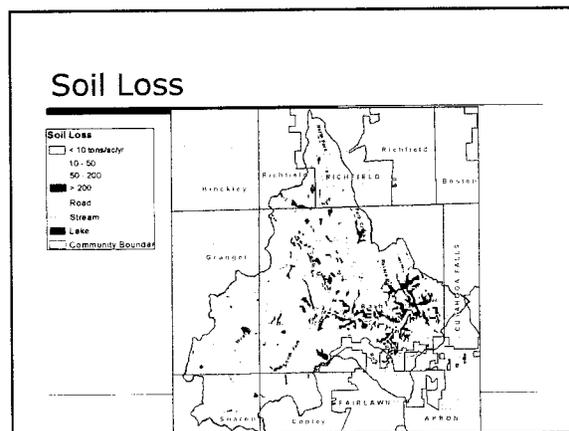
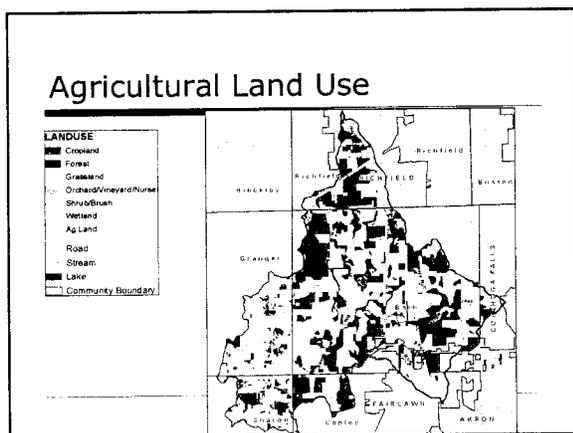
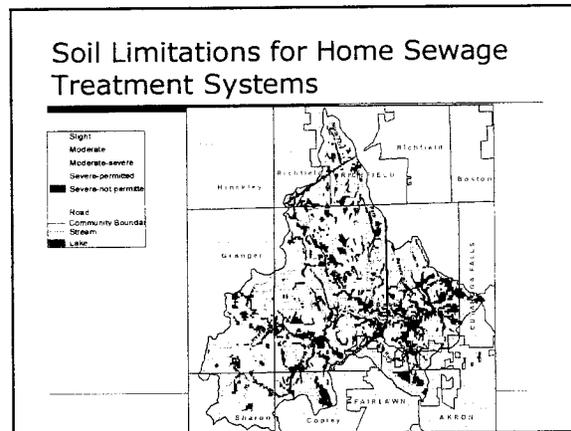
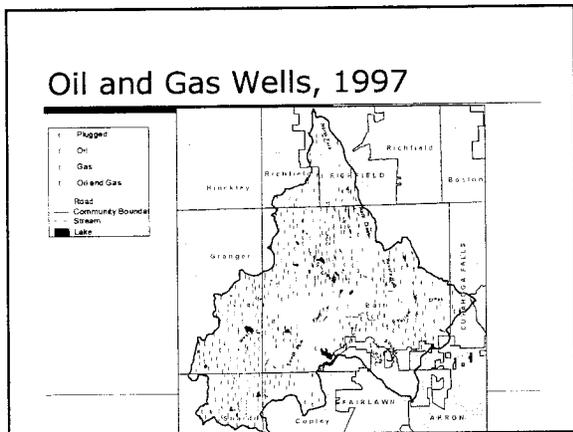
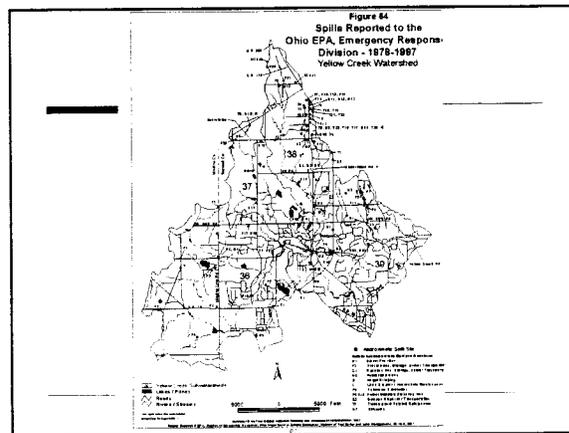
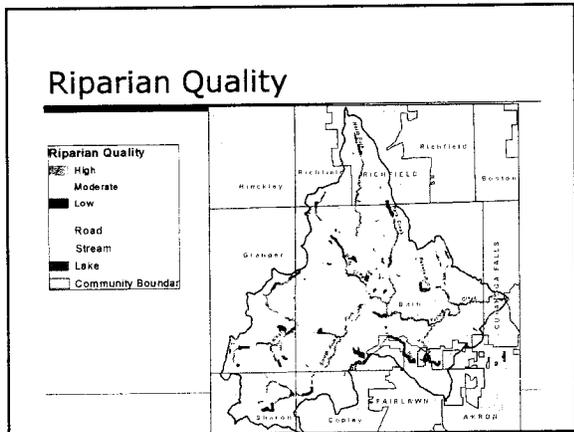
### Meeting Topics

- Discuss the Action Plan
- Discuss the formation of a future watershed consortium for the Yellow Creek
- Other goals, questions, comments

### Background of Project

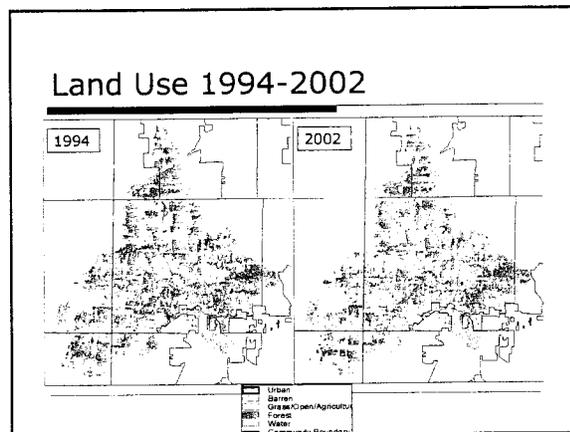
- One of only two remaining high water quality tributaries of the Cuyahoga River
- Yellow Creek classified as "rapidly growing watershed" by the EPA
- Greatest threats to watershed
  - Impervious surface increases (near the 10% threshold)
  - Rapid development





Action	Coordinating Party(ies)	Possible Funding Source(s)	Expected Improvement(s)	Evaluation
<b>Goal 2: Decrease level of toxic substances entering surface and/or ground water</b>				
<b>Objective 2.1: Decrease levels of toxic substances from industrial land use areas</b>				
<b>Priority Areas: Subwatershed 38; especially the trucking areas near North Fork</b>				
a. Identify sources of industrial hazardous waste produced within the watershed	<input type="checkbox"/> Ohio EPA <input type="checkbox"/> State/Local Health Depts. <input type="checkbox"/> Private Sector	<input type="checkbox"/> NatureWorks <input type="checkbox"/> NPS Education Grant <input type="checkbox"/> NPS Program (ODNR) <input type="checkbox"/> DEEF	Lower releases of toxic substances from industrial operations	A listing of industrial sources and names and numbers of owners/operators
b. Educate owners/operators about hazards of negligent management of such substances	<input type="checkbox"/> NEFCO <input type="checkbox"/> Cuyahoga RAP	<input type="checkbox"/> CWA Section 319 NPS <input type="checkbox"/> Lake Erie Prot. Fund <input type="checkbox"/> Great Lakes Prot. Fund		Owners/operators educated about the hazards of negligent management
c. Educate owners/operators of industrial facilities about the benefits of implementing preventative BMPs	<input type="checkbox"/> Local Governments <input type="checkbox"/> Ohio EPA <input type="checkbox"/> NEFCO <input type="checkbox"/> Cuyahoga RAP	<input type="checkbox"/> NatureWorks <input type="checkbox"/> NPS Education Grant <input type="checkbox"/> NPS Program (ODNR) <input type="checkbox"/> DEEF <input type="checkbox"/> CWA Section 319 NPS <input type="checkbox"/> Lake Erie Prot. Fund <input type="checkbox"/> Great Lakes Prot. Fund	Increased awareness about the benefits of BMPs and reduced levels of pollutants from industrial land use areas	List of contacts and number of operators that have implemented BMPs to reduce pollutants

Action	Coordinating Party(ies)	Possible Funding Source(s)	Expected Improvement(s)	Evaluation
<b>Goal 2: Decrease level of toxic substances entering surface and/or ground water</b>				
<b>Objective 2.2: Decrease levels of toxic substances from storm water runoff</b>				
<b>Priority Areas: Subwatershed 38</b>				
a. Implement a regional/watershed-based storm water management plan	<input type="checkbox"/> ODNR/DSWC <input type="checkbox"/> County SWCDs <input type="checkbox"/> County Engineer <input type="checkbox"/> NEFCO	<input type="checkbox"/> DEQIP <input type="checkbox"/> NatureWorks <input type="checkbox"/> NPS Program (ODNR) <input type="checkbox"/> DWPCFL <input type="checkbox"/> DPL-566 <input type="checkbox"/> CWA Section 319 <input type="checkbox"/> Storm water utility <input type="checkbox"/> Lake Erie Prot. Fund <input type="checkbox"/> Great Lakes Pro. Fund	Improved water quality and moderated peak storm water flows	Completion of the plan and level of participation
b. Implement NPDES Phase II Storm Water Program	<input type="checkbox"/> Local Governments	<input type="checkbox"/> DWPCFL <input type="checkbox"/> Storm water utility	Improved water quality and moderated peak storm water flows	Successful implementation of program
c. Implement preventative measures to reduce storm water runoff	<input type="checkbox"/> Health Depts. <input type="checkbox"/> SWCDs <input type="checkbox"/> NEFCO <input type="checkbox"/> Cuyahoga RAP <input type="checkbox"/> Solid Waste District <input type="checkbox"/> Ping/Zng Bds.	<input type="checkbox"/> NatureWorks <input type="checkbox"/> NPS Education Grant <input type="checkbox"/> NPS Program (ODNR) <input type="checkbox"/> DEEF <input type="checkbox"/> DWPCFL <input type="checkbox"/> CWA Section 319 <input type="checkbox"/> DEFP	Lower levels of toxic substances entering the environment from storm water runoff	<input type="checkbox"/> Educ efforts <input type="checkbox"/> Storm drain stenciling prog. <input type="checkbox"/> Permits/ordinances in effect <input type="checkbox"/> E of drop-off facilities

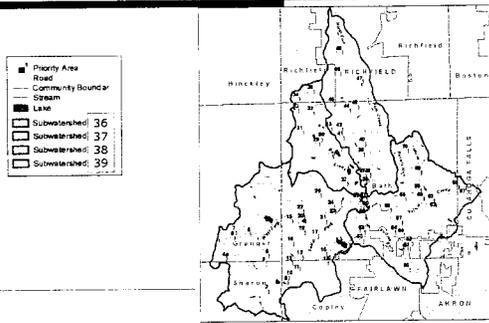


- Initial Project Goals**
- Comprehensive Watershed Management Plan
  - Create Storm Water Management Consortium - Technical Advisory Committee (TAC)
  - Action Plan
    - Identify priority areas
    - List potential solutions, funding sources

- Future Project Goals**
- Formation of permanent watershed group/consortium
  - Endorsement of Action Plan
  - Support for a future consortium from all nine communities
  - Implementation of Action Plan activities
  - Procure funding for future projects

- Yellow Creek Action Plan**
- Goals
  - Objectives
  - Actions
    - Stakeholders
    - Possible coordinating agencies
    - Potential funding sources
    - Expected improvements
    - Evaluation indices
  - 70 Priority Areas

## Priority Areas



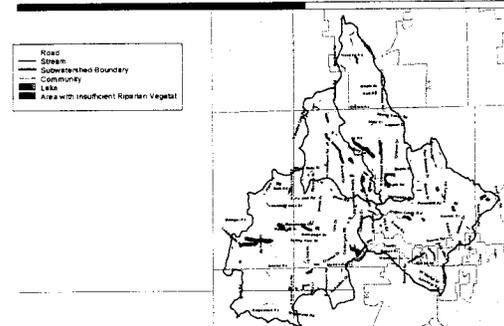
## Goals

- 9 Overall Goals
- Goals generated at previous consortium meetings
- Each goal consists of a series of objectives that could attain each goal
- Each objective consists of various activities that could be implemented or performed to satisfy each objective

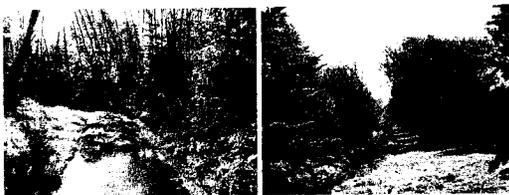
## Goal 1: Riparian Corridor Preservation/Restoration

- Educate homeowners to avoid mowing directly to stream bank
- Restore stream channel
- Plant additional riparian vegetation

## Areas Lacking Sufficient Riparian Vegetation



## Good Riparian Areas



## Poor Riparian Areas/Erosion



### Poor Riparian Areas



### Goal 2: Educate Watershed Stakeholders about BMPs

- Comprehensive educational program emphasizing storm water management BMPs
- Maintain vegetated roadside drainage ditches
- Educate about the impacts storm water volume, velocity, and flooding

### Roadside Drainage Ditch



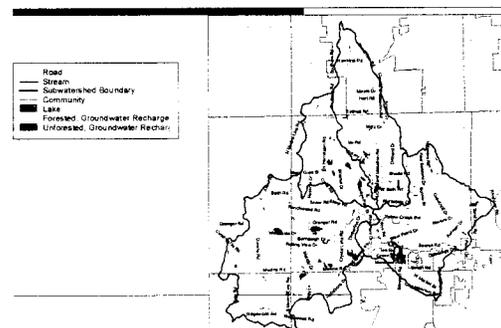
### Flooding and Erosion



### Goal 3: Maintain/Protect Groundwater Recharge Areas

- Protect forested areas of potential groundwater recharge
- Restore unforested areas of potential groundwater recharge

### Potential Groundwater Recharge Areas

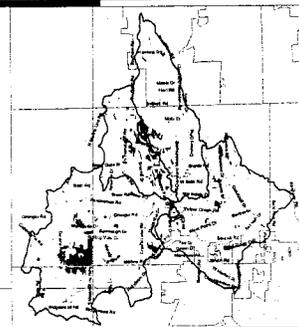


### Goal 4: Recognize/Address Areas with Highly Erodible Soils

- Preserve forested areas that have highly erodible soils
- Restore unforested areas that have highly erodible soils

### Highly Erodible Soils

- Road
- Stream
- Subwatershed Boundary
- Community
- Lake
- Forested Erodible
- Unforested Erodible

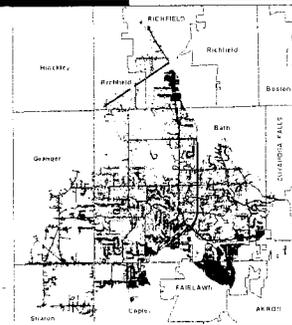


### Goal 5: Reduce Imperviousness

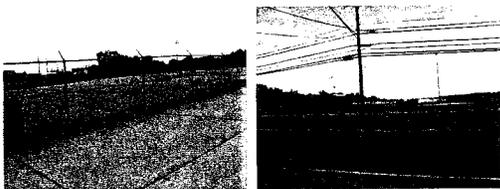
- Reduce parking lot size (retrofit existing)
- Break up large expanses of impervious surfaces
- Promote/encourage permeable driveway surfaces (porous pavers)
- Reduce street widths and cul-de-sac radii

### Impervious Surfaces - 2000

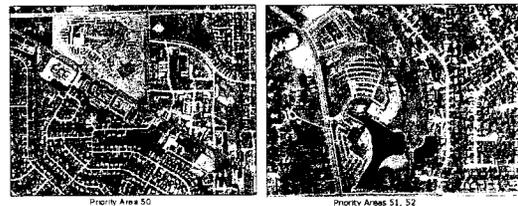
- Community Boundary
- Subwatershed Boundary
- Stream
- Lake/Pond
- Impervious Surface



### Impervious Surfaces



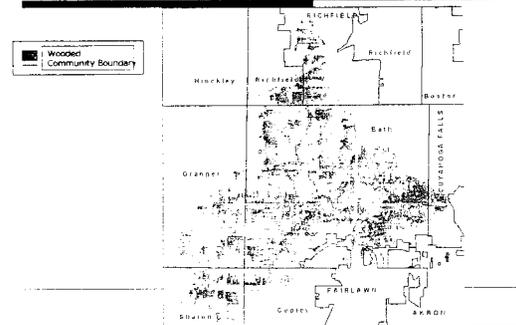
### Impervious Surfaces



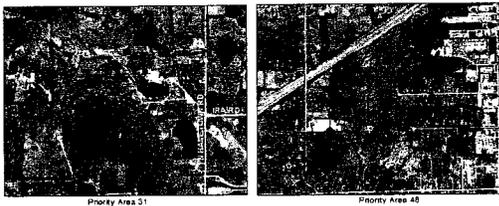
### Goal 6: Protect Current Forested Areas

- Hire watershed/community forester to oversee a comprehensive forest resource management program
- Preserve current forested areas within watershed

### Forested Areas - 2002



### Forested Areas



### Goal 7: Adopt Conservation Development Practices

- Encourage cluster development and open space preservation
- Minimize amount of disturbed area with new development and construction projects
- Practice "phasing" on large construction projects

### Goal 8: Increase Stakeholder Awareness, Participation, Cooperation

- Foster greater communication and participation among all stakeholders regarding watershed issues

### Goal 9: Establish Storm Water Utility as Funding Mechanism

- Establish storm water utility tax based on percent impervious cover
- Create storm water utility tax based on land use category

## Future Consortium

- Funding
  - Grant monies
- Public support
  - Strong citizen component
- Community support
  - Community representation/input

## Future Consortium

- Acknowledgment from communities as viable entity
- Increased likelihood of procuring funding for projects
- Forum for discourse and for addressing storm water management, preservation, restoration, and other watershed issues

## Summit County Phase II

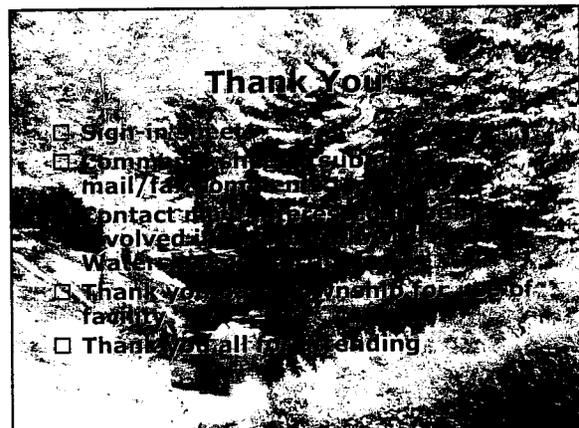
- Future involvement with watershed
- Watershed group

## Questions

- Questions on Action Plan?
- Questions on future watershed consortium?

## Comments/Suggestions

- Other possible goals
- Other problem areas
- Limitations of Action Plan
  - Implementation obstacles?
  - Feasibility of activities?
- Comments on future consortium
  - Interest?
  - Viability of group?
- Other comments/questions/suggestions



## **APPENDIX C**

### **Principles for Watershed-Wide Consensus**

## **Principle:**

**The public should be engaged in the issues involving storm water and watershed protection.**

### **Administration**

County Engineer  
Soil and Water Conservation District  
City Engineer

### **Development Assistance**

Numerous model regulations exist including the Ohio Administrative Code Section XXXX.XXX. Other sources for model regulations include the Northeast Ohio Area-wide Coordinating Agency, and the Center for Watershed Protection.

### **NPDES Phase II Requirement**

Yes

### **Suggested Coordinating Party(ies)**

Soil and Water Conservation District  
County Engineer  
NEFCO

### **Possible Funding Source**

Permit fees

### **Time Frame**

Must be completed by March 10, 2006

### **Benefits**

Reduced sediment loading to stream

### **Measurement of Success**

Regulations adopted by municipal or county board.

## **Principle:**

**An organized monitoring effort should be initiated to gather important data on current watershed conditions**

### **Administration**

County Engineer  
Soil and Water Conservation District  
City Engineer

### **Development Assistance**

Numerous model regulations exist including the Ohio Administrative Code Section XXXX.XXX. Other sources for model regulations include the Northeast Ohio Area-wide Coordinating Agency, and the Center for Watershed Protection.

### **NPDES Phase II Requirement**

Yes

### **Suggested Coordinating Party(ies)**

Soil and Water Conservation District  
County Engineer  
NEFCO

### **Possible Funding Source**

Permit fees

### **Time Frame**

Must be completed by March 10, 2006

### **Benefits**

Reduced sediment loading to stream

### **Measurement of Success**

Regulations adopted by municipal or county board.

## **Principle:**

### **Storm water treatment criteria should be developed that minimize water quality impacts of new development**

When storm water is produced on a developed landscape, the potential for increased pollutant loading exists. The creation of increased amounts of impervious surfaces increase the speed at which these pollutants reach Yellow Creek. Storm water pollution may include numerous pollutant types including metals, organic material, toxic chemicals, nutrients, sediment, and salt. This pollution reduces water quality and can have significant impacts on the aquatic community.

Ohio Revised Code authorizes municipalities and counties to runoff control criteria. At a minimum these standards should:

1. Require that

Additional criteria should be adopted according to the needs of each individual political jurisdiction.

#### **Development Assistance**

Numerous model regulations exist including the Ohio Administrative Code Section XXXX.XXX. Other sources for model regulations include the Northeast Ohio Area-wide Coordinating Agency, and the Center for Watershed Protection.

#### **NPDES Phase II Requirement**

Yes

#### **Suggested Coordinating Party(ies)**

Soil and Water Conservation District  
County Engineer  
NEFCO

#### **Possible Funding Source**

#### **Time Frame**

Must be completed by March 10, 2006

#### **Benefits**

Reduced sediment loading to stream

#### **Measurement of Success**

Regulations adopted by municipal or county board.

## **Principle:**

### **Formal sediment and erosion control ordinance or standards should be adopted watershed-wide.**

While sedimentation and erosion are naturally occurring processes resulting from the forces exerted by precipitation on the land, their effects on the water resources of Yellow Creek can be exacerbated by land disturbing activity. Damage to Yellow Creek can result from bare soil on construction sites being exposed to precipitation in large quantities for substantial periods of time. The cumulative effects of this increased amount of sediment in Yellow Creek, along with the associated erosion can lead to severe stream impairment by reducing water quality and destroying aquatic habitat, and can lead to significant costs to governmental jurisdictions for repair of waterways, ditches, and removing accumulated silt from ponds and lakes.

Ohio Revised Code authorizes municipalities and counties to adopt standards for sediment and erosion control. At a minimum these standards should:

1. Require construction site operators to implement appropriate erosion and sediment control best management practices.
2. Establish procedures for site plan review which incorporate consideration of potential water quality impacts.
3. Establish procedures for receipt and consideration of information submitted by the public.
4. Establish procedures for site inspection and enforcement of control measures.

Additional criteria should be adopted according to the needs of each individual political jurisdiction.

#### **Administration**

County Engineer  
Soil and Water Conservation District  
City Engineer

#### **Development Assistance**

Numerous model regulations exist including the Ohio Administrative Code Section XXXX.XXX. Other sources for model regulations include the Northeast Ohio Area-wide Coordinating Agency, and the Center for Watershed Protection.

#### **NPDES Phase II Requirement**

Yes

#### **Suggested Coordinating Party(ies)**

Soil and Water Conservation District  
County Engineer  
NEFCO

#### **Possible Funding Source**

Permit fees

#### **Time Frame**

Must be completed by March 10, 2006

#### **Benefits**

Reduced sediment loading to stream

#### **Measurement of Success**

Regulations adopted by municipal or county board.

## **Principle:**

**The formation of a storm water utility is a viable strategy for providing fiscal support to a political jurisdiction**

### **Administration**

County Engineer  
Soil and Water Conservation District  
City Engineer

### **Development Assistance**

Numerous model regulations exist including the Ohio Administrative Code Section XXXX.XXX. Other sources for model regulations include the Northeast Ohio Area-wide Coordinating Agency, and the Center for Watershed Protection.

### **NPDES Phase II Requirement**

Yes

### **Suggested Coordinating Party(ies)**

Soil and Water Conservation District  
County Engineer  
NEFCO

### **Possible Funding Source**

Permit fees

### **Time Frame**

Must be completed by March 10, 2006

### **Benefits**

Reduced sediment loading to stream

### **Measurement of Success**

Regulations adopted by municipal or county board.

## **Principle:**

**An ordinance or standard for riparian setback should be implemented**

### **Administration**

County Engineer  
Soil and Water Conservation District  
City Engineer

### **Development Assistance**

Numerous model regulations exist including the Ohio Administrative Code Section XXXX.XXX. Other sources for model regulations include the Northeast Ohio Area-wide Coordinating Agency, and the Center for Watershed Protection.

### **NPDES Phase II Requirement**

Yes

### **Suggested Coordinating Party(ies)**

Soil and Water Conservation District  
County Engineer  
NEFCO

### **Possible Funding Source**

Permit fees

### **Time Frame**

Must be completed by March 10, 2006

### **Benefits**

Reduced sediment loading to stream

### **Measurement of Success**

Regulations adopted by municipal or county board.

## **Principle:**

**The principles of conservation development should be encouraged for new or re-development projects**

### **Administration**

County Engineer  
Soil and Water Conservation District  
City Engineer

### **Development Assistance**

Numerous model regulations exist including the Ohio Administrative Code Section XXXX.XXX. Other sources for model regulations include the Northeast Ohio Area-wide Coordinating Agency, and the Center for Watershed Protection.

### **NPDES Phase II Requirement**

Yes

### **Suggested Coordinating Party(ies)**

Soil and Water Conservation District  
County Engineer  
NEFCO

### **Possible Funding Source**

Permit fees

### **Time Frame**

Must be completed by March 10, 2006

### **Benefits**

Reduced sediment loading to stream

### **Measurement of Success**

Regulations adopted by municipal or county board.

## **Principle:**

**Innovative technology and policies should be employed where possible**

### **Administration**

County Engineer  
Soil and Water Conservation District  
City Engineer

### **Development Assistance**

Numerous model regulations exist including the Ohio Administrative Code Section XXXX.XXX. Other sources for model regulations include the Northeast Ohio Area-wide Coordinating Agency, and the Center for Watershed Protection.

### **NPDES Phase II Requirement**

Yes

### **Suggested Coordinating Party(ies)**

Soil and Water Conservation District  
County Engineer  
NEFCO

### **Possible Funding Source**

Permit fees

### **Time Frame**

Must be completed by March 10, 2006

### **Benefits**

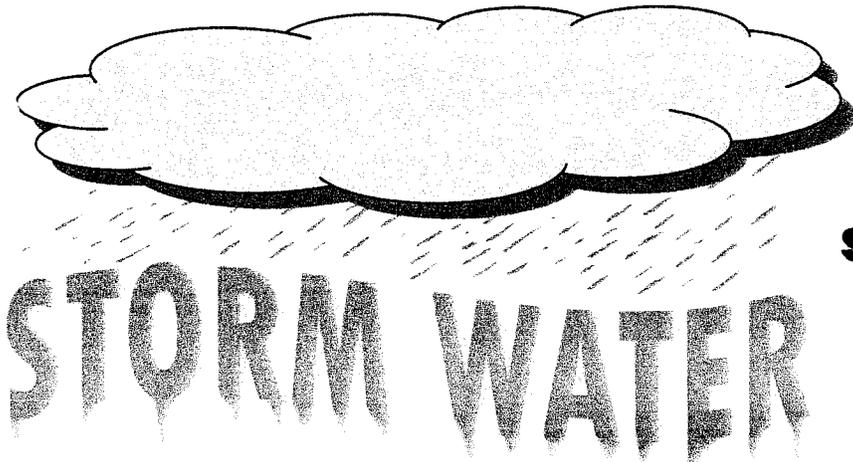
Reduced sediment loading to stream

### **Measurement of Success**

Regulations adopted by municipal or county board.

## **APPENDIX D**

### **Fact Sheets**



# **What is it?**

**Water from rain or snowmelt that falls to the ground, but is not absorbed into the ground**

**Q: Is storm water a problem?**

**A: Yes. Excessive storm water runoff can cause flooding, stream bank erosion, and can pollute surface water.**

**Q: Why does it cause these problems?**

**A: Because in many areas, much of the land is covered with hard surfaces like roads, roofs and parking lots that do not allow much rainwater to be absorbed into the ground. These are called impervious surfaces.**

**Q: How do impervious surfaces affect storm water?**

**A: By not allowing as much water to be absorbed into the ground, impervious surfaces cause more water to flow into rivers and streams. This increased volume of water is what causes flooding and stream bank erosion.**

**Q: How does storm water cause pollution?**

**A: Things like toxic materials, bacteria, fertilizer and soil are often found on or near impervious surfaces. All of these different pollutants are easily washed away when it rains. This pollution then ends up in streams with the storm water.**

**Q: Why is soil considered pollution?**

**A: It smothers aquatic habitat when it settles out of water making it difficult for organisms to live. Soil is the number one pollutant, by volume, in Ohio's surface waters. It comes from many places including farm fields, construction sites, and the erosion of stream banks.**

**Fact Sheet Produced By:**

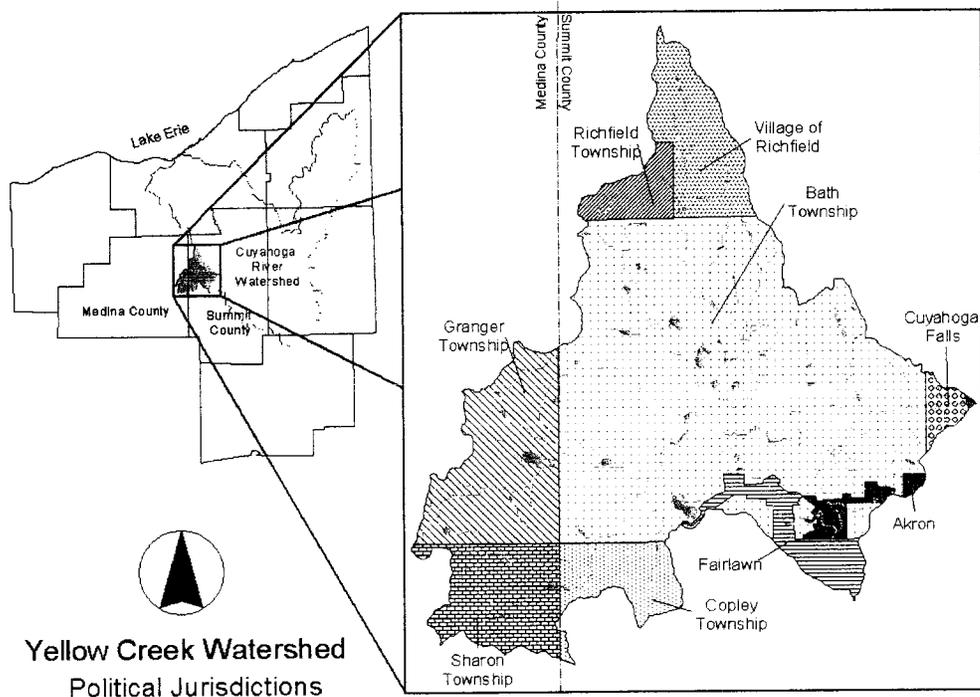
**the yellow creek consortium**  
a watershed-based approach to storm water management

**NEFCO**

Northeast Ohio Four  
County Regional Planning  
and Development  
Organization

# the yellow creek consortium

a watershed-based approach to storm water management



Yellow Creek Watershed  
Political Jurisdictions

Northeast Ohio Four County Regional Planning and Development Organization January, 2003  
Source: Ohio Department of Natural Resources

## Project Purpose:

To build consensus and to foster cooperation between the political jurisdictions that make up the Yellow Creek Watershed with regard to improved strategies for storm water management.

## Project Coordinator:

Northeast Ohio Four County Regional Planning and Development Agency

## Project Funding:

Lake Erie Protection Fund Grant

## Objectives:

- Develop a sustainable watershed consortium of local community officials and other stakeholders.
- Develop a list of storm water management principles for watershed-wide consensus.
- Create a location-specific Action Plan based upon the agreed principles.
- Expand public awareness and involvement in the efforts of the consortium.

## Benefits of Participation:

- NPDES Phase II implementation assistance
- Forum for addressing road drainage problems in an economical and environmentally friendly manner.
- Forum for communication with neighboring units of government
- Increased awareness of environmental issues that might affect the Township in the future.

## **APPENDIX E**

### **Brochure**

# Yellow Creek Watershed Riparian Landowner Manual

The Yellow Creek is one of only two remaining high water quality tributaries of the Cuyahoga River. As a riparian landowner, you have an integral role in protecting and improving streams and water quality. Because a stream exists on your property, you have a unique and special responsibility. The future health and vitality of the Yellow Creek Watershed depends largely upon the actions of its riparian landowners. The watershed can continue to have pristine waters as long as its residents continue to follow environmentally-sound practices.

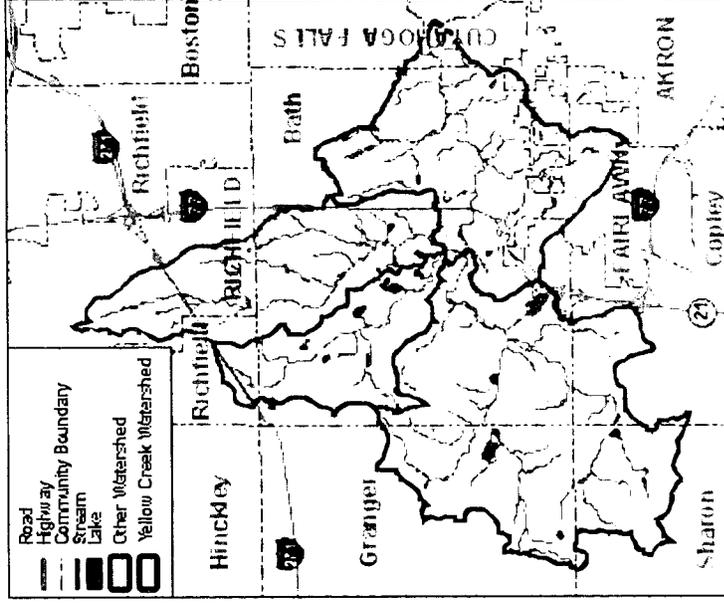
For more information about the Yellow Creek Watershed or storm water management, contact the Northeast Ohio Four County Regional Planning and Development Organization (NEFCO) at 330-252-0337.



## What Can You Do?

As a riparian landowner, there are several things you can do to improve the health of the stream on your property and, in turn, benefit the entire watershed:

- Do not mow directly to the stream bank—allow natural riparian vegetation to grow. Healthy riparian corridors stabilize stream banks and provide shade, erosion and sediment control, flood management, and wildlife habitat.
- Plant additional shrubbery and cuttings along stream banks and within riparian corridors. Landscaping operations and county Soil and Water Conservation Districts can assist you with appropriate plant selection.
- Respect riparian setbacks—do not build in or place structures within this natural buffer zone
- Do not dispose of refuse, chemicals or any other hazardous substance into the stream
- Remove trash from the stream
- Use fertilizers sparingly—excess runs off lawns into streams, causing pollution and rampant algal growth
- Do not alter the shape or course of the stream
- Maintain your septic system—regularly inspect and pump tanks



## NEFCO

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Akron, OH 44311

Phone: 330.252.0337 Fax: 330.252.0664  
Email: [nlautzenheiser@nefcoplanning.org](mailto:nlautzenheiser@nefcoplanning.org)

## NEFCO

Northeast Ohio Four County Regional  
Planning and Development Organization

Tel: 330.252.0337 Fax: 330.252.0664

## Riparian Vegetation



Riparian corridors are the areas of vegetation immediately adjacent to streams and bodies of water. Healthy riparian cover provides many benefits:

- Regulates light and temperature conditions, improving the habitat for aquatic plants and animals
- Acts as a natural “sponge” to mitigate floods
- Effectively filters and treats sediment, nutrients, and bacteria from storm water
- Stabilizes stream banks, limiting erosion and sediment deposition

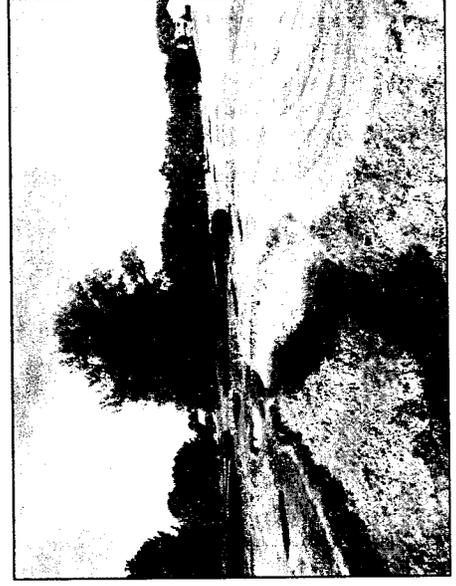


## Erosion



Erosion occurs on exposed soil, construction sites, and under-vegetated stream banks. Increased storm water runoff has higher erosive potential. Tree roots and riparian vegetation can stabilize banks and prevent erosion. Erosion can be minimized by several means:

- Do not mow directly up to the stream bank
- Maintain or plant vegetation and shrubbery along the stream bank
- Respect natural riparian setbacks—do not build or place structures in riparian zones



## Sedimentation



Sedimentation is soil deposition from urban and agricultural runoff, construction sites, and eroding stream banks. Soil and rock are transported by the stream and are deposited within the stream. Excess sediment presents several problems:

- Fills up stream channels
- Increases the likelihood and severity of future floods
- Creates an environment unsuitable for habitat



## **APPENDIX F**

### **Photo Album**



Figure 1: Development along Crystal Lake



Figure 2: Crystal Lake

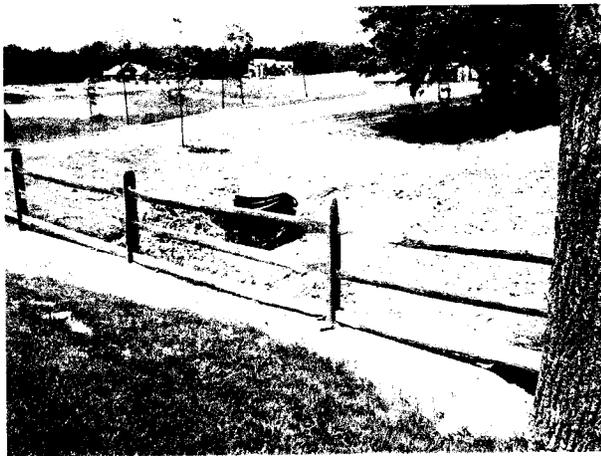


Figure 3: Construction site best management practice



Figure 4: Severe erosion along roadside drainage ditch



Figure 5: Stream has been piped and buried beneath parking lot

Figure 6: Large, vacant impervious area



Figure 7: Abandoned trucking area



Figure 8: Erosion and sedimentation occurring at construction site



Figure 9: Flood waters washed out railroad tracks and railroad bed

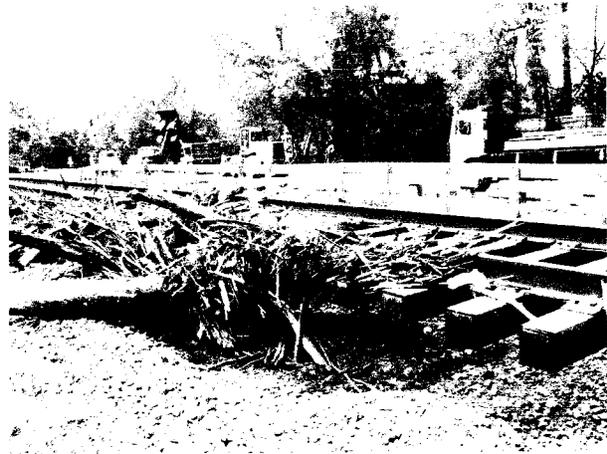


Figure 10: Flood carried limbs and other debris



Figure 11: Flood caused extensive damage to railroad and trail



Figure 12: The flood waters severely damaged many buildings located within the floodplain



Figure 13: Severe stream bank erosion and excessive sedimentation



Figure 14: Under-vegetated, steep stream bank susceptible to severe erosion



Figure 15: The Yellow Creek has many natural rapids

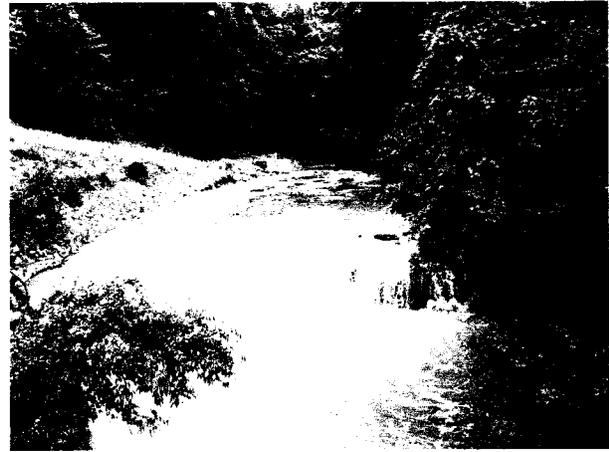


Figure 16: The Yellow Creek has a high average gradient



Figure 17: Minimal riparian vegetation has been preserved on this stream bank



Figure 18: A wetland area exists on the opposite side of the stream in Figure 17



Figure 19: A natural bend in the stream has created an erosive pool



Figure 20: Absence of riparian vegetation and mowing have hastened and exacerbated erosion



Figure 21: Sediment deposition and absence of riparian vegetation along stream bank



Figure 22: One of several widened stream segments along the West Fork

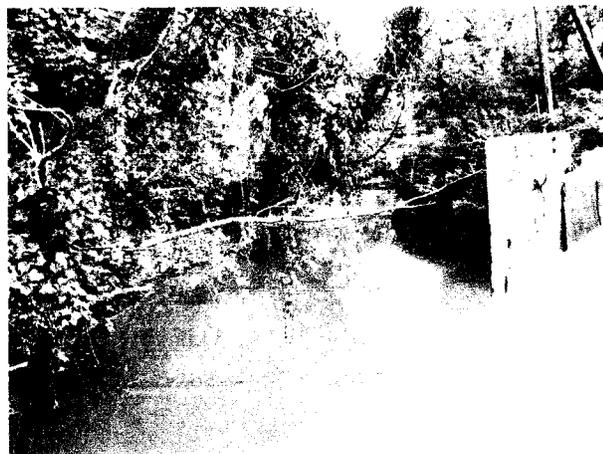


Figure 23: Adequate riparian vegetation and canopy



Figure 24: Example of severe sediment deposition within stream and along the stream bank



Figure 25: Good riparian vegetation and natural canopy but severe sedimentation



Figure 26: Another example of good riparian vegetation and canopy but significant sediment deposition



Figure 27: Sedimentation and erosion despite flourishing riparian environment and generous canopy



Figure 28: Eroding stream banks and sedimentation near Shaw Road



Figure 29: Woody debris accumulation along the Bath Creek



Figure 30: Vibrant natural environment near the Bath Creek at Ira Road



Figure 31: Storm water retention pond near subdivision along Hametown Road



Figure 32: Grassed roadside ditch drains into adjacent retention pond



Figure 33: Pond near Medina Line Road



Figure 34: Pond located in the northern part of the watershed



Figure 35: Large natural wetland area along Medina Line Road



Figure 36: Wetland remains relatively intact



Figure 37: This tributary of the West Fork has sufficient riparian vegetation on one side of the stream



Figure 38: Under-vegetated stream bank has significant erosion



Figure 39: This stream has sediment deposition and decent riparian vegetation on only one side



Figure 40: The homeowner has removed valuable riparian vegetation



Figure 41: Steep stream banks and moderate sedimentation along the Sourek Run at Berrywood Drive



Figure 42: Dense riparian vegetation along the Sourek Run



Figure 43: Large impervious, vacant area along Cleveland-Massillon Road



Figure 44: Abandoned trucking facility along Cleveland-Massillon Road

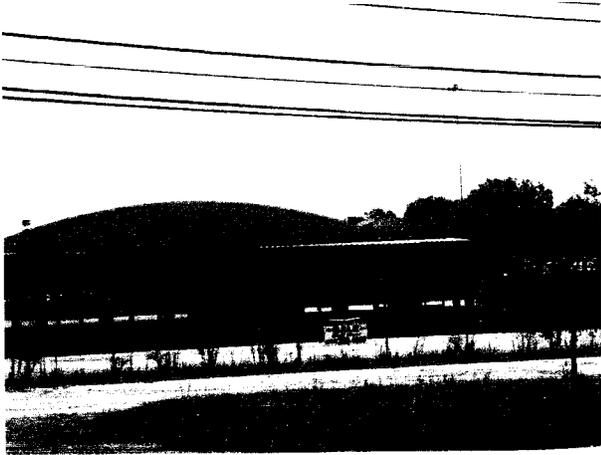


Figure 45: Vacant trucking facility along Cleveland-Massillon Road



Figure 46: Large impervious, vacant area along Cleveland-Massillon Road

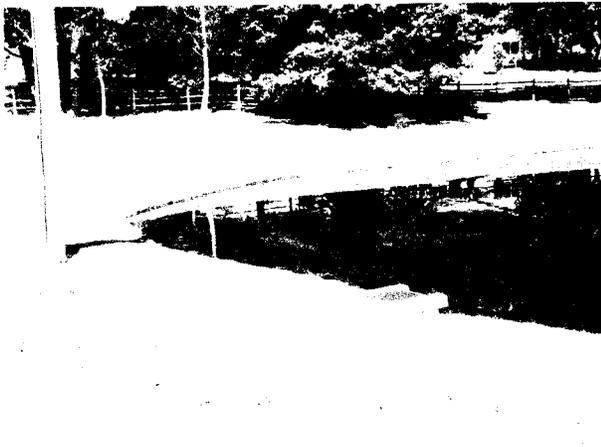


Figure 47: Retention pond located within newer subdivision along Ira Road



Figure 48: Retention pond a structural best management practice



Figure 49: Storm water wet pond located in newer subdivision along Ira Road



Figure 50: Roadside drainage ditch along Ira Road



Figure 51: Wet pond near Revere Road



Figure 52: Wet pond serves newer residential area



Figure 53: Eroding stream banks have exposed tree roots



Figure 54: Significant stream bank erosion and sediment deposition along Bath Road



Figure 55: Severely eroded stream bank



Figure 56: Significant soil deposition along this segment of the Revere Run



Figure 57: Despite the sedimentation, this segment of the Revere Run has adequate riparian vegetation and canopy

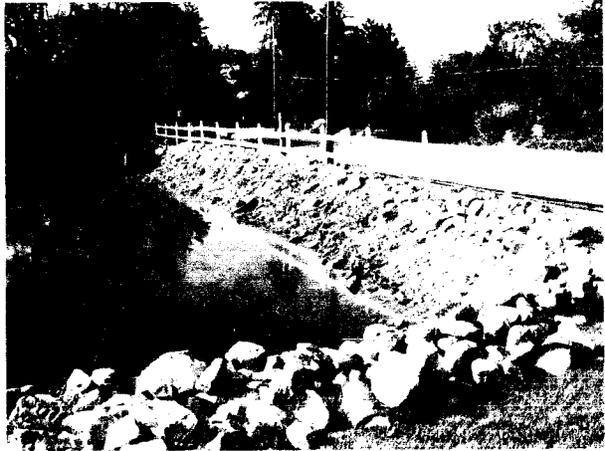


Figure 58: Storm water retention pond along Sourek Road



Figure 59: Retention pond has significant algal accumulation



Figure 60: Roadside drainage ditch along Shade Road



Figure 61: Wet pond located along Shade Road



Figure 62: This segment of Park Creek has significant sedimentation, despite the adequate riparian vegetation



Figure 63: Good canopy and riparian vegetation, but significant sedimentation

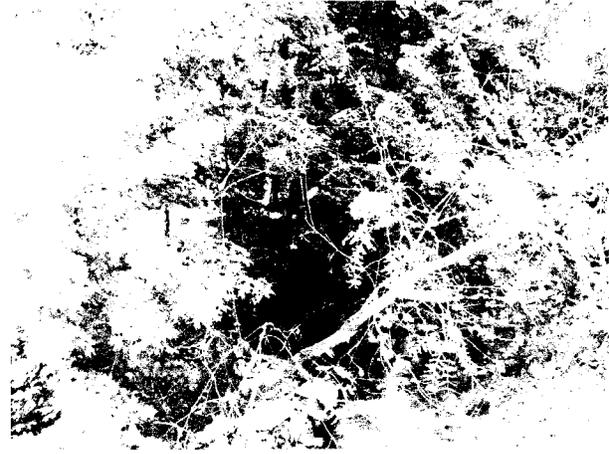


Figure 64: Sedimentation and stream bank erosion along this riparian corridor

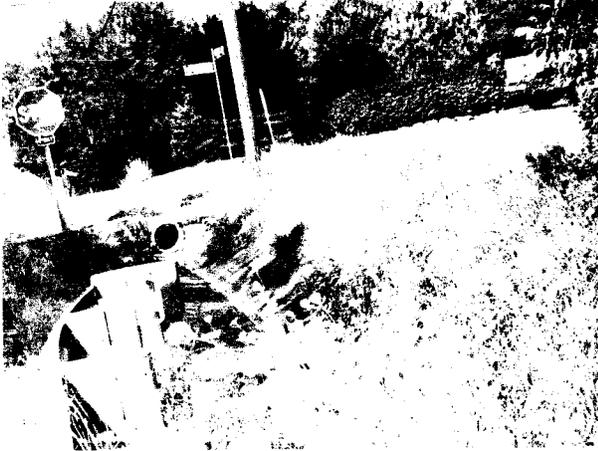


Figure 65: Concrete has replaced grass for this drainage ditch

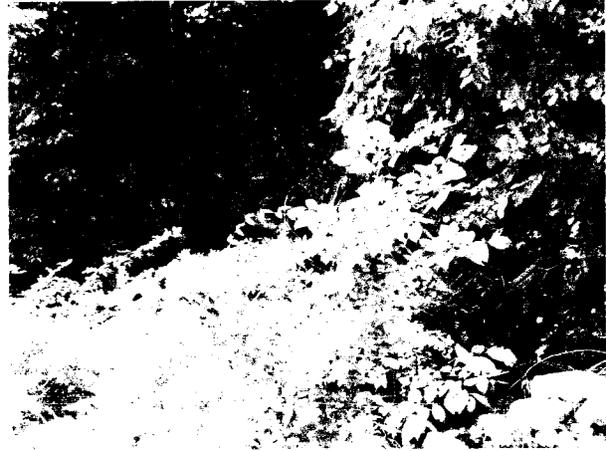


Figure 66: Significant erosion has exposed tree roots



Figure 67: Excellent riparian corridor



Figure 68: An excellent riparian environment near Sourek Road



Figure 69: This segment of the Revere Run has severe stream bank erosion and sediment deposition



Figure 70: Small waterfall along the Yellow Creek near Yellow Creek Road



Figure 71: Stone has been applied to reinforce an eroding stream bank



Figure 72: Natural riparian area has been replaced by a parking lot



Figure 73: Runoff from this parking lot drains into a vegetated swale



Figure 74: Wet pond near the large parking lot has significant algal accumulation



Figure 75: Vegetated drainage swale near parking lot



Figure 76: Private pond with significant algal buildup



Figure 77: Private pond with excessive algal growth



Figure 78: Small nursery located adjacent to West Fork tributary



Figure 79: Retention pool along Hametown Road



Figure 80: Wet pond on opposite side of road of Figure 79



Figure 81: This homeowner has kept a minimal amount of riparian vegetation along the stream bank



Figure 82: Excellent riparian environment near Hametown Road



Figure 83: Vegetated drainage ditch along Harvest Drive



Figure 84: Moderate riparian corridor near Harvest Drive



Figure 85: Vibrant riparian corridor near Harvest Drive



Figure 86: Vegetated roadside ditch drains into stream



Figure 87: Grassed roadside ditch drains to stream



Figure 88: An excellent riparian corridor beyond the newer subdivision



Figure 89: Homeowners along this portion of the West Fork have removed all of the riparian vegetation



Figure 90: Mowing and riparian vegetation removal have led to severe stream bank erosion



Figure 91: Excellent grassed roadside drainage ditch along Idlebrook Drive

## **APPENDIX G**

### **Action Plan**

**NORTHEAST OHIO FOUR COUNTY REGIONAL  
PLANNING AND DEVELOPMENT ORGANIZATION**

**YELLOW CREEK  
WATERSHED ACTION PLAN**

January 2004

The preparation of this report was financed in part through a water quality management planning grant provided through the Lake Erie Protection Fund and with matching funds provided by the Cuyahoga River Community Planning Organization (CRCPO).

## Preface

The Yellow Creek is one of only two remaining high water quality tributaries of the Cuyahoga River. The Yellow Creek Watershed is also among the fastest growing and developing subbasins of the Cuyahoga River Watershed. The development and growth of the region have created various environmental concerns. The health and vitality of the watershed are being challenged by numerous outside forces. These pressures have brought about the need for a plan of action.

The Yellow Creek Watershed Action Plan defines strategies that communities within the watershed could adopt to improve water quality and storm water management. The Plan includes nine goals and numerous objectives that, if achieved, should lead to a higher level of environmental quality and a preservation of important natural resources. The actions in the Plan are methods by which to achieve the objectives. Each action includes corresponding columns for involved stakeholders, TMDL recommendations and actions, potential funding sources, expected results, and evaluation indices. The Action Plan prescribes alternative options of varying expense and complexity.

The Action Plan provides a framework for future protection and remediation activities. The Plan promulgates the principles endorsed by the Yellow Creek Watershed Storm Water Management Consortium. The Plan advocates goals consistent with those of the Clean Water Act, the National Pollutant Discharge Elimination System (NPDES) Phase II regulations, the Section 319 program, and the Lower Cuyahoga River Watershed Total Maximum Daily Load (TMDL).

The Action Plan targets specific locations within the watershed. The highlighted priority areas represent locations of prime concern in the watershed. Priority area numbers are included merely for map reference. The numbers do not denote any type of ranking or concern level.

The goal of the Action Plan is to provide for the communities and citizens a detailed and organized blueprint of strategies to improve the Yellow Creek Watershed. The Plan pinpoints specific areas of concern and defines possible remedies.

**Yellow Creek Watershed Action Plan Goals**

- Goal 1: Restore riparian corridors
- Goal 2: Educate watershed stakeholders about best management practices to protect water quality
- Goal 3: Maintain and protect potential groundwater recharge areas
- Goal 4: Recognize and address areas that have highly erodible soils
- Goal 5: Reduce imperviousness
- Goal 6: Protect current forested areas and promote additional tree planting
- Goal 7: Adopt conservation development practices
- Goal 8: Increase the understanding, awareness, participation, and cooperation among all stakeholders regarding watershed and water quality issues
- Goal 9: Establish a storm water utility for the communities within the watershed

### Sources

1. Census 2000 TIGER data, ESRI
2. Map and Geographic Information Collection (MAGIC) geospatial data, 2000
3. *Medina County Soil Survey*, 1974
4. Ohio Environmental Protection Agency, Division of Surface Water, *Total Maximum Daily Loads for the Lower Cuyahoga River*, Final Report, 2003
5. OhioView Consortium satellite data
6. Scientific Outreach and Applications using Remote Sensing (SOARS) geospatial data, 2003
7. Summit County Department of Community and Economic Development, Summit County orthophotos, 2000
8. *Summit County Soil Survey*, 1974
9. U.S. Geological Survey geospatial data
10. *Yellow Creek Watershed Action Plan*, Northeast Ohio Four County Regional Planning and Development Organization, 2001

### **Possible Funding Sources**

1. **CWSRF** - Clean Water State Revolving Fund
2. **Five-Star Grant** - National Fish and Wildlife Foundation Five Star Restoration Matching Grant
3. **GLPF** - Great Lakes Protection Fund
4. **LEPF** - Lake Erie Protection Fund
5. **Ohio EPA** - CWA Section 319 NPS
6. **PL-566**- Watershed Protection and Flood Prevention Act
7. **RCA** - Rural Community Assistance Program
8. **Tree Planting** - Ohio Bicentennial Legacy Tree Planting Initiative
9. **WAWA** - Watershed Awareness to Watershed Action Grant
10. **WPCLF** - Water Pollution Control Loan Fund
11. **WRRSP** - Wetlands and Water Resources and Restoration

Action	TMDL Action(s)/ Management Measure(s)	Stakeholder(s)	Possible Funding Source(s) (see page 4 for complete title)	Expected Improvement(s)	Evaluation
<b>Goal 1: Restore riparian corridors</b>					
<b>Objective 1.1: Educate riparian landowners to avoid mowing/landscaping directly to stream bank to allow reestablishment of natural vegetation</b>					
<b>Priority Areas:</b>					
<ul style="list-style-type: none"> <li>▪ Entire Watershed</li> </ul>					
a. Distribute brochures explaining riparian corridors, explaining their importance and the benefits of their preservation	<ul style="list-style-type: none"> <li>▪ Action #3: educational programs of the entire Lower Cuyahoga River TMDL area</li> </ul>	<ul style="list-style-type: none"> <li>▪ Riparian landowners</li> <li>▪ SWCD</li> <li>▪ NEFCO</li> <li>▪ All communities in watershed</li> </ul>	<ul style="list-style-type: none"> <li>▪ Ohio EPA</li> <li>▪ WRRSP</li> <li>▪ WPCLF</li> <li>▪ CWSRF</li> <li>▪ GLPF</li> <li>▪ LEPP</li> <li>▪ PL-566</li> <li>▪ Five-Star Grant</li> </ul>	<ul style="list-style-type: none"> <li>▪ Riparian landowners informed about the consequences and volatility of under-vegetated and exposed stream banks</li> </ul>	<ul style="list-style-type: none"> <li>▪ Number of brochures distributed</li> </ul>
b. Hold public meeting to discuss alternative methods of lawn management in riparian areas	<ul style="list-style-type: none"> <li>▪ Action #3: educational programs of the entire Lower Cuyahoga River TMDL area</li> </ul>	<ul style="list-style-type: none"> <li>▪ Riparian landowners</li> <li>▪ SWCD</li> <li>▪ NEFCO</li> <li>▪ All communities in watershed</li> </ul>	<ul style="list-style-type: none"> <li>▪ Ohio EPA</li> <li>▪ WRRSP</li> <li>▪ WPCLF</li> <li>▪ CWSRF</li> <li>▪ GLPF</li> <li>▪ PL-566</li> <li>▪ Five-Star Grant</li> </ul>	<ul style="list-style-type: none"> <li>▪ Riparian landowners informed of appropriate lawn care practices and riparian vegetation restoration</li> </ul>	<ul style="list-style-type: none"> <li>▪ Meeting attendance</li> <li>▪ Participation, comments, suggestions generated at meeting</li> </ul>
c. Organize field trip of watershed to visit examples of good and poor areas of riparian corridor management	<ul style="list-style-type: none"> <li>▪ Action #3: educational programs of the entire Lower Cuyahoga River TMDL area</li> </ul>	<ul style="list-style-type: none"> <li>▪ Riparian landowners</li> <li>▪ SWCD</li> <li>▪ NEFCO</li> <li>▪ All communities in watershed</li> </ul>	<ul style="list-style-type: none"> <li>▪ Ohio EPA</li> <li>▪ WRRSP</li> <li>▪ WPCLF</li> <li>▪ CWSRF</li> <li>▪ GLPF</li> <li>▪ LEPP</li> <li>▪ PL-566</li> <li>▪ Five-Star Grant</li> </ul>	<ul style="list-style-type: none"> <li>▪ Riparian landowners learn appropriate lawn care practices and riparian vegetation restoration</li> <li>▪ Watershed residents able to see examples of healthy and unhealthy riparian habitats</li> </ul>	<ul style="list-style-type: none"> <li>▪ Field trip attendance</li> <li>▪ Number of sites visited</li> <li>▪ Participation, comments, questions, and suggestions generated during field trip</li> </ul>
d. Create a Yellow Creek Watershed educational web site including riparian corridor information	<ul style="list-style-type: none"> <li>▪ Action #3: educational programs of the entire Lower Cuyahoga River TMDL area</li> </ul>	<ul style="list-style-type: none"> <li>▪ Riparian landowners</li> <li>▪ Watershed residents</li> <li>▪ SWCD</li> <li>▪ NEFCO</li> <li>▪ All communities in watershed</li> </ul>	<ul style="list-style-type: none"> <li>▪ Ohio EPA</li> <li>▪ WRRSP</li> <li>▪ WPCLF</li> <li>▪ CWSRF</li> <li>▪ GLPF</li> <li>▪ LEPP</li> <li>▪ PL-566</li> <li>▪ Five-Star Grant</li> </ul>	<ul style="list-style-type: none"> <li>▪ Increased understanding of riparian habitats</li> <li>▪ Riparian landowners informed of appropriate lawn care practices and riparian restoration methods</li> </ul>	<ul style="list-style-type: none"> <li>▪ Number of visits to web site</li> <li>▪ Comments, questions, suggestions, and other feedback sent to web site</li> </ul>
<b>Goal 1: Restore riparian corridors</b>					
<b>Objective 1.2: Restore Stream Channel</b>					
<b>Priority Areas:</b>					
<ul style="list-style-type: none"> <li>▪ Bath Creek, north of Everett Rd. [34]</li> <li>▪ Subwatershed 38</li> </ul>					

\* bold number in brackets, [1], indicates ID number on map

Yellow Creek Watershed Action Plan

Yellow Creek Watershed Action Plan

Action	TMDL Action(s)/ Management Measure(s)	Stakeholder(s)	Possible Funding Source(s) (see page 4 for complete title)	Expected Improvement(s)	Evaluation
<ul style="list-style-type: none"> <li>▪ West Fork, west of State Rd. [6]</li> <li>▪ West Fork tributary, west of State Rd. [7]</li> <li>▪ West Fork, east of Dunsha Rd. [8]</li> <li>▪ South Fork at Swan Lake Rd. [9]</li> <li>▪ South Fork at State Route 18 [13]</li> <li>▪ West Fork at Heatherleigh Dr. [19]</li> <li>▪ West Fork, Shaw Rd. to Crystal Lake Rd. [23] Subwatershed 37</li> <li>▪ Bath Creek, south of Bath Rd. [27]</li> <li>▪ Bath Creek, Ira Rd. south to Derrwood Dr. [30]</li> </ul>	<ul style="list-style-type: none"> <li>▪ Action #9: riparian protection of the Cuyahoga River and tributaries</li> </ul>	<ul style="list-style-type: none"> <li>▪ Riparian landowners</li> <li>▪ Affected communities</li> <li>▪ SWCD</li> </ul>	<ul style="list-style-type: none"> <li>▪ Ohio EPA</li> <li>▪ WRRSP</li> <li>▪ WPCLF</li> <li>▪ CWSRF</li> <li>▪ GLPF</li> <li>▪ LEPF</li> <li>▪ PL-566</li> <li>▪ Five-Star Grant</li> </ul>	<ul style="list-style-type: none"> <li>▪ Restoration of natural course of channelized stream</li> <li>▪ Restoration of natural wetlands adjacent to meandering stream</li> </ul>	<ul style="list-style-type: none"> <li>▪ Linear feet of restoration</li> </ul>
<ul style="list-style-type: none"> <li>b. Distribute brochures detailing what individual riparian landowners can do to restore natural stream channel</li> </ul>	<ul style="list-style-type: none"> <li>▪ Action #3: educational programs of the entire Lower Cuyahoga River TMDL area</li> </ul>	<ul style="list-style-type: none"> <li>▪ Riparian landowners</li> <li>▪ Affected communities</li> <li>▪ SWCD</li> <li>▪ NEFCO</li> </ul>	<ul style="list-style-type: none"> <li>▪ Ohio EPA</li> <li>▪ WRRSP</li> <li>▪ WPCLF</li> <li>▪ CWSRF</li> <li>▪ GLPF</li> <li>▪ LEPF</li> <li>▪ PL-566</li> <li>▪ Five-Star Grant</li> </ul>	<ul style="list-style-type: none"> <li>▪ Riparian landowners informed of ways to rehabilitate riparian corridors</li> </ul>	<ul style="list-style-type: none"> <li>▪ Number of brochures distributed</li> </ul>
<ul style="list-style-type: none"> <li>c. Encourage landowners to donate conservation easements to protect the future integrity of their land</li> </ul>	<ul style="list-style-type: none"> <li>▪ Action #9: riparian protection of the Cuyahoga River and tributaries</li> </ul>	<ul style="list-style-type: none"> <li>▪ Riparian landowners</li> <li>▪ Affected communities</li> <li>▪ Medina Summit Land Conservancy</li> <li>▪ SWCD</li> <li>▪ NEFCO</li> </ul>	<ul style="list-style-type: none"> <li>▪ Donated property ensures future protection of land from development and deforestation</li> </ul>	<ul style="list-style-type: none"> <li>▪ Total number of acres donated as conservation easement</li> </ul>	
<ul style="list-style-type: none"> <li>▪ Conduct workshop emphasizing specific methods of stream and riparian restoration</li> </ul>	<ul style="list-style-type: none"> <li>▪ Action #3: educational programs of the entire Lower Cuyahoga River</li> </ul>	<ul style="list-style-type: none"> <li>▪ Riparian landowners</li> <li>▪ Affected communities</li> <li>▪ SWCD</li> </ul>	<ul style="list-style-type: none"> <li>▪ Ohio EPA</li> <li>▪ WRRSP</li> <li>▪ WPCLF</li> <li>▪ CWSRF</li> <li>▪ GLPF</li> </ul>	<ul style="list-style-type: none"> <li>▪ Riparian landowners provided with hands-on training on restoring riparian stream corridors</li> </ul>	<ul style="list-style-type: none"> <li>▪ Workshop attendance</li> <li>▪ Comments, questions, suggestions, and other feedback generated at workshop</li> </ul>

\* bold number in brackets, [1], indicates ID number on map

Yellow Creek Watershed Action Plan

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Action	TMDL Action(s)/ Management Measure(s)	Stakeholder(s)	Possible Funding Source(s) (see page 4 for complete title)	Expected Improvement(s)	Evaluation
	TMDL area	NEFCO	<ul style="list-style-type: none"> <li>LEPF</li> <li>PL-566</li> <li>Five-Star Grant</li> </ul>		
d. Organize field trip of watershed to visit examples of good and poor areas of riparian corridor management	<ul style="list-style-type: none"> <li>Action #3: educational programs of the entire Lower Cuyahoga River TMDL area</li> </ul>	<ul style="list-style-type: none"> <li>Riparian landowners</li> <li>Affected communities</li> <li>SWCD</li> <li>NEFCO</li> </ul>	<ul style="list-style-type: none"> <li>Ohio EPA</li> <li>WRRSP</li> <li>WPCLF</li> <li>CWSRF</li> <li>GLPF</li> <li>LEPF</li> <li>PL-566</li> <li>Five-Star Grant</li> </ul>	<ul style="list-style-type: none"> <li>Field trip attendees see examples of both healthy and unhealthy riparian stream corridors</li> <li>Field trip attendees learn ways to restore riparian stream corridors</li> </ul>	<ul style="list-style-type: none"> <li>Field trip attendance</li> <li>Number of sites visited</li> <li>Comments, questions, suggestions, and other feedback generated at workshop</li> </ul>
e. Create a Yellow Creek Watershed educational web site including riparian corridor information and illustrating stream restoration projects	<ul style="list-style-type: none"> <li>Action #3: educational programs of the entire Lower Cuyahoga River TMDL area</li> </ul>	<ul style="list-style-type: none"> <li>Riparian landowners</li> <li>Watershed residents</li> <li>All communities in watershed</li> <li>SWCD</li> <li>NEFCO</li> </ul>	<ul style="list-style-type: none"> <li>Ohio EPA</li> <li>WRRSP</li> <li>WPCLF</li> <li>CWSRF</li> <li>GLPF</li> <li>LEPF</li> <li>PL-566</li> <li>Five-Star Grant</li> </ul>	<ul style="list-style-type: none"> <li>Increased understanding of the benefits, functions, and importance of riparian habitats</li> <li>Explanation and illustrations of stream restoration projects</li> </ul>	<ul style="list-style-type: none"> <li>Number of visits to web site</li> <li>Comments, questions, suggestions, and other feedback sent to web site</li> </ul>
f. Organize a stream clean-up/stream planting event	<ul style="list-style-type: none"> <li>Action #9: riparian protection of the Cuyahoga River and tributaries</li> </ul>	<ul style="list-style-type: none"> <li>Riparian landowners</li> <li>Watershed residents</li> <li>Affected communities</li> <li>SWCD</li> <li>NEFCO</li> </ul>	<ul style="list-style-type: none"> <li>Ohio EPA</li> <li>WRRSP</li> <li>WPCLF</li> <li>CWSRF</li> <li>GLPF</li> <li>LEPF</li> <li>PL-566</li> <li>Five-Star Grant</li> </ul>	<ul style="list-style-type: none"> <li>Opportunity for participants to actively contribute to restoring a stream corridor</li> <li>Illustration of how a community can work cooperatively to protect and restore a stream and benefit the entire watershed</li> </ul>	<ul style="list-style-type: none"> <li>Event attendance</li> <li>Number of plants planted</li> </ul>

Goal 1: Restore riparian corridors

Objective 1.3: Plant additional vegetation along riparian corridors

Priority Areas:

- Subwatershed 36
- West Fork, west of State Rd. [6]
- West Fork tributary, west of State Rd. [7]
- West Fork, east of Dunsha Rd. [8]
- South Fork at Swan Lake Rd. [9]
- South Fork at State Route 18 [13]
- West Fork at Heatherleigh Dr. [19]
- Bath Creek, north of Everett Rd. [34]
- Subwatershed 38
- North Fork, near Cleveland-Massillon Rd./R.B. Stout Property [38]
- North Fork tributary, west of Cleveland-Massillon Rd. [40]
- North Fork, south of Ira Rd. [41]
- North Fork, south of Hawkins Rd., east of Roberts Dr. [49]
- North Fork, confluence with Yellow Creek [61]
- Subwatershed 39

\* bold number in brackets, [1], indicates ID number on map

Yellow Creek Watershed Action Plan

Yellow Creek Watershed Action Plan

Action	TMDL Action(s)/ Management Measure(s)	Stakeholder(s)	Possible Funding Source(s) (see page 4 for complete title)	Expected Improvement(s)	Evaluation
<ul style="list-style-type: none"> <li>West Fork, Shaw Rd. to Crystal Lake Rd. [23]</li> <li>Subwatershed 37</li> <li>Bath Creek, south of Bath Rd. [27]</li> <li>Bath Creek, Ira Rd. south to Derrwood Dr. [30]</li> </ul>	<ul style="list-style-type: none"> <li>Action #3: educational programs of the entire Lower Cuyahoga River TMDL area</li> </ul>	<ul style="list-style-type: none"> <li>Riparian landowners</li> <li>Affected communities</li> <li>SWCD</li> <li>NEFCO</li> </ul>	<ul style="list-style-type: none"> <li>Ohio EPA</li> <li>WRRSP</li> <li>WPCLF</li> <li>CWSRF</li> <li>GLPF</li> <li>LEPF</li> <li>PL-566</li> <li>Five-Star Grant</li> </ul>	<ul style="list-style-type: none"> <li>Riparian landowners informed of the appropriate plants for riparian restoration</li> <li>Inspiration for residents to take initiative and plant additional vegetation along riparian corridors</li> <li>Provision of trees and shrubs for replanting</li> <li>Restoration of under-vegetated riparian areas</li> <li>Reduction in erosion, sedimentation, and flood damage, and nonpoint source pollution</li> <li>Regulation of stream water temperature</li> <li>Improved aquatic habitat</li> <li>Opportunity for riparian landowners to actively restore streams</li> </ul>	<ul style="list-style-type: none"> <li>Number of brochures distributed</li> </ul>
<ul style="list-style-type: none"> <li>Provide riparian landowners with trees and shrubs for planting along stream banks</li> </ul>	<ul style="list-style-type: none"> <li>Action #9: riparian protection of the Cuyahoga River and tributaries</li> </ul>	<ul style="list-style-type: none"> <li>Riparian landowners</li> <li>Affected communities</li> <li>SWCD</li> </ul>	<ul style="list-style-type: none"> <li>Ohio EPA</li> <li>WRRSP</li> <li>WPCLF</li> <li>CWSRF</li> <li>GLPF</li> <li>LEPF</li> <li>PL-566</li> <li>Five-Star Grant</li> </ul>	<ul style="list-style-type: none"> <li>Number of riparian landowners provided with trees and shrubs</li> <li>Total number of trees and shrubs distributed to riparian landowners</li> <li>Linear feet of riparian corridor replanted</li> </ul>	<ul style="list-style-type: none"> <li>Number of riparian landowners enrolled in bufferscaping program</li> <li>Total number of additional trees/ shrubs planted</li> <li>Total linear feet of stream replanted</li> <li>Number of visits to web site</li> <li>Comments, questions, suggestions, and other feedback sent to web site</li> </ul>
<ul style="list-style-type: none"> <li>Enlist riparian landowners to participate in 'bufferscaping' program by planting native trees and shrubs in their backyards</li> </ul>	<ul style="list-style-type: none"> <li>Action #9: riparian protection of the Cuyahoga River and tributaries</li> </ul>	<ul style="list-style-type: none"> <li>Riparian landowners</li> <li>Affected communities</li> <li>SWCD</li> <li>NEFCO</li> </ul>	<ul style="list-style-type: none"> <li>Ohio EPA</li> <li>WRRSP</li> <li>WPCLF</li> <li>CWSRF</li> <li>GLPF</li> <li>LEPF</li> <li>PL-566</li> <li>Five-Star Grant</li> </ul>	<ul style="list-style-type: none"> <li>Increase the riparian buffer width</li> <li>Actively involve interested residents in the stewardship of a riparian buffer and stream</li> <li>Reduction in nonpoint source pollution</li> <li>Increased understanding of riparian habitats</li> <li>Explanation and illustrations of stream restoration projects</li> </ul>	<ul style="list-style-type: none"> <li>Number of riparian landowners enrolled in bufferscaping program</li> <li>Total number of additional trees/ shrubs planted</li> <li>Total linear feet of stream replanted</li> <li>Number of visits to web site</li> <li>Comments, questions, suggestions, and other feedback sent to web site</li> </ul>
<ul style="list-style-type: none"> <li>Create a Yellow Creek Watershed educational web site including riparian corridor information and</li> </ul>	<ul style="list-style-type: none"> <li>Action #3: educational programs of the entire Lower Cuyahoga River</li> </ul>	<ul style="list-style-type: none"> <li>Riparian landowners</li> <li>Watershed residents</li> <li>All communities</li> </ul>	<ul style="list-style-type: none"> <li>Ohio EPA</li> <li>WRRSP</li> <li>WPCLF</li> <li>CWSRF</li> <li>GLPF</li> </ul>	<ul style="list-style-type: none"> <li>Increased understanding of riparian habitats</li> <li>Explanation and illustrations of stream restoration projects</li> </ul>	<ul style="list-style-type: none"> <li>Number of visits to web site</li> <li>Comments, questions, suggestions, and other feedback sent to web site</li> </ul>

\* bold number in brackets, [1], indicates ID number on map

Yellow Creek Watershed Action Plan

Action	TMDL Action(s)/ Management Measure(s)	Stakeholder(s)	Possible Funding Source(s) (see page 4 for complete title)	Expected Improvement(s)	Evaluation
illustrating stream restoration projects	TMDL area	in watershed ▪ SWCD ▪ NEFCO	▪ LEPF ▪ PL-566 ▪ Five-Star Grant		
e. Conduct workshop/seminar focusing on the trees and shrubs appropriate for replanting along a riparian corridor	▪ Action #3: educational programs of the entire Lower Cuyahoga River TMDL area	▪ Riparian landowners ▪ All communities in watershed ▪ SWCD	▪ Ohio EPA ▪ WRRSP ▪ WPCLF ▪ CWSRF ▪ GLPF ▪ LEPF ▪ PL-566 ▪ Five-Star Grant	▪ Riparian landowners provided with hands-on training on replanting riparian stream corridors and education on proper plants for re-vegetation	▪ Workshop attendance ▪ Comments, questions, suggestions, and other feedback generated at workshop
f. Organize school projects for replanting riparian corridors	▪ Action #9: riparian protection of the Cuyahoga River and tributaries	▪ Local schools in watershed ▪ NEFCO ▪ SWCD ▪ All communities in watershed	▪ Ohio EPA ▪ WRRSP ▪ WPCLF ▪ CWSRF ▪ GLPF ▪ LEPF ▪ PL-566 ▪ Five-Star Grant	▪ Opportunity for students to revitalize stream corridors and take an active role in bettering the watershed and community	▪ Participation in school event ▪ Total number of plantings
<b>Goal 2:</b> Educate watershed stakeholders about best management practices (BMPs) to protect water quality					
<b>Objective 2.1:</b> Organize a comprehensive educational program emphasizing storm water management					
<b>Priority Areas:</b>					
▪ Entire watershed					
a. Develop and distribute brochures detailing household BMPs	▪ Action #3: educational programs of the entire Lower Cuyahoga River TMDL area	▪ Watershed residents ▪ All communities in watershed ▪ NEFCO ▪ SWCD	▪ Ohio EPA ▪ WRRSP ▪ WPCLF ▪ CWSRF ▪ GLPF ▪ LEPF ▪ PL-566 ▪ Five-Star Grant	▪ Residents informed about basic storm water management concepts ▪ Community residents conscious of household BMPs	▪ Number of brochures distributed
b. Educate homeowners to direct downspouts into vegetated area, away from septic system, impervious surface, and home	▪ Action #3: educational programs of the entire Lower Cuyahoga River TMDL area	▪ Watershed residents ▪ All communities in watershed ▪ NEFCO ▪ SWCD	▪ Ohio EPA ▪ WRRSP ▪ WPCLF ▪ CWSRF ▪ GLPF ▪ LEPF ▪ PL-566	▪ Reduction in total runoff ▪ Promotion of infiltration	▪ Number of brochures distributed ▪ Number of downspouts redirected

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**Yellow Creek Watershed Action Plan**

**Yellow Creek Watershed Action Plan**

Action	TMDL Action(s)/ Management Measure(s)	Stakeholder(s)	Possible Funding Source(s) (see page 4 for complete title)	Expected Improvement(s)	Evaluation
c. Hold public meeting to discuss watershed issues and household storm water BMPs	<ul style="list-style-type: none"> <li>▪ Action #3: educational programs of the entire Lower Cuyahoga River TMDL area</li> </ul>	<ul style="list-style-type: none"> <li>▪ Watershed residents</li> <li>▪ All communities in watershed</li> <li>▪ NEFCO</li> <li>▪ SWCD</li> </ul>	<ul style="list-style-type: none"> <li>▪ Ohio EPA</li> <li>▪ WRRSP</li> <li>▪ WPCLF</li> <li>▪ CWSRF</li> <li>▪ GLPF</li> <li>▪ LEPP</li> <li>▪ PL-566</li> </ul>	<ul style="list-style-type: none"> <li>▪ Citizens informed of basic storm water management concepts</li> <li>▪ Community residents conscious of household BMPs</li> </ul>	<ul style="list-style-type: none"> <li>▪ Meeting attendance</li> <li>▪ Comments, questions, suggestions, and other feedback generated at meeting</li> </ul>
d. Hold workshop/seminar for developers and builders on Phase II regulations and storm water management BMPs	<ul style="list-style-type: none"> <li>▪ Action #3: educational programs of the entire Lower Cuyahoga River TMDL area</li> </ul>	<ul style="list-style-type: none"> <li>▪ Builders, developers</li> <li>▪ Home Builders Association</li> <li>▪ NEFCO</li> <li>▪ SWCD</li> <li>▪ County Engineer</li> <li>▪ All communities in watershed</li> </ul>	<ul style="list-style-type: none"> <li>▪ Ohio EPA</li> <li>▪ WRRSP</li> <li>▪ WPCLF</li> <li>▪ CWSRF</li> <li>▪ GLPF</li> <li>▪ LEPP</li> <li>▪ PL-566</li> </ul>	<ul style="list-style-type: none"> <li>▪ Builders and developers learn Phase II regulations and storm water management BMPs</li> </ul>	<ul style="list-style-type: none"> <li>▪ Workshop attendance</li> <li>▪ Comments, questions, suggestions, and other feedback generated at workshop</li> </ul>
e. Organize a field trip of the watershed to illustrate the use of storm water management BMPs	<ul style="list-style-type: none"> <li>▪ Action #3: educational programs of the entire Lower Cuyahoga River TMDL area</li> </ul>	<ul style="list-style-type: none"> <li>▪ Watershed residents</li> <li>▪ All communities in watershed</li> <li>▪ NEFCO</li> <li>▪ SWCD</li> </ul>	<ul style="list-style-type: none"> <li>▪ Ohio EPA</li> <li>▪ WRRSP</li> <li>▪ WPCLF</li> <li>▪ CWSRF</li> <li>▪ GLPF</li> <li>▪ LEPP</li> <li>▪ PL-566</li> <li>▪ Five-Star Grant</li> </ul>	<ul style="list-style-type: none"> <li>▪ Opportunity for attendees to visit specific sites where BMPs have been employed</li> </ul>	<ul style="list-style-type: none"> <li>▪ Field trip attendance</li> <li>▪ Comments, questions, suggestions, and other feedback generated during field trip</li> </ul>
f. Create a Yellow Creek Watershed educational web site including information regarding storm water management BMPs	<ul style="list-style-type: none"> <li>▪ Action #3: educational programs of the entire Lower Cuyahoga River TMDL area</li> </ul>	<ul style="list-style-type: none"> <li>▪ Watershed residents</li> <li>▪ All communities in watershed</li> <li>▪ NEFCO</li> <li>▪ SWCD</li> </ul>	<ul style="list-style-type: none"> <li>▪ Ohio EPA</li> <li>▪ WRRSP</li> <li>▪ WPCLF</li> <li>▪ CWSRF</li> <li>▪ GLPF</li> <li>▪ LEPP</li> <li>▪ PL-566</li> </ul>	<ul style="list-style-type: none"> <li>▪ Increased understanding of storm water management BMPs</li> <li>▪ Explanation and illustrations of proper techniques and activities</li> </ul>	<ul style="list-style-type: none"> <li>▪ Number of web site visits</li> <li>▪ Comments, questions, suggestions, and other feedback sent to web site</li> </ul>
<b>Goal 2: Educate watershed stakeholders about best management practices (BMPs) to protect water quality</b>					
<b>Objective 2.2: Maintain vegetated roadside drainage ditches</b>					
<b>Priority Areas:</b>					
<ul style="list-style-type: none"> <li>▪ Entire watershed</li> </ul>					
a. Distribute brochures to watershed residents explaining the importance of	<ul style="list-style-type: none"> <li>▪ Action #3: educational programs of the entire Lower</li> </ul>	<ul style="list-style-type: none"> <li>▪ Watershed residents</li> <li>▪ All communities in watershed</li> </ul>	<ul style="list-style-type: none"> <li>▪ Ohio EPA</li> <li>▪ WRRSP</li> <li>▪ WPCLF</li> <li>▪ CWSRF</li> </ul>	<ul style="list-style-type: none"> <li>▪ Residents informed of importance of natural drainage conveyance</li> <li>▪ Increased likelihood of</li> </ul>	<ul style="list-style-type: none"> <li>▪ Number of brochures distributed</li> </ul>

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Yellow Creek Watershed Action Plan					
Action	TMDL Action(s)/ Management Measure(s)	Stakeholder(s)	Possible Funding Source(s) (see page 4 for complete title)	Expected Improvement(s)	Evaluation
maintaining roadside drainage ditches	Cuyahoga River TMDL area	<ul style="list-style-type: none"> <li>NEFCO</li> <li>SWCD</li> <li>County Engineer</li> </ul>	<ul style="list-style-type: none"> <li>GLPF</li> <li>LEPF</li> <li>PL-566</li> </ul>	<ul style="list-style-type: none"> <li>proper maintenance and protection of existing drainage ditches</li> </ul>	
b. Protect and maintain grassed and vegetated roadside drainage ditches/swales	<ul style="list-style-type: none"> <li>Action #2: Phase II Storm water programs of the entire Lower Cuyahoga River TMDL area</li> </ul>	<ul style="list-style-type: none"> <li>Watershed residents</li> <li>All communities in watershed</li> <li>SWCD</li> <li>County Engineer</li> </ul>	<ul style="list-style-type: none"> <li>Ohio EPA</li> <li>WRRSP</li> <li>WPCLF</li> <li>CWSRF</li> <li>GLPF</li> <li>LEPF</li> <li>PL-566</li> </ul>	<ul style="list-style-type: none"> <li>Promotion of natural storm water conveyance</li> <li>Promotion of infiltration</li> <li>Reduction in storm water runoff</li> </ul>	<ul style="list-style-type: none"> <li>Continued maintenance of existing ditches and swales</li> </ul>
c. Retrofit curbed subdivisions with grassed roadside drainage ditch/swale	<ul style="list-style-type: none"> <li>Action #2: Phase II Storm water programs of the entire Lower Cuyahoga River TMDL area</li> </ul>	<ul style="list-style-type: none"> <li>Watershed residents</li> <li>All communities in watershed</li> <li>SWCD</li> <li>County Engineer</li> </ul>	<ul style="list-style-type: none"> <li>Ohio EPA</li> <li>WRRSP</li> <li>WPCLF</li> <li>CWSRF</li> <li>GLPF</li> <li>LEPF</li> <li>PL-566</li> </ul>	<ul style="list-style-type: none"> <li>Promotion of natural storm water conveyance</li> <li>Promotion of infiltration</li> <li>Reduction in storm water runoff</li> </ul>	<ul style="list-style-type: none"> <li>Number of curbs retrofitted to grassed drainage ditches</li> </ul>
<b>Goal 3: Maintain and protect potential groundwater recharge areas</b>					
<b>Objective 3.1: Protect forested areas of potential groundwater recharge</b>					
<b>Priority Areas:</b>					
Subwatershed 36					
<ul style="list-style-type: none"> <li>State Route 18, west of State Rd. [4]</li> <li>Swan Lake Dr. [10]</li> <li>State Route 18, south to Westmont Dr. [11]</li> <li>Idlebrook Dr. [15]</li> <li>Rolling View Dr./Melody Dr. [16]</li> </ul>					
Subwatershed 38					
<ul style="list-style-type: none"> <li>Barnsleigh Dr. [18]</li> <li>Lois Rd./Hametown Rd. [21]</li> <li>North Fork, west of Cleveland-Massillon Rd. [39]</li> <li>Sourek Rd./Berrywood Dr. [55]</li> <li>North side of Ghent Rd. [56]</li> </ul>					
Subwatershed 39					
a. Distribute brochures to homeowners explaining the importance and benefits of forest/ woodland preservation on private property	<ul style="list-style-type: none"> <li>Action #3: educational programs of the entire Lower Cuyahoga River TMDL area</li> </ul>	<ul style="list-style-type: none"> <li>Watershed residents</li> <li>All communities in watershed</li> <li>NEFCO</li> <li>SWCD</li> </ul>	<ul style="list-style-type: none"> <li>Ohio EPA</li> <li>RCA</li> <li>PL-566</li> </ul>	<ul style="list-style-type: none"> <li>Landowners informed of the importance of maintaining wooded areas</li> <li>Landowners educated on the importance of groundwater recharge</li> </ul>	<ul style="list-style-type: none"> <li>Number of brochures distributed</li> </ul>
b. Provide landowners with trees for planting on property		<ul style="list-style-type: none"> <li>Watershed residents</li> <li>All communities in watershed</li> <li>NEFCO</li> <li>SWCD</li> </ul>	<ul style="list-style-type: none"> <li>Ohio EPA</li> <li>RCA</li> <li>WAWA</li> <li>Tree Planting</li> <li>PL-566</li> </ul>	<ul style="list-style-type: none"> <li>Augmentation of natural groundwater recharge areas</li> <li>Opportunity for residents to take an active role in bettering the watershed</li> </ul>	<ul style="list-style-type: none"> <li>Number of trees replanted</li> <li>Number of properties participating in program</li> <li>Total amount of funds procured for additional planting</li> </ul>

\* bold number in brackets, [1], indicates ID number on map

**Yellow Creek Watershed Action Plan**

Action	TMDL Action(s)/ Management Measure(s)	Stakeholder(s)	Possible Funding Source(s) (see page 4 for complete title)	Expected Improvement(s)	Evaluation
c. Conduct workshop for watershed residents, explaining groundwater recharge and forest cover	<ul style="list-style-type: none"> <li>Action #3: educational programs of the entire Lower Cuyahoga River TMDL area</li> </ul>	<ul style="list-style-type: none"> <li>Watershed residents</li> <li>All communities in watershed</li> <li>NEFCO</li> <li>SWCD</li> </ul>	<ul style="list-style-type: none"> <li>Ohio EPA</li> <li>RCA</li> <li>WAWA</li> <li>PL-566</li> </ul>	<ul style="list-style-type: none"> <li>Landowners learn the importance of maintaining wooded property</li> <li>Landowners educated on the importance of groundwater recharge</li> </ul>	<ul style="list-style-type: none"> <li>Workshop attendance</li> <li>Participation, comments, questions, and suggestions generated at workshop</li> </ul>
d. Organize a field trip of watershed to visit forested groundwater recharge areas	<ul style="list-style-type: none"> <li>Action #3: educational programs of the entire Lower Cuyahoga River TMDL area</li> </ul>	<ul style="list-style-type: none"> <li>Watershed residents</li> <li>All communities in watershed</li> <li>NEFCO</li> <li>SWCD</li> </ul>	<ul style="list-style-type: none"> <li>Ohio EPA</li> <li>WAWA</li> <li>RCA</li> <li>PL-566</li> </ul>	<ul style="list-style-type: none"> <li>Opportunity for watershed residents to visit and see examples of wooded, groundwater recharge areas</li> </ul>	<ul style="list-style-type: none"> <li>Field trip attendance</li> <li>Participation, comments, questions, and suggestions generated during field trip</li> </ul>
e. Create a Yellow Creek Watershed educational web site including information regarding groundwater recharge and forest resources	<ul style="list-style-type: none"> <li>Action #3: educational programs of the entire Lower Cuyahoga River TMDL area</li> </ul>	<ul style="list-style-type: none"> <li>Watershed residents</li> <li>All communities in watershed</li> <li>NEFCO</li> <li>SWCD</li> </ul>	<ul style="list-style-type: none"> <li>Ohio EPA</li> <li>PL-566</li> </ul>	<ul style="list-style-type: none"> <li>Increased understanding of groundwater recharge</li> <li>Explanation and illustrations of wooded groundwater recharge areas</li> </ul>	<ul style="list-style-type: none"> <li>Number of web site visits</li> <li>Comments, questions, suggestions, and other feedback sent to web site</li> </ul>
<p><b>Goal 3: Maintain and protect potential groundwater recharge areas</b></p> <p><b>Objective 3.2: Restore unforested areas of potential groundwater recharge</b></p>					
<p><b>Priority Areas:</b></p> <p>Subwatershed 36</p> <ul style="list-style-type: none"> <li>South of State Route 18, west of South Fork [12]</li> <li>South of Granger Rd., between Heatherleigh Dr. and Hametown Rd. [20]</li> </ul> <p>Subwatershed 38</p> <ul style="list-style-type: none"> <li>Bath Rd./Cleveland-Massillon Rd. intersection [37]</li> <li>Everett Rd., west of North Fork [43]</li> </ul>					
a. Distribute brochures to homeowners explaining the importance and benefits of wooded landcover on private property	<ul style="list-style-type: none"> <li>Action #3: educational programs of the entire Lower Cuyahoga River TMDL area</li> </ul>	<ul style="list-style-type: none"> <li>Watershed residents</li> <li>All communities in watershed</li> <li>NEFCO</li> <li>SWCD</li> </ul>	<ul style="list-style-type: none"> <li>Ohio EPA</li> <li>RCA</li> <li>PL-566</li> </ul>	<ul style="list-style-type: none"> <li>Residents informed of the importance of maintaining wooded property</li> <li>Landowners educated on the importance of groundwater recharge</li> </ul>	<ul style="list-style-type: none"> <li>Number of brochures distributed</li> </ul>
b. Provide landowners with trees for planting on property		<ul style="list-style-type: none"> <li>Watershed residents</li> <li>All communities in watershed</li> <li>NEFCO</li> <li>SWCD</li> </ul>	<ul style="list-style-type: none"> <li>Ohio EPA</li> <li>RCA</li> <li>WAWA</li> <li>Tree Planting</li> <li>PL-566</li> </ul>	<ul style="list-style-type: none"> <li>Augmentation of natural groundwater recharge areas</li> <li>Opportunity for residents to take an active role in bettering the watershed</li> </ul>	<ul style="list-style-type: none"> <li>Number of trees replanted</li> <li>Number of properties participating in program</li> <li>Total amount of funds procured for additional planting</li> </ul>

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Action	TMDL Action(s)/ Management Measure(s)	Stakeholder(s)	Possible Funding Source(s) (see page 4 for complete title)	Expected Improvement(s)	Evaluation
c. Conduct workshop for watershed residents, explaining groundwater recharge and forest cover	<ul style="list-style-type: none"> <li>Action #3: educational programs of the entire Lower Cuyahoga River TMDL area</li> </ul>	<ul style="list-style-type: none"> <li>Watershed residents</li> <li>All communities in watershed</li> <li>NEFCO</li> <li>SWCD</li> </ul>	<ul style="list-style-type: none"> <li>Ohio EPA</li> <li>RCA</li> <li>WAWA</li> <li>PL-566</li> </ul>	<ul style="list-style-type: none"> <li>Landowners learn the importance of maintaining wooded property</li> <li>Landowners educated on the importance of groundwater recharge</li> </ul>	<ul style="list-style-type: none"> <li>Workshop attendance</li> <li>Participation, comments, questions, and suggestions generated at workshop</li> </ul>
d. Organize a field trip of watershed to visit forested groundwater recharge areas	<ul style="list-style-type: none"> <li>Action #3: educational programs of the entire Lower Cuyahoga River TMDL area</li> </ul>	<ul style="list-style-type: none"> <li>Watershed residents</li> <li>All communities in watershed</li> <li>NEFCO</li> <li>SWCD</li> </ul>	<ul style="list-style-type: none"> <li>Ohio EPA</li> <li>WAWA</li> <li>RCA</li> <li>PL-566</li> </ul>	<ul style="list-style-type: none"> <li>Opportunity for watershed residents to visit and see examples of wooded, groundwater recharge areas</li> </ul>	<ul style="list-style-type: none"> <li>Field trip attendance</li> <li>Participation, comments, questions, and suggestions generated during field trip</li> </ul>
e. Create a Yellow Creek Watershed educational web site including information regarding groundwater recharge and forest resources	<ul style="list-style-type: none"> <li>Action #3: educational programs of the entire Lower Cuyahoga River TMDL area</li> </ul>	<ul style="list-style-type: none"> <li>Watershed residents</li> <li>All communities in watershed</li> <li>NEFCO</li> <li>SWCD</li> </ul>	<ul style="list-style-type: none"> <li>Ohio EPA</li> <li>PL-566</li> </ul>	<ul style="list-style-type: none"> <li>Increased understanding of groundwater recharge</li> <li>Explanation and illustrations of wooded groundwater recharge areas</li> </ul>	<ul style="list-style-type: none"> <li>Number of web site visits</li> <li>Comments, questions, suggestions, and other feedback sent to web site</li> </ul>
<p><b>Goal 4:</b> Recognize and address areas that have highly erodible soils</p>					
<p><b>Objective 4.1:</b> Preserve forested areas that have highly erodible soils</p>					
<p><b>Priority Areas:</b></p>					
<p>Subwatershed 36</p> <ul style="list-style-type: none"> <li>Ridgewood Rd. [1]</li> <li>S. Medina Line Rd., north of Ridgewood Rd. [2]</li> <li>Granger Rd., north to S. Lakespur [22]</li> <li>Shaw Rd., east of Hametown Rd. [26]</li> </ul> <p>Subwatershed 37</p> <ul style="list-style-type: none"> <li>Ira Rd./Hametown Rd. [31]</li> <li>Everett Rd., south of I-271 [35]</li> </ul>					
<p>Subwatershed 38</p> <ul style="list-style-type: none"> <li>Everett Rd., east of North Fork [44]</li> <li>Everett Rd., west of Cleveland-Massillon Rd. [45]</li> </ul> <p>Subwatershed 39</p> <ul style="list-style-type: none"> <li>Sourek Rd./Berrywood Dr. [55]</li> <li>West Point Dr./Sourek Run [57]</li> <li>Revere Run [66]</li> <li>Bath Rd./Cynthia Ln. [68]</li> <li>North Revere Run [69]</li> </ul>					
a. Distribute brochures to residents explaining erodible soils and the importance of maintaining wooded landcover	<ul style="list-style-type: none"> <li>Action #3: educational programs of the entire Lower Cuyahoga River TMDL area</li> </ul>	<ul style="list-style-type: none"> <li>Watershed residents</li> <li>All communities in watershed</li> <li>NEFCO</li> <li>SWCD</li> </ul>	<ul style="list-style-type: none"> <li>Ohio EPA</li> <li>RCA</li> <li>PL-566</li> </ul>	<ul style="list-style-type: none"> <li>Residents informed of the importance of maintaining wooded areas</li> <li>Residents aware of the consequences of under-vegetated cover on erodible soils</li> </ul>	<ul style="list-style-type: none"> <li>Number of brochures distributed</li> </ul>
b. Provide landowners with trees for planting on property		<ul style="list-style-type: none"> <li>Watershed residents</li> <li>All communities</li> </ul>	<ul style="list-style-type: none"> <li>Ohio EPA</li> <li>RCA</li> <li>WAWA</li> </ul>	<ul style="list-style-type: none"> <li>Protection of areas vulnerable to erosion</li> <li>Augmentation of wooded</li> </ul>	<ul style="list-style-type: none"> <li>Number of trees replanted</li> <li>Number of properties</li> </ul>

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Yellow Creek Watershed Action Plan

Action	TMDL Action(s)/ Management Measure(s)	Stakeholder(s)	Possible Funding Source(s) (see page 4 for complete title)	Expected Improvement(s)	Evaluation
c. Conduct workshop for watershed residents, explaining erodible soils and the importance of forest cover	<ul style="list-style-type: none"> <li>Action #3: educational programs of the entire Lower Cuyahoga River TMDL area</li> </ul>	<ul style="list-style-type: none"> <li>in watershed</li> <li>NEFCO</li> <li>SWCD</li> </ul>	<ul style="list-style-type: none"> <li>Tree Planting</li> <li>PL-566</li> </ul>	landcover in areas with highly erodible soils	<ul style="list-style-type: none"> <li>participating in program</li> <li>Total amount of funds procured for additional planting</li> </ul>
d. Organize a field trip of watershed to visit areas with erodible soils	<ul style="list-style-type: none"> <li>Action #3: educational programs of the entire Lower Cuyahoga River TMDL area</li> </ul>	<ul style="list-style-type: none"> <li>Watershed residents</li> <li>All communities in watershed</li> <li>NEFCO</li> <li>SWCD</li> </ul>	<ul style="list-style-type: none"> <li>Ohio EPA</li> <li>RCA</li> <li>WAWA</li> <li>PL-566</li> </ul>	<ul style="list-style-type: none"> <li>Residents learn about the importance of maintaining wooded areas</li> <li>Landowners aware of areas with erodible soils</li> </ul>	<ul style="list-style-type: none"> <li>Workshop attendance</li> <li>Participation, comments, questions, and suggestions generated at workshop</li> </ul>
e. Create a Yellow Creek Watershed educational web site including information regarding erodible soils	<ul style="list-style-type: none"> <li>Action #3: educational programs of the entire Lower Cuyahoga River TMDL area</li> </ul>	<ul style="list-style-type: none"> <li>Watershed residents</li> <li>All communities in watershed</li> <li>NEFCO</li> <li>SWCD</li> </ul>	<ul style="list-style-type: none"> <li>Ohio EPA</li> <li>WAWA</li> <li>RCA</li> <li>PL-566</li> </ul>	<ul style="list-style-type: none"> <li>Opportunity for watershed residents to visit and see examples of erodible soils areas</li> </ul>	<ul style="list-style-type: none"> <li>Field trip attendance</li> <li>Participation, comments, questions, and suggestions generated during field trip</li> </ul>
<p><b>Goal 4:</b> Recognize and address areas that have highly erodible soils</p> <p><b>Objective 4.2:</b> Restore unforested areas that have highly erodible soils</p> <p><b>Priority Areas:</b></p> <ul style="list-style-type: none"> <li>Subwatershed 36</li> <li>State Route 18, west of S. Medina Line Rd. [3]</li> <li>State Route 18/N. Medina Line Rd./Dunsha Rd. [5]</li> <li>Hughstowne Dr. [25]</li> <li>Subwatershed 37</li> <li>Bath Nature Preserve, open fields east of Bath Pond [28]</li> <li>Hametown Rd., south of Ira Rd. [29]</li> </ul>					
<p><b>Objective 4.2:</b> Restore unforested areas that have highly erodible soils</p> <p><b>Priority Areas:</b></p> <ul style="list-style-type: none"> <li>Subwatershed 38</li> <li>North of Ira Rd., east of the North Fork [42]</li> <li>North of Ira Rd., west of North Fork [43]</li> <li>Subwatershed 39</li> <li>Wye Rd./Sanctuary Rd. [59]</li> <li>Round Hill Dr. [65]</li> <li>Revere Rd./Brookview Dr. [70]</li> </ul>					
a. Distribute brochures to residents explaining erodible soils and the consequences of under-vegetation on these areas	<ul style="list-style-type: none"> <li>Action #3: educational programs of the entire Lower Cuyahoga River TMDL area</li> </ul>	<ul style="list-style-type: none"> <li>Watershed residents</li> <li>All communities in watershed</li> <li>NEFCO</li> <li>SWCD</li> </ul>	<ul style="list-style-type: none"> <li>Ohio EPA</li> <li>RCA</li> <li>PL-566</li> </ul>	<ul style="list-style-type: none"> <li>Landowners informed of the importance of maintaining wooded areas</li> <li>Residents aware of the consequences of under-vegetated cover on erodible soils</li> </ul>	<ul style="list-style-type: none"> <li>Number of brochures distributed</li> </ul>

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Yellow Creek Watershed Action Plan					
Action	TMDL Action(s)/ Management Measure(s)	Stakeholder(s)	Possible Funding Source(s) (see page 4 for complete title)	Expected Improvement(s)	Evaluation
b. Provide landowners with trees for planting on property		<ul style="list-style-type: none"> <li>Watershed residents</li> <li>All communities in watershed</li> <li>NEFCO</li> <li>SWCD</li> </ul>	<ul style="list-style-type: none"> <li>Ohio EPA</li> <li>RCA</li> <li>WAWA</li> <li>Tree Planting</li> <li>PL-566</li> </ul>	<ul style="list-style-type: none"> <li>Restoration of unforested areas vulnerable to erosion</li> <li>Augmentation of wooded landcover in areas with highly erodible soils</li> </ul>	<ul style="list-style-type: none"> <li>Number of trees replanted</li> <li>Number of properties participating in program</li> <li>Total amount of funds procured for additional planting</li> </ul>
c. Conduct workshop for watershed residents, explaining erodible soils and the importance of forest cover	<ul style="list-style-type: none"> <li>Action #3: educational programs of the entire Lower Cuyahoga River TMDL area</li> </ul>	<ul style="list-style-type: none"> <li>Watershed residents</li> <li>All communities in watershed</li> <li>NEFCO</li> <li>SWCD</li> </ul>	<ul style="list-style-type: none"> <li>Ohio EPA</li> <li>RCA</li> <li>WAWA</li> <li>PL-566</li> </ul>	<ul style="list-style-type: none"> <li>Landowners learn the importance of maintaining wooded property</li> <li>Residents aware of areas with erodible soils</li> </ul>	<ul style="list-style-type: none"> <li>Workshop attendance</li> <li>Participation, comments, questions, and suggestions generated at workshop</li> </ul>
d. Organize a field trip of watershed to visit areas with erodible soils	<ul style="list-style-type: none"> <li>Action #3: educational programs of the entire Lower Cuyahoga River TMDL area</li> </ul>	<ul style="list-style-type: none"> <li>Watershed residents</li> <li>All communities in watershed</li> <li>NEFCO</li> <li>SWCD</li> </ul>	<ul style="list-style-type: none"> <li>Ohio EPA</li> <li>WAWA</li> <li>RCA</li> <li>PL-566</li> </ul>	<ul style="list-style-type: none"> <li>Opportunity for watershed residents to visit and see examples of erodible soils areas</li> </ul>	<ul style="list-style-type: none"> <li>Field trip attendance</li> <li>Participation, comments, questions, and suggestions generated during field trip</li> </ul>
e. Create a Yellow Creek Watershed educational web site including information regarding erodible soils	<ul style="list-style-type: none"> <li>Action #3: educational programs of the entire Lower Cuyahoga River TMDL area</li> </ul>	<ul style="list-style-type: none"> <li>Watershed residents</li> <li>All communities in watershed</li> <li>NEFCO</li> <li>SWCD</li> </ul>	<ul style="list-style-type: none"> <li>Ohio EPA</li> <li>PL-566</li> </ul>	<ul style="list-style-type: none"> <li>Increased understanding of erodible soils</li> <li>Explanation and illustrations of areas with erodible soils</li> </ul>	<ul style="list-style-type: none"> <li>Number of web site visits</li> <li>Comments, questions, suggestions, and other feedback sent to web site</li> </ul>
<b>Goal 5:</b> Reduce imperviousness throughout watershed					
<b>Objective 5.1:</b> Reduce parking lot size					
<b>Priority Areas:</b>					
Subwatershed 38					
<ul style="list-style-type: none"> <li>Bath Center [36]</li> <li>Brecksville Rd. trucking areas [47]</li> </ul>					
Subwatershed 39					
a. Revise local ordinances/ codes to allow for smaller parking lots with fewer spaces	<ul style="list-style-type: none"> <li>Action #2: Phase II Storm water programs of the entire Lower Cuyahoga River TMDL area</li> </ul>	<ul style="list-style-type: none"> <li>Affected communities</li> <li>Affected business owners</li> <li>County planning commission</li> </ul>	<ul style="list-style-type: none"> <li>Summit Mall area [50]</li> <li>Ghent Rd. [51]</li> <li>Springside Dr. [53]</li> <li>Embassy Pkwy. [54]</li> <li>Ghent Village [60]</li> </ul>	<ul style="list-style-type: none"> <li>Adjusted/amended guidelines encouraging and promoting smaller parking lots</li> <li>Reduction in total impervious surface area</li> </ul>	<ul style="list-style-type: none"> <li>Number of communities making revisions to ordinances/codes</li> </ul>
b. Promote parking lot	<ul style="list-style-type: none"> <li>Action #2: Phase II</li> </ul>	<ul style="list-style-type: none"> <li>Affected</li> </ul>		<ul style="list-style-type: none"> <li>Reduction in the need for</li> </ul>	<ul style="list-style-type: none"> <li>Number of corporations</li> </ul>

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Action	TMDL Action(s)/ Management Measure(s)	Stakeholder(s)	Possible Funding Source(s) (see page 4 for complete title)	Expected Improvement(s)	Evaluation
sharing for adjacent properties	Storm water programs of the entire Lower Cuyahoga River TMDL area	communities ▪ Affected business owners		multiple parking lots ▪ Reduction in total impervious surface area	and businesses sharing parking lots
c. Retrofit overflow and seasonal parking areas with porous pavement	▪ Action #2: Phase II Storm water programs of the entire Lower Cuyahoga River TMDL area	▪ Affected communities ▪ Affected business owners ▪ County planning commission ▪ SWCD	▪ Ohio EPA ▪ GLPF ▪ LEPP ▪ CWSRF ▪ PL-566	▪ Reduction in total impervious surface area	▪ Total square feet of porous pavement introduced
d. Conduct demonstration/pilot project for introducing porous pavement into parking lot areas	▪ Action #2: Phase II Storm water programs of the entire Lower Cuyahoga River TMDL area	▪ Affected communities ▪ Affected business owners ▪ SWCD ▪ NEFCO	▪ Ohio EPA ▪ GLPF ▪ LEPP ▪ CWSRF ▪ PL-566	▪ Reduction in total runoff ▪ Promotion of increased infiltration ▪ Opportunity for business and commercial property owners to take active role in reducing runoff and improving storm water management	▪ Number of businesses participating in demonstration project ▪ Total square feet of porous pavement introduced
e. Distribute brochures to owners and managers of corporations about the environmental impacts of imperviousness and the alternative paving options available	▪ Action #3: educational programs of the entire Lower Cuyahoga River TMDL area	▪ Affected communities ▪ Affected business owners ▪ SWCD ▪ NEFCO	▪ Ohio EPA ▪ GLPF ▪ LEPP ▪ CWSRF ▪ PL-566	▪ Business owners aware of the options available for pervious paving	▪ Total number of brochures distributed
<b>Goal 5: Reduce imperviousness throughout watershed</b>					
<b>Objective 5.2: Break up large expanses of impervious surfaces</b>					
<b>Priority Areas:</b>					
Subwatershed 38					
▪ Bath Center [36]					
▪ Brecksville Rd. trucking areas [47]					
Subwatershed 39					
a. Install vegetated filter strips within large expanses of impervious	▪ Action #2: Phase II Storm water programs of the	▪ Affected communities ▪ Affected	▪ Ohio EPA ▪ GLPF ▪ LEPP	▪ Reduction in total runoff ▪ Promotion of increased infiltration	▪ Linear feet of vegetated filter strips installed

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Action	TMDL Action(s)/ Management Measure(s)	Stakeholder(s)	Possible Funding Source(s) (see page 4 for complete title)	Expected Improvement(s)	Evaluation
surfaces	entire Lower Cuyahoga River TMDL area	business owners SWCD	CWSRF PL-566		
b. Incorporate permeable paving in less-trafficked areas	Action #2: Phase II Storm water programs of the entire Lower Cuyahoga River TMDL area	Affected communities Affected business owners SWCD	Ohio EPA GLPF LEPF CWSRF PL-566	Reduction in total runoff Promotion of increased infiltration	Total square feet of permeable paving installed
c. Distribute brochures to business owners and managers about the environmental impacts of imperviousness and the alternative paving options available	Action #3: educational programs of the entire Lower Cuyahoga River TMDL area	Affected communities Affected business owners SWCD NEFCO	Ohio EPA GLPF LEPF CWSRF PL-566	Business owners aware of the options available for pervious paving	Total number of brochures distributed
<b>Goal 5: Reduce imperviousness throughout watershed</b>					
<b>Objective 5.3: Promote and encourage the use of permeable driveway surfaces</b>					
<b>Priority Areas:</b>					
a. Distribute brochures to residents explaining permeable paving and providers of such materials	Action #3: educational programs of the entire Lower Cuyahoga River TMDL area	Watershed residents All communities in watershed NEFCO SWCD	Ohio EPA GLPF LEPF CWSRF PL-566	Residents informed of the importance of pervious pavers Increased likelihood of residents opting for permeable paving	Total number of brochures distributed
b. Conduct demonstration/pilot project where selected homes retrofit driveways with porous pavement	Action #2: Phase II Storm water programs of the entire Lower Cuyahoga River TMDL area	Watershed residents All communities in watershed	Ohio EPA GLPF LEPF CWSRF PL-566	Reduction in total runoff Promotion of increased infiltration Opportunity for homeowners to take active role in reducing runoff and improving storm water management	Total number of homeowners participating in demonstration project Total square feet of porous pavement introduced
c. Replace concrete and asphalt driveways with gravel, dirt, grass, or other permeable surface	Action #2: Phase II Storm water programs of the entire Lower Cuyahoga River	Watershed residents All communities in watershed NEFCO	Ohio EPA GLPF LEPF CWSRF PL-566	Reduction in total runoff Promotion of increased infiltration	Total number of driveways reverting to permeable surfaces Total square feet of impervious surface area

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Action	TMDL Action(s)/ Management Measure(s)	Stakeholder(s)	Possible Funding Source(s) (see page 4 for complete title)	Expected Improvement(s)	Evaluation
	TMDL area	SWCD			removed
<b>Goal 5:</b> Reduce imperviousness throughout watershed					
<b>Objective 5.4:</b> Reduce street widths and cul-de-sac radii					
<b>Priority Areas:</b>					
a. Revise community zoning/engineering codes to allow for narrower streets and smaller cul-de-sacs	<ul style="list-style-type: none"> <li>Action #2: Phase II Storm water programs of the entire Lower Cuyahoga River TMDL area</li> </ul>	<ul style="list-style-type: none"> <li>All communities in watershed</li> <li>County planning commission</li> <li>County Engineer</li> </ul>		<ul style="list-style-type: none"> <li>Reduction in total runoff</li> <li>Promotion of increased infiltration</li> </ul>	<ul style="list-style-type: none"> <li>Total number of communities making revisions to municipal codes and regulations concerning street width</li> </ul>
b. Install vegetated circles in centers of cul-de-sacs	<ul style="list-style-type: none"> <li>Action #2: Phase II Storm water programs of the entire Lower Cuyahoga River TMDL area</li> </ul>	<ul style="list-style-type: none"> <li>Builders</li> <li>Developers</li> <li>SWCD</li> </ul>	<ul style="list-style-type: none"> <li>Ohio EPA</li> <li>GLPF</li> <li>LEPF</li> <li>CWSRF</li> <li>PL-566</li> </ul>	<ul style="list-style-type: none"> <li>Reduction in total runoff</li> <li>Promotion of increased infiltration</li> </ul>	<ul style="list-style-type: none"> <li>Total number of center islands installed</li> <li>Total square feet of impervious surface removed</li> </ul>
c. Conduct workshop for builders and developers emphasizing reduced imperviousness and alternative development designs	<ul style="list-style-type: none"> <li>Action #3: educational programs of the entire Lower Cuyahoga River TMDL area</li> </ul>	<ul style="list-style-type: none"> <li>Builders</li> <li>Developers</li> <li>Home Builders Association</li> <li>SWCD</li> <li>NEFCO</li> </ul>	<ul style="list-style-type: none"> <li>Ohio EPA</li> <li>GLPF</li> <li>LEPF</li> <li>CWSRF</li> <li>PL-566</li> </ul>	<ul style="list-style-type: none"> <li>Developers and builders learn alternative layouts, emphasizing reduced imperviousness</li> <li>Increased likelihood of developers adopting such practices</li> </ul>	<ul style="list-style-type: none"> <li>Workshop attendance</li> <li>Participation, questions, comments, and suggestions generated at workshop</li> </ul>
<b>Goal 6:</b> Protect current forested areas and promote additional tree planting					
<b>Objective 6.1:</b> Hire a watershed forester or community forester to oversee a comprehensive forest resource management program					
<b>Priority Areas:</b>					
a. Procure funds/taxes from watershed residents or use grant monies to fund forester position		<ul style="list-style-type: none"> <li>Watershed residents</li> <li>All communities in watershed</li> </ul>	<ul style="list-style-type: none"> <li>RCA</li> <li>PL-566</li> </ul>	<ul style="list-style-type: none"> <li>Hired individual with expertise in forestry</li> </ul>	<ul style="list-style-type: none"> <li>Total amount of revenue collected for the establishment of a community forester position</li> </ul>
b. Create plan for future protection and restoration of forest resources within the watershed		<ul style="list-style-type: none"> <li>All communities in watershed</li> </ul>	<ul style="list-style-type: none"> <li>RCA</li> <li>PL-566</li> </ul>	<ul style="list-style-type: none"> <li>Comprehensive forest plan outlining specific areas of preservation, protection, and replanting</li> <li>Increased likelihood of</li> </ul>	<ul style="list-style-type: none"> <li>Completion of plan</li> </ul>

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Action	TMDL Action(s)/ Management Measure(s)	Stakeholder(s)	Possible Funding Source(s) (see page 4 for complete title)	Expected Improvement(s)	Evaluation
<p><b>Goal 6:</b> Protect current forested areas and promote additional tree planting</p> <p><b>Objective 6.2:</b> Preserve current forest areas within watershed</p> <p><b>Priority Areas:</b></p> <ul style="list-style-type: none"> <li>Subwatershed 36</li> <li>South Fork [17]</li> <li>Subwatershed 37</li> <li>Upper Bath Creek [33]</li> </ul>	<ul style="list-style-type: none"> <li>a. Distribute brochures to emphasizing the importance of maintaining forested areas</li> </ul>	<ul style="list-style-type: none"> <li>▪ Action #3: educational programs of the entire Lower Cuyahoga River TMDL area</li> </ul>	<p>Subwatershed 38</p> <ul style="list-style-type: none"> <li>▪ Upper North Fork [48]</li> <li>Subwatershed 39</li> <li>▪ Yellow Creek [64]</li> <li>▪ Revere Run [66]</li> <li>▪ Ohio EPA</li> <li>▪ RCA</li> <li>▪ WAWA</li> <li>▪ PL-566</li> </ul>	<ul style="list-style-type: none"> <li>▪ Watershed residents informed of the importance of maintaining and preserving forest areas</li> </ul>	<ul style="list-style-type: none"> <li>▪ Total number of brochures distributed</li> </ul>
<ul style="list-style-type: none"> <li>b. Solicitation of landowners to donate conservation easements to protect the future integrity of their land</li> </ul>		<ul style="list-style-type: none"> <li>▪ All communities in watershed</li> <li>▪ Watershed residents</li> <li>▪ NEFCO</li> <li>▪ SWCD</li> <li>▪ Medina Summit Land Conservancy</li> <li>▪ NEFCO</li> <li>▪ SWCD</li> <li>▪ Watershed residents</li> <li>▪ All communities in watershed</li> </ul>		<ul style="list-style-type: none"> <li>▪ Donated property ensures future protection of land from development and deforestation</li> </ul>	<ul style="list-style-type: none"> <li>▪ Total number of acres donated as conservation easement</li> </ul>
<ul style="list-style-type: none"> <li>c. Provide landowners with trees for planting on property</li> </ul>		<ul style="list-style-type: none"> <li>▪ All communities in watershed</li> <li>▪ Watershed residents</li> <li>▪ SWCD</li> </ul>	<ul style="list-style-type: none"> <li>▪ Ohio EPA</li> <li>▪ RCA</li> <li>▪ WAWA</li> <li>▪ Tree Planting</li> <li>▪ PL-566</li> </ul>	<ul style="list-style-type: none"> <li>▪ Preservation and augmentation of current forest resources within the watershed</li> </ul>	<ul style="list-style-type: none"> <li>▪ Total number of trees planted</li> </ul>
<p><b>Goal 7: Adopt Conservation Development Practices</b></p>					
<p><b>Objective 7.1:</b> Encourage cluster development and open space preservation</p>					
<p><b>Priority Areas:</b></p> <ul style="list-style-type: none"> <li>▪ Each community in the watershed</li> </ul>					
<ul style="list-style-type: none"> <li>a. Conduct workshop for builders and home buyers focusing on conservation development practices</li> </ul>	<ul style="list-style-type: none"> <li>▪ Action #3: educational programs of the entire Lower Cuyahoga River TMDL area</li> </ul>	<ul style="list-style-type: none"> <li>▪ All communities in watershed</li> <li>▪ SWCD</li> <li>▪ County Engineer</li> <li>▪ Home Builders Association</li> </ul>	<ul style="list-style-type: none"> <li>▪ Ohio EPA</li> <li>▪ WAWA</li> <li>▪ PL-566</li> </ul>	<ul style="list-style-type: none"> <li>▪ Builders and developers learn basic conservation development practices</li> <li>▪ Future adherence of developers and builders to conservation development</li> </ul>	<ul style="list-style-type: none"> <li>▪ Workshop attendance</li> <li>▪ Participation, questions, comments, and suggestions generated at workshop</li> </ul>

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Action	TMDL Action(s)/ Management Measure(s)	Stakeholder(s)	Possible Funding Source(s) (see page 4 for complete title)	Expected Improvement(s)	Evaluation
b. Evaluate environmental standards during the development review process		<ul style="list-style-type: none"> <li>▪ Builders</li> <li>▪ Developers</li> <li>▪ All communities in watershed</li> <li>▪ County planning commission</li> <li>▪ Home Builders Association</li> <li>▪ Builders</li> <li>▪ Developers</li> </ul>		<p>practices</p> <ul style="list-style-type: none"> <li>▪ Adherence to stricter environmental standards by developers and builders</li> <li>▪ Creation of sustainable communities with storm water management BMPs</li> </ul>	<ul style="list-style-type: none"> <li>▪ Total number of communities adopting more stringent design review procedures</li> <li>▪ Total number of developments required to modify plans in order to comply with revised standards</li> </ul>
<b>Goal 7: Adopt Conservation Development Practices</b>					
<b>Objective 7.2: Minimize amount of disturbed area with new developments</b>					
<b>Priority Areas:</b>					
<ul style="list-style-type: none"> <li>▪ Entire watershed</li> </ul>					
a. Conduct workshop for developers and builders stressing minimal clearance and disturbance practices	<ul style="list-style-type: none"> <li>▪ Action #3: educational programs of the entire Lower Cuyahoga River TMDL area</li> </ul>	<ul style="list-style-type: none"> <li>▪ All communities in watershed</li> <li>▪ SWCD</li> <li>▪ Home Builders Association</li> <li>▪ Developers</li> <li>▪ Builders</li> </ul>	<ul style="list-style-type: none"> <li>▪ Ohio EPA</li> <li>▪ WAWA</li> <li>▪ PL-566</li> </ul>	<ul style="list-style-type: none"> <li>▪ Builders and developers learn methods of minimal clearance and disturbance</li> <li>▪ Future adherence of developers and builders to such conservation development practices</li> </ul>	<ul style="list-style-type: none"> <li>▪ Workshop attendance</li> <li>▪ Participation, questions, comments, and suggestions generated at workshop</li> </ul>
b. Clear as few trees as necessary when grading and preparing building sites		<ul style="list-style-type: none"> <li>▪ All communities in watershed</li> <li>▪ Home Builders Association</li> <li>▪ Developers</li> <li>▪ Builders</li> </ul>		<ul style="list-style-type: none"> <li>▪ Reduction in amount of cleared trees</li> <li>▪ Preservation of valuable woodlands and open space</li> </ul>	<ul style="list-style-type: none"> <li>▪ Total number of trees saved</li> <li>▪ Total acreage left undisturbed</li> </ul>
c. Physically demarcate the area to be disturbed, individually marking which trees will be removed and saved		<ul style="list-style-type: none"> <li>▪ Builders</li> <li>▪ Developers</li> </ul>		<ul style="list-style-type: none"> <li>▪ Reduction in the amount of cleared trees</li> <li>▪ Preservation of valuable woodlands and open space</li> </ul>	<ul style="list-style-type: none"> <li>▪ Total number of trees saved</li> <li>▪ Total acreage left undisturbed</li> </ul>
<b>Goal 7: Adopt Conservation Development Practices</b>					
<b>Objective 7.3: Practice "phasing" on large developments and construction projects</b>					
<b>Priority Areas:</b>					
<ul style="list-style-type: none"> <li>▪ Entire watershed</li> </ul>					
a. Conduct workshop for developers and builders	<ul style="list-style-type: none"> <li>▪ Action #3: educational</li> </ul>	<ul style="list-style-type: none"> <li>▪ All communities in watershed</li> </ul>	<ul style="list-style-type: none"> <li>▪ Ohio EPA</li> <li>▪ WAWA</li> </ul>	<ul style="list-style-type: none"> <li>▪ Builders and developers learn about phasing and</li> </ul>	<ul style="list-style-type: none"> <li>▪ Workshop attendance</li> <li>▪ Participation, questions,</li> </ul>

\* bold number in brackets, [1], indicates ID number on map

Action	TMDL Action(s)/ Management Measure(s)	Stakeholder(s)	Possible Funding Source(s) (see page 4 for complete title)	Expected Improvement(s)	Evaluation
emphasizing phasing and other conservation development practices	programs of the entire Lower Cuyahoga River TMDL area	<ul style="list-style-type: none"> <li>County Engineer</li> <li>Developers</li> <li>Builders</li> </ul>	<ul style="list-style-type: none"> <li>PL-566</li> </ul>	<ul style="list-style-type: none"> <li>other conservation development practices</li> <li>Future adherence to phasing</li> </ul>	<ul style="list-style-type: none"> <li>comments, and suggestions generated at workshop</li> </ul>
b. Divide large construction projects into several small phases	<ul style="list-style-type: none"> <li>Action #2: Phase II Storm water programs of the entire Lower Cuyahoga River TMDL area</li> </ul>	<ul style="list-style-type: none"> <li>All communities in watershed</li> <li>County Engineer</li> <li>Developers</li> <li>Builders</li> </ul>		<ul style="list-style-type: none"> <li>Reduction in exposed soils</li> <li>Reduction in erosion and sedimentation</li> </ul>	<ul style="list-style-type: none"> <li>Total number of projects adopting phasing practices</li> </ul>
c. Revise community building/zoning codes to require phasing for large construction projects	<ul style="list-style-type: none"> <li>Action #2: Phase II Storm water programs of the entire Lower Cuyahoga River TMDL area</li> </ul>	<ul style="list-style-type: none"> <li>All communities in watershed</li> <li>County planning commission</li> <li>County Engineer</li> <li>Developers</li> <li>Builders</li> </ul>		<ul style="list-style-type: none"> <li>Environmentally-sound guidelines for large future developments and construction sites</li> <li>Increased likelihood of adherence to regulations by builders and developers</li> </ul>	<ul style="list-style-type: none"> <li>Total number of communities making revisions to building and zoning codes</li> <li>Total plans modified to comply with phasing amendments</li> </ul>
<b>Goal 8: Increase the understanding, awareness, participation, and cooperation among all stakeholders regarding watershed and water quality issues</b>					
<b>Objective 8.1: Foster greater communication and participation among all stakeholders regarding watershed issues</b>					
<b>Priority Areas:</b>					
<ul style="list-style-type: none"> <li>Entire Watershed</li> </ul>					
a. Establish a permanent watershed organization to continue addressing important watershed issues	<ul style="list-style-type: none"> <li>Action #3: educational programs of the entire Lower Cuyahoga River TMDL area</li> </ul>	<ul style="list-style-type: none"> <li>NEFCO</li> <li>Watershed residents</li> <li>All communities in watershed</li> <li>County Engineer</li> <li>SWCD</li> <li>Department of Development</li> <li>Ohio EPA</li> <li>ODNR</li> <li>DOES</li> <li>Cuyahoga RAP</li> <li>County Health Department</li> </ul>	<ul style="list-style-type: none"> <li>Ohio EPA</li> <li>LEPF</li> <li>GLPF</li> <li>PL-566</li> </ul>	<ul style="list-style-type: none"> <li>Establishment of a watershed-wide organization with a wide range of stakeholders</li> <li>Outlet for regular discourse on specific watershed issues</li> <li>Opportunity for citizens to actively contribute to improve the watershed</li> <li>Establishment of solid base for future support</li> <li>Increased likelihood for procuring funding for future projects</li> </ul>	<ul style="list-style-type: none"> <li>Development of the group</li> <li>Recruitment of members</li> <li>Participation of members</li> <li>Number of actions and projects completed</li> <li>Number of issues addressed</li> </ul>
b. Create Yellow Creek Watershed educational web site containing the	<ul style="list-style-type: none"> <li>Action #3: educational programs of the</li> </ul>	<ul style="list-style-type: none"> <li>NEFCO</li> <li>Watershed residents</li> </ul>	<ul style="list-style-type: none"> <li>Ohio EPA</li> <li>LEPF</li> <li>GLPF</li> </ul>	<ul style="list-style-type: none"> <li>Increased awareness on the issues facing the Yellow Creek Watershed</li> </ul>	<ul style="list-style-type: none"> <li>Number of web site visits</li> <li>Frequency of updates</li> </ul>

\* bold number in brackets, [1], indicates ID number on map

**Yellow Creek Watershed Action Plan**

Action	TMDL Action(s)/ Management Measure(s)	Stakeholder(s)	Possible Funding Source(s) (see page 4 for complete title)	Expected Improvement(s)	Evaluation
latest watershed news, contacts, photos, related links, and other information regarding the watershed c. Publish quarterly newsletters to inform watershed residents of current news and issues regarding the Yellow Creek Watershed	entire Lower Cuyahoga River TMDL area Action #3: educational programs of the entire Lower Cuyahoga River TMDL area	All communities in watershed SWCD Cuyahoga RAP NEFCO Watershed residents All communities in watershed SWCD Cuyahoga RAP	PL-566 Ohio EPA LEPP GLPF PL-566	Source of information for contacts, links, and the latest developments and initiatives facing the watershed Periodical updates on latest watershed initiatives Principal publication of the watershed organization	Comments, questions, suggestions, and other feedback sent to web site Number of issues published
<b>Goal 9:</b> Establish a storm water utility for the communities within the watershed to fund storm water management endeavors					
<b>Objective 9.1:</b> Create a storm water utility tax based on percent impervious cover					
<b>Priority Areas:</b> <ul style="list-style-type: none"> <li>Entire Watershed</li> <li>Each individual community within the watershed</li> </ul>					
a. Devise a storm water utility fee schedule based on percent imperviousness	Action #2: Phase II Storm water for the entire Lower Cuyahoga River TMDL area	Watershed residents All communities in watershed Department of Development County Engineer		Equitable funding mechanism for the operation and maintenance of the storm water infrastructure, engineering and design, and capital improvements Incentive for residents to minimize the amount of impervious cover Ensure compliance with Phase II regulations	Number of communities establishing a storm water utility Feedback from community residents
b. Incorporate GIS, aerial photography and remote sensing technology to determine the amount of impervious cover per parcel	Action #2: Phase II Storm water for the entire Lower Cuyahoga River TMDL area	Watershed residents All communities in watershed Department of Development County Engineer NEFCO		A GIS using aerial photography and remote sensing techniques would provide accurate impervious cover calculations Storm water utility fee schedule based on impervious surface calculations	Successful use of a GIS, aerial photography and remote sensing in determining the amount of impervious surface Implementation of a storm water utility tax based on percent impervious cover

\* bold number in brackets, [1], indicates ID number on map

**Yellow Creek Watershed Action Plan**

**Yellow Creek Watershed Action Plan**

Action	TMDL Action(s)/ Management Measure(s)	Stakeholder(s)	Possible Funding Source(s) (see page 4 for complete title)	Expected Improvement(s)	Evaluation
<p><b>Goal 9:</b> Establish a storm water utility for the communities within the watershed to fund storm water management endeavors</p> <p><b>Objective 9.2:</b> Create a storm water utility fee structure based on land use category and building/parking lot size</p>					
<p><b>Priority Areas:</b></p> <ul style="list-style-type: none"> <li>▪ Entire Watershed</li> <li>▪ Each individual community within the watershed</li> </ul>					
<p>a. Devise a storm water utility fee schedule for residential land use based on size of building footprint</p>	<ul style="list-style-type: none"> <li>▪ Action #2: Phase II Storm water for the entire Lower Cuyahoga River TMDL area</li> </ul>	<ul style="list-style-type: none"> <li>▪ Watershed residents</li> <li>▪ All communities in watershed</li> <li>▪ Community zoning departments</li> </ul>		<ul style="list-style-type: none"> <li>▪ Equitable funding mechanism for the operation and maintenance of the storm water infrastructure, engineering and design, and capital improvements                             <ul style="list-style-type: none"> <li>▪ Ensure compliance with Phase II regulations</li> <li>▪ Commercial/industrial properties taxed higher than individual residences</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>▪ Successful implementation of a storm water utility tax based on land use classification and size of building</li> </ul>
<p>b. Devise a storm water utility fee schedule for commercial/industrial land use based on area of building and parking lot</p>	<ul style="list-style-type: none"> <li>▪ Action #2: Phase II Storm water for the entire Lower Cuyahoga River TMDL area</li> </ul>	<ul style="list-style-type: none"> <li>▪ Watershed residents</li> <li>▪ All communities in watershed</li> <li>▪ Community zoning departments</li> </ul>		<ul style="list-style-type: none"> <li>▪ Equitable funding mechanism for the operation and maintenance of the storm water infrastructure, engineering and design, and capital improvements                             <ul style="list-style-type: none"> <li>▪ Ensure compliance with Phase II regulations</li> <li>▪ Commercial/industrial properties taxed higher than individual residences</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>▪ Successful implementation of a storm water utility tax based on land use classification and size of building and parking lot</li> </ul>

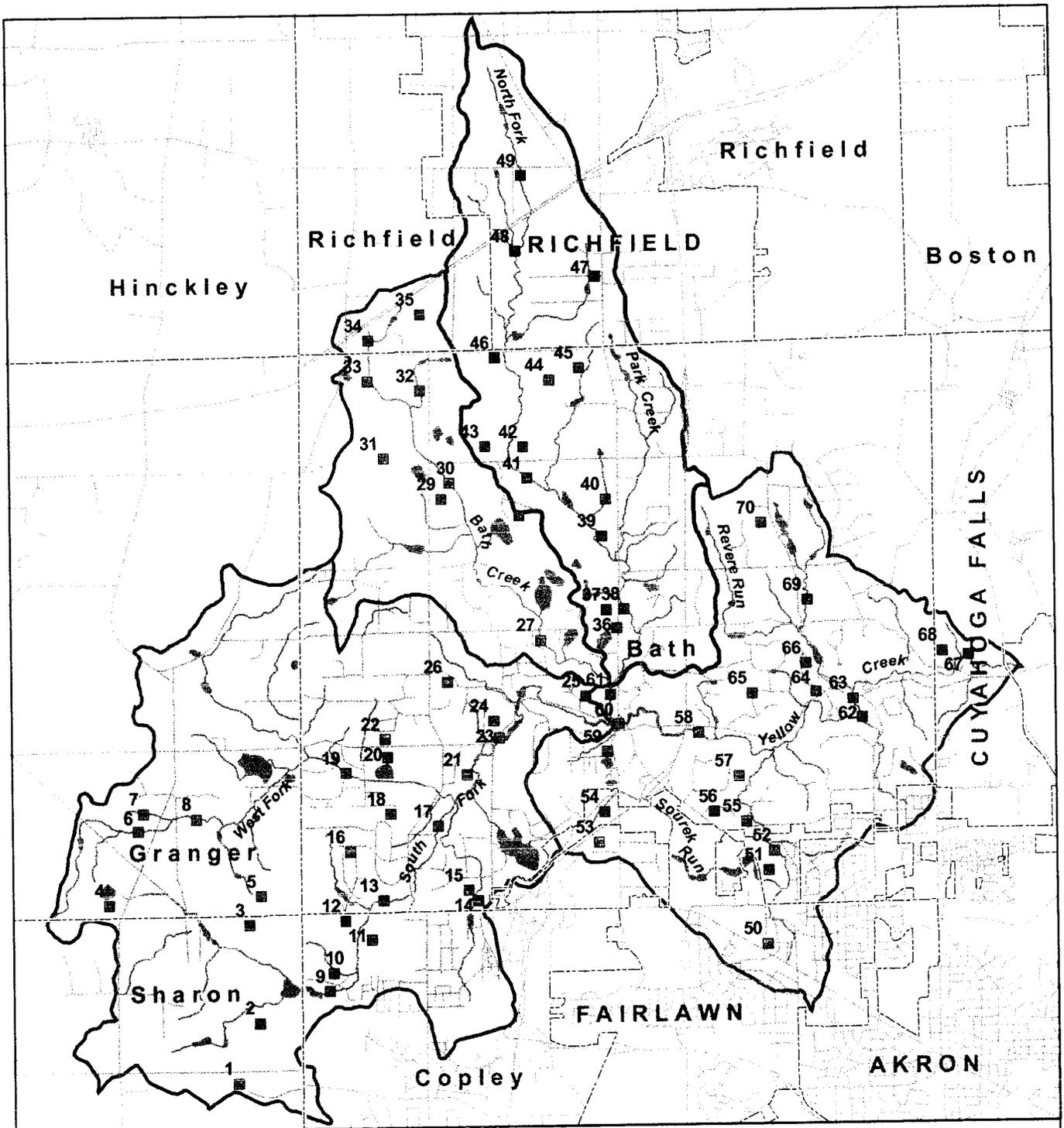
\* bold number in brackets, [1], indicates ID number on map

**Priority Area Index**

<b>Map ID</b>	<b>Location</b>	<b>Sub Watershed</b>	<b>Community</b>	<b>Action</b>
1	Ridgewood Rd.	36	Sharon Township	Preserve forested area that has erodible soils
2	S. Medina Line Rd., north of Ridgewood Rd.	36	Sharon Township	Preserve forested area that has erodible soils
3	State Route 18, west of S. Medina Line Rd.	36	Sharon Township	Restore unforested area that has erodible soils
4	State Route 18, west of State Rd.	36	Granger Township	Preserve forested groundwater recharge area
5	State Route 18/N. Medina Line Rd./ Dunsha Rd.	36	Granger Township	Restore unforested area that has erodible soil
6	West Fork, west of State Rd.	36	Granger Township	Restore stream channel; plant riparian vegetation
7	West Fork tributary, west of State Rd.	39	Granger Township	Restore stream channel; plant riparian vegetation
8	West Fork, east of Dunsha Rd.	36	Granger Township	Restore stream channel; plant riparian vegetation
9	South Fork at Swan Lake Dr.	36	Copley Township	Restore stream channel; plant riparian vegetation
10	Swan Lake Dr.	36	Copley Township	Preserve forested groundwater recharge area
11	State Route 18, south to Westmont Dr.	36	Copley Township	Preserve forested groundwater recharge area
12	South of State Route 18, west of South Fork	36	Copley Township	Restore unforested groundwater recharge area
13	South Fork at State Route 18	36	Bath Township	Restore stream channel; plant riparian vegetation
14	Akron General Medical Center, Crystal Lake Rd.	36	Bath Township	Reduce imperviousness
15	Idlebrook Dr.	36	Bath Township	Preserve forested groundwater recharge area
16	Rolling View Dr./Melody Dr.	36	Bath Township	Preserve forested groundwater recharge area
17	South Fork	36	Bath Township	Preserve forested area
18	Barnsleigh Rd.	36	Bath Township	Preserve forested groundwater recharge area
19	West Fork at Heatherleigh Dr.	36	Bath Township	Restore stream channel; plant riparian vegetation
20	Granger Rd., between Heatherleigh Dr. and Hametown Rd.	36	Bath Township	Restore unforested groundwater recharge area
21	Lois Rd./Hametown Rd.	36	Bath Township	Preserve forested groundwater recharge area
22	Granger Rd., north to S. Lakespur	36	Bath Township	Preserve forested area that erodible soils
23	West Fork, Shaw Rd. to Crystal Lake Rd.	36	Bath Township	Restore stream channel; plant riparian vegetation

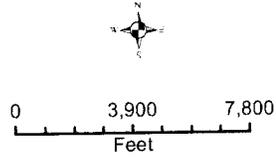
Map ID	Location	Sub Watershed	Community	Action
24	Shaw Rd./Spring Water Dr./Crystal Lake Rd.	36	Bath Township	Preserve forested area that has erodible soils
25	Hughstowne Dr.	36	Bath Township	Restore unforested area that has erodible soils
26	Shaw Rd., east of Hametown Rd.	36	Bath Township	Preserve forested area that has erodible soils
27	Bath Creek, south of Bath Rd.	37	Bath Township	Restore stream channel; plant riparian vegetation
28	Bath Nature Preserve	37	Bath Township	Restore unforested area that has erodible soils
29	Hametown Rd., south of Ira Rd.	37	Bath Township	Restore unforested area that has erodible soils
30	Bath Creek, Ira Rd. south to Derrwood Dr.	37	Bath Township	Restore stream channel; plant riparian vegetation
31	Ira Rd./Hametown Rd.	37	Bath Township	Preserve forested area that has erodible soils
32	Bath Creek Tributary, west of Hametown Rd.	37	Bath Township	Restore stream channel; plant riparian vegetation
33	Upper Bath Creek	37	Bath Township	Preserve forested area
34	Bath Creek, north of Everett Rd.	37	Richfield Township	Restore stream channel; plant riparian vegetation
35	Everett Rd., south of I-271	37	Richfield Township	Preserve forested area that has erodible soils
36	Bath Center	38	Bath Township	Reduce parking lot size; reduce imperviousness
37	Bath Rd./Cleveland-Massillon Rd.	38	Bath Township	Restore unforested groundwater recharge area
38	North Fork, Cleveland-Massillon Rd./R.B. Stout property	38	Bath Township	Restore stream channel; plant riparian vegetation
39	North Fork, west of Cleveland-Massillon Rd.	38	Bath Township	Preserve forested groundwater recharge area
40	North Fork tributary, west of Cleveland-Massillon Rd.	38	Bath Township	Restore stream channel; plant riparian vegetation
41	North Fork, south of Ira Rd.	38	Bath Township	Restore stream channel; plant riparian vegetation
42	North of Ira Rd., east of North Fork	38	Bath Township	Restore unforested area that has erodible soils
43	North of Ira Rd., west of North Fork	38	Bath Township	Restore unforested area that has erodible soils
44	Everett Rd., east of North Fork	38	Bath Township	Preserve forested area that has erodible soils
45	Everett Rd., west of Cleveland-Massillon Rd.	38	Bath Township	Preserve forested area that has erodible soils
46	Everett Rd., west of North Fork	38	Bath Township	Restore unforested groundwater recharge area
47	Richfield trucking area, Brecksville Rd.	38	Richfield Village	Reduce parking lot size; reduce imperviousness

Map ID	Location	Sub Watershed	Community	Action
48	Upper North Fork	38	Richfield Village	Preserve forested area
49	North Fork, south of Hawkins Rd., east of Roberts Dr.	38	Richfield Village	Restore stream channel; plant riparian vegetation
50	Summit Mall area	39	Fairlawn	Reduce parking lot size; reduce imperviousness
51	Ghent Rd.	39	Akron	Reduce parking lot size; reduce imperviousness
52	Lake of the Woods Dr.	39	Akron	Restore stream channel; plant riparian vegetation
53	Springside Dr.	39	Bath Township	Reduce parking lot size; reduce imperviousness
54	Embassy Pkwy.	39	Fairlawn	Reduce parking lot size; reduce imperviousness
55	Sourek Rd./Berrywood Dr.	39	Bath Township	Preserve forested groundwater recharge area; preserve forested area that has erodible soils
56	Ghent Rd., north side	39	Bath Township	Preserve forested groundwater recharge area
57	West Point Dr./Sourek Run	39	Bath Township	Preserve forested area that has erodible soils
58	Yellow Creek, east of I-77	39	Bath Township	Plant riparian vegetation
59	Wye Rd./Sanctuary Rd.	39	Bath Township	Restore unforested area that has erodible soils
60	Ghent Village	39	Bath Township	Reduce parking lot size; reduce imperviousness
61	North Fork, confluence with Yellow Creek	38	Bath Township	Restore stream channel; plant riparian vegetation
62	South Revere Run	39	Bath Township	Preserve forested area that has erodible soils
63	Yellow Creek, at Yellow Creek Rd.	39	Bath Township	Restore stream channel; plant riparian vegetation
64	Yellow Creek	39	Bath Township	Preserve forested area
65	Round Hill Dr.	39	Bath Township	Restore unforested area that has erodible soils
66	Revere Run	39	Bath Township	Preserve forested area
67	Yellow Creek, north of Bath Rd.	39	Cuyahoga Falls	Restore stream channel; plant riparian vegetation
68	Bath Rd./Cynthia Ln.	39	Cuyahoga Falls	Preserve forested area that has erodible soils
69	North Revere Run	39	Bath Township	Preserve forested area that has erodible soils
70	Revere Rd./Brookview Dr.	39	Bath Township	Restore unforested area that has erodible soils

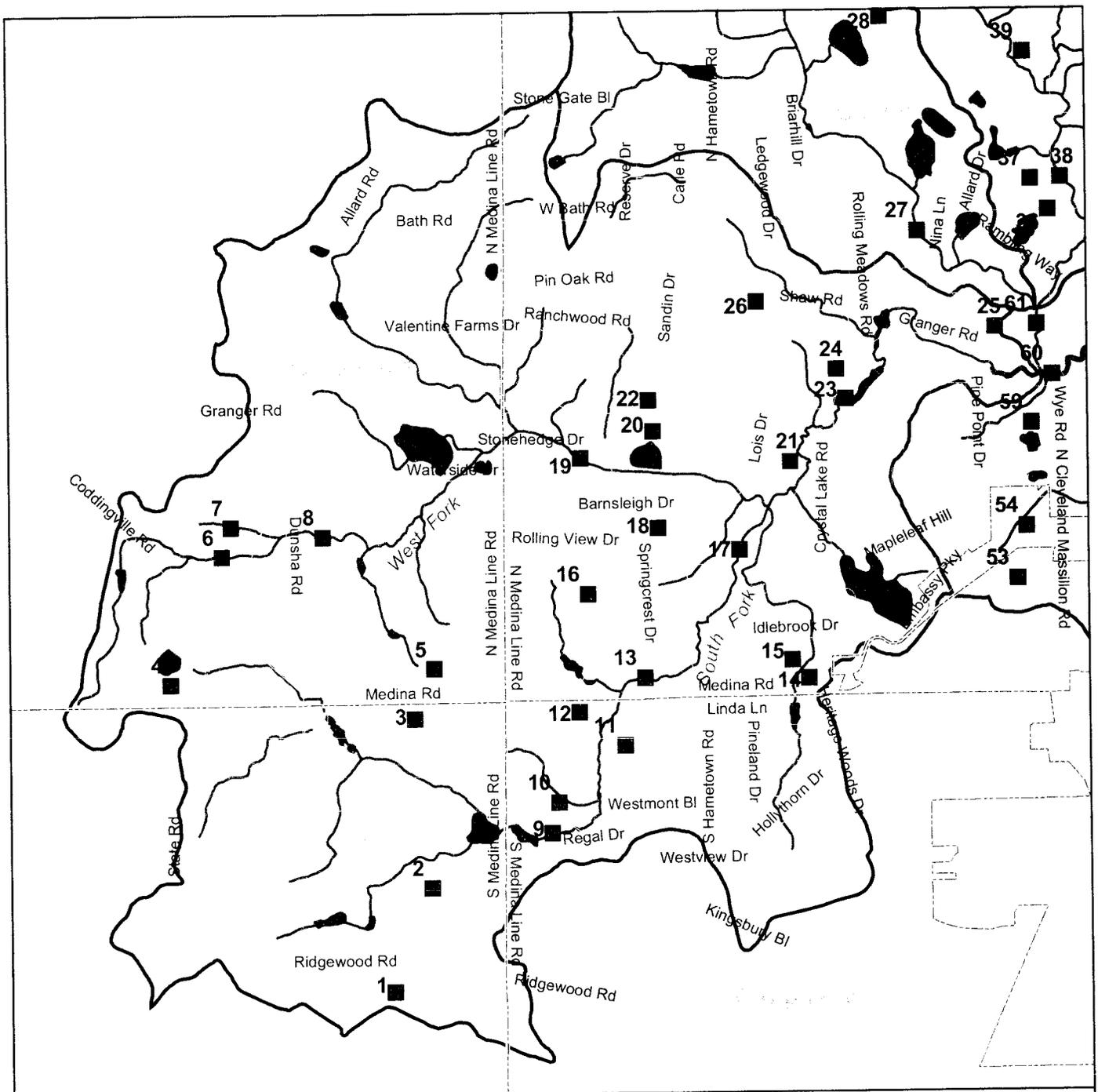


### Yellow Creek Subwatersheds

-  1 Priority Area
-  Road
-  Community Boundary
-  Stream
-  Lake
-  Subwatershed 36
-  Subwatershed 37
-  Subwatershed 38
-  Subwatershed 39

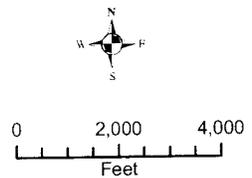


Northeast Ohio Four County Regional Planning and Development Organization, 2003

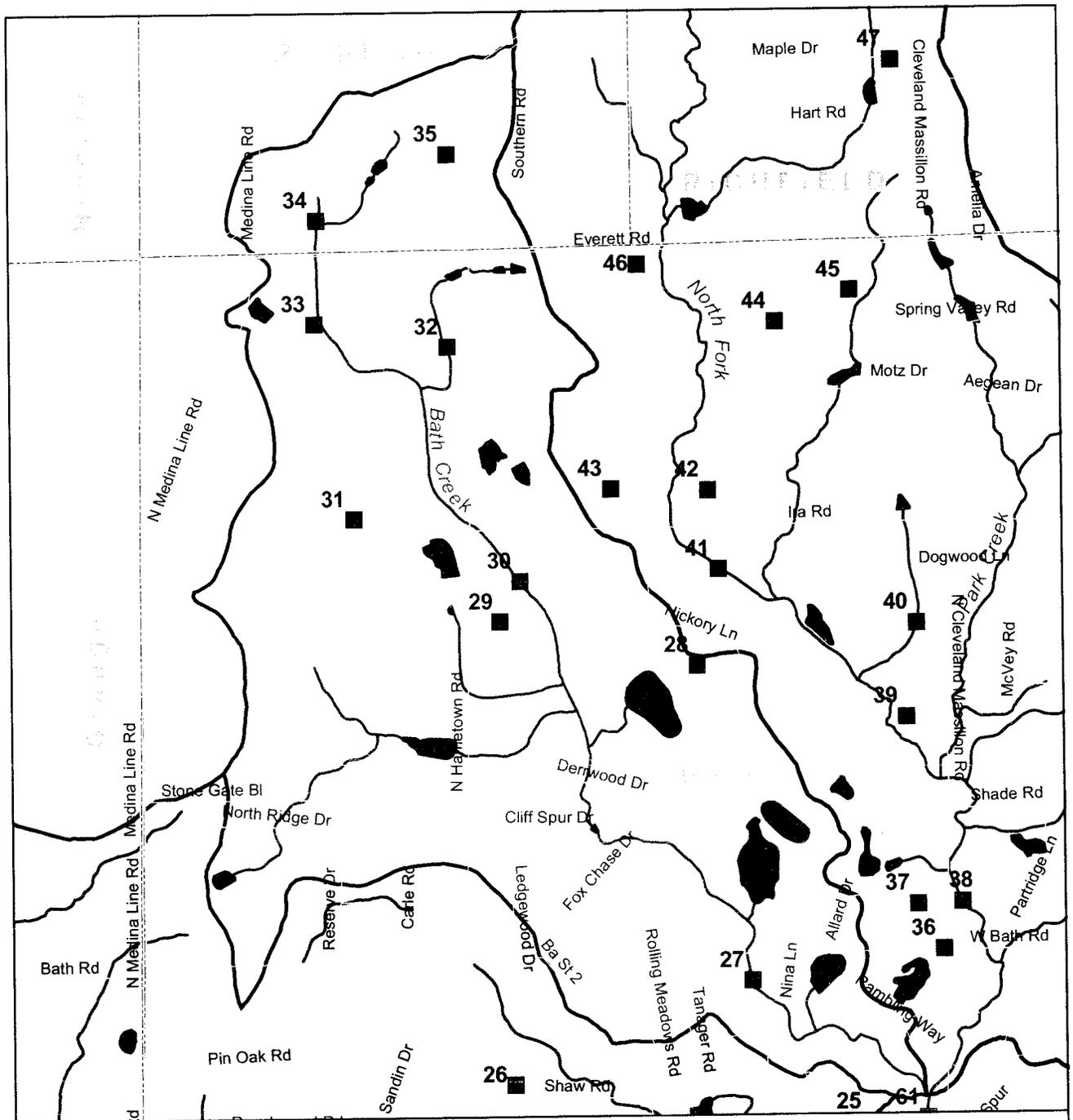


### Subwatershed 36

- |   |                    |   |                 |
|---|--------------------|---|-----------------|
|  | Priority Area      |  | Subwatershed 36 |
|  | Road               |  | Subwatershed 37 |
|  | Watershed Boundary |  | Subwatershed 38 |
|  | Community Boundary |  | Subwatershed 39 |
|  | Stream             |  | Other Watershed |
|  | Lake               |   |                 |

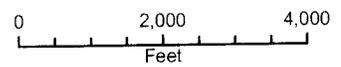


Northeast Ohio Four County Regional Planning and Development Organization, 2003; Sources: Summit County and Medina County Orthophotos, 2000



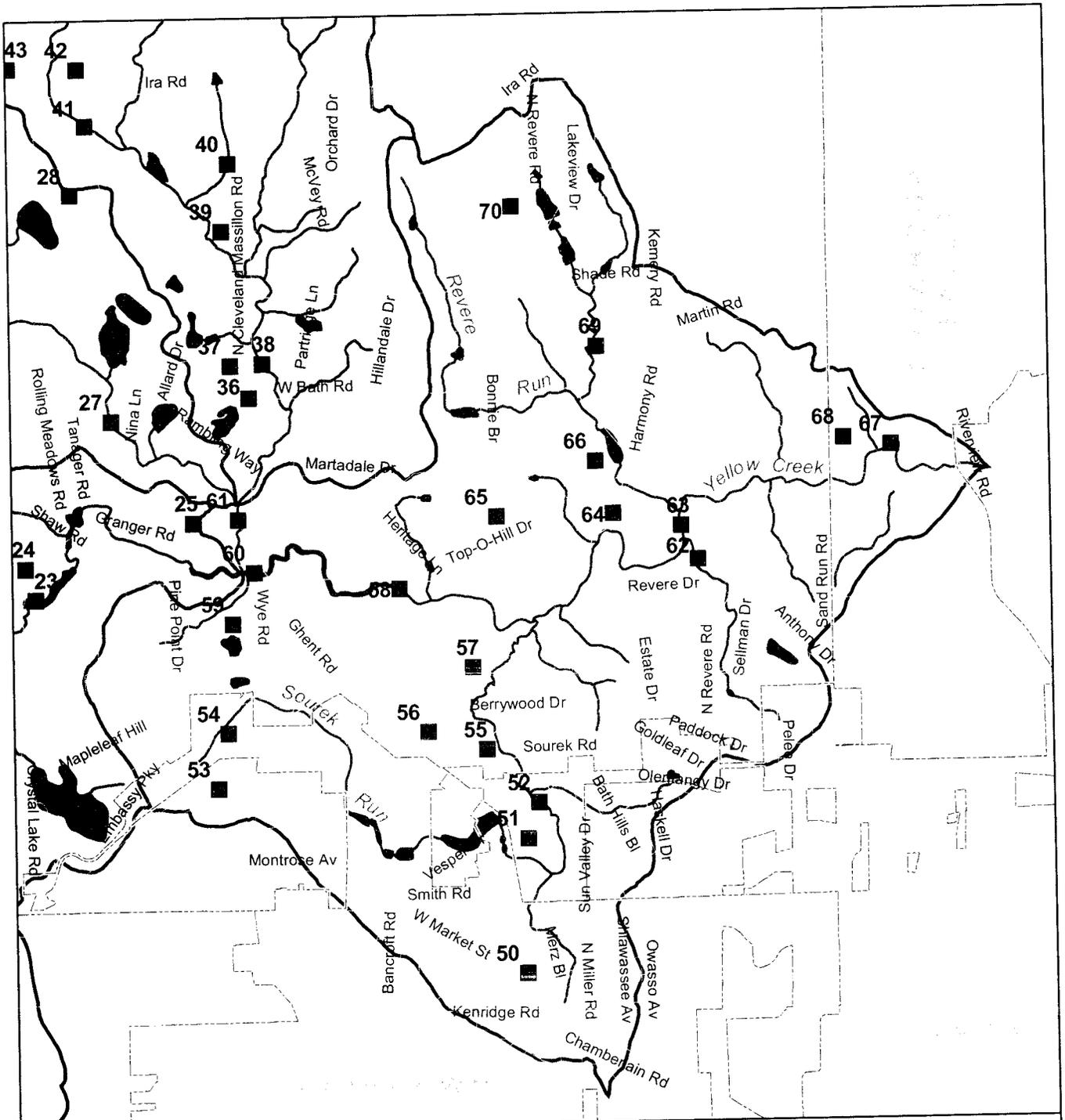
### Subwatershed 37

- |  |   |
|--|---|
|  Priority Area      |  Subwatershed 36 |
|  Road               |  Subwatershed 37 |
|  Watershed Boundary |  Subwatershed 38 |
|  Community Boundary |  Subwatershed 39 |
|  Stream             |  Other Watershed |
|  Lake               |   |



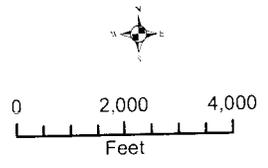
Northeast Ohio Four County Regional Planning and Development Organization, 2003; Sources: Summit County and Medina County Orthophotos, 2000

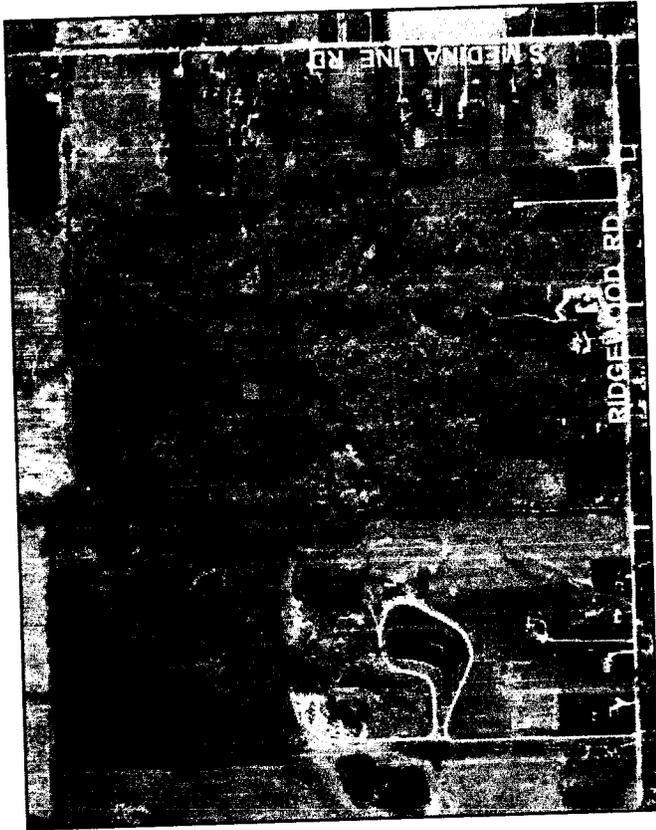




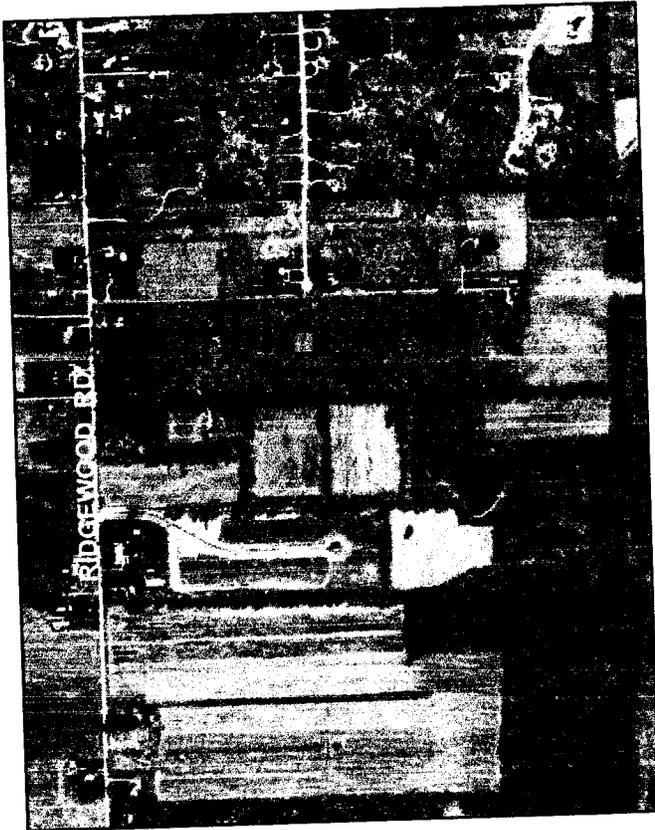
### Subwatershed 39

- Priority Area
- Road
- Watershed Boundary
- Community Boundary
- Stream
- Lake
- Subwatershed 36
- Subwatershed 37
- Subwatershed 38
- Subwatershed 39
- Other Watershed





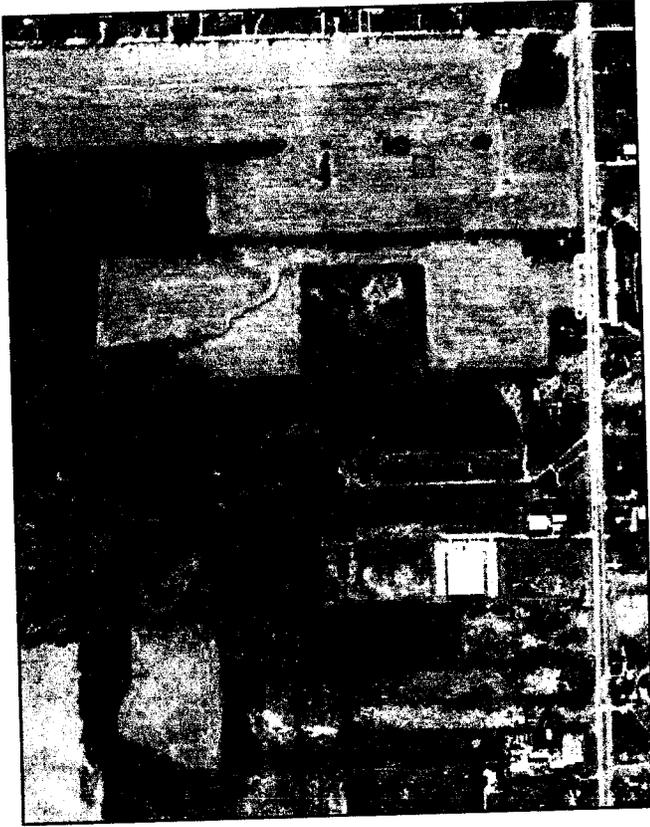
Priority Area 2



Priority Area 1



Priority Area 3



Priority Area 5



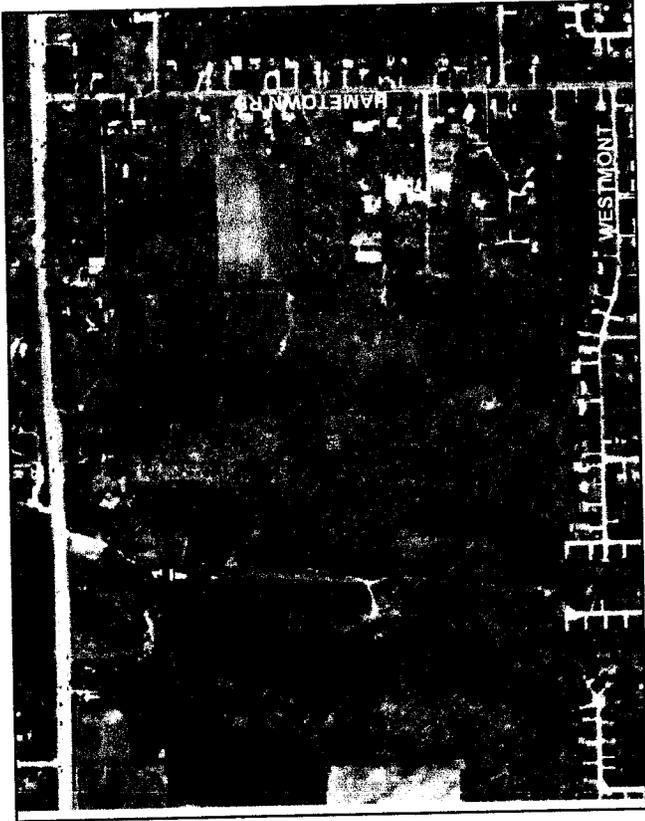
Priority Area 8



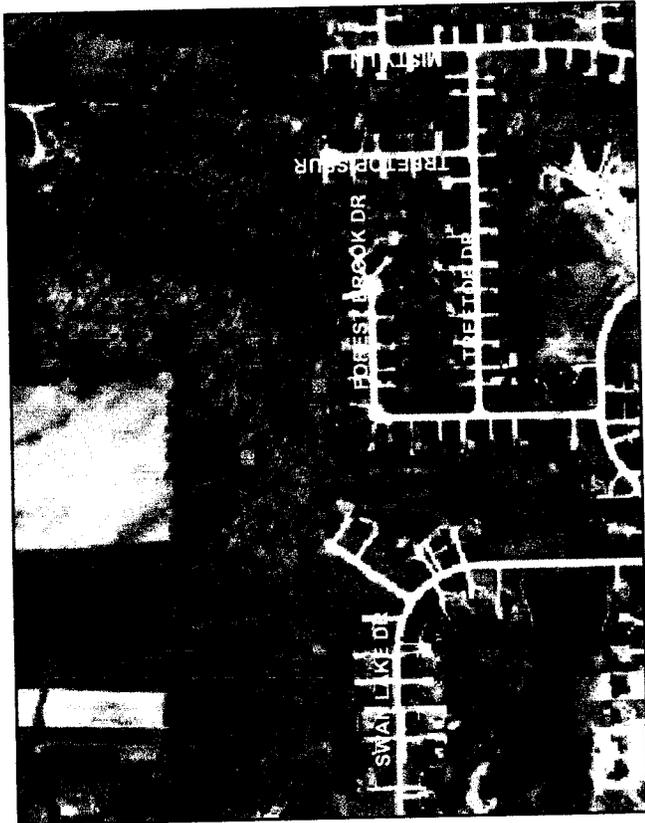
Priority Area 4



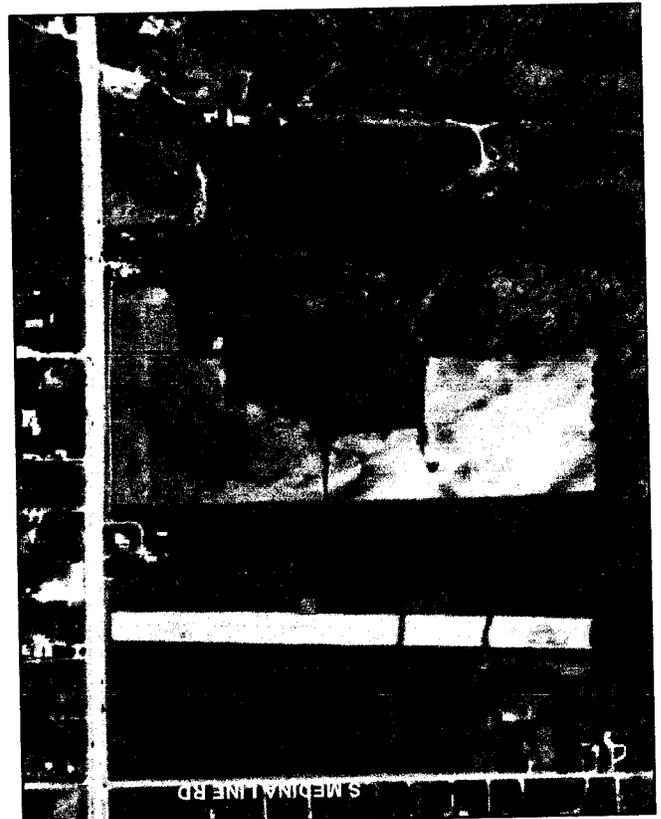
Priority Areas 6 and 7



Priority Area 11



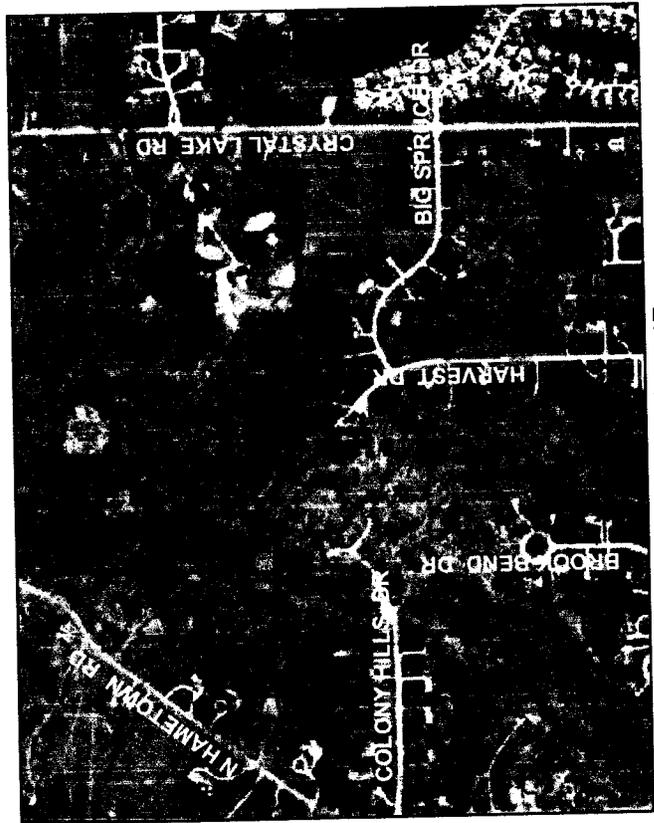
Priority Areas 9 and 10



Priority Area 12



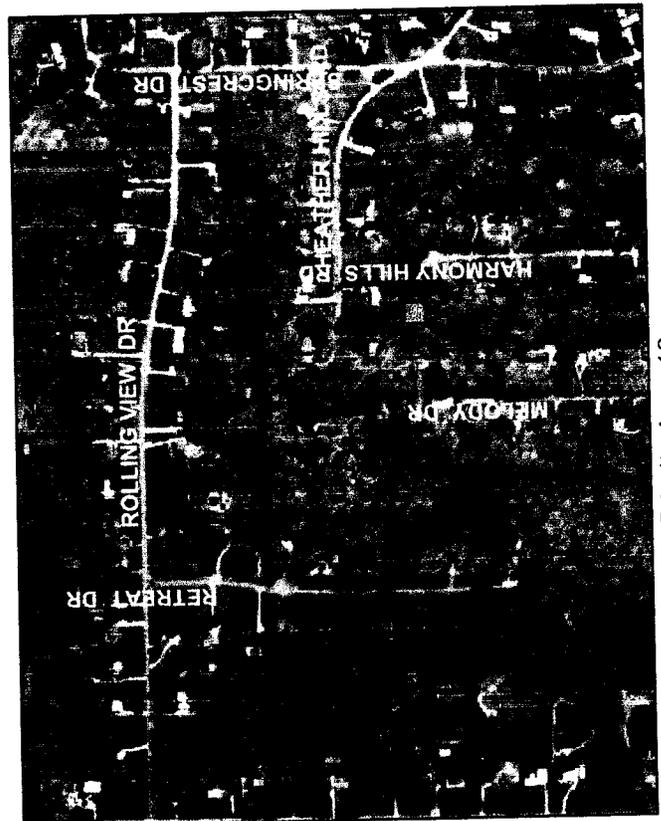
Priority Areas 14 and 15



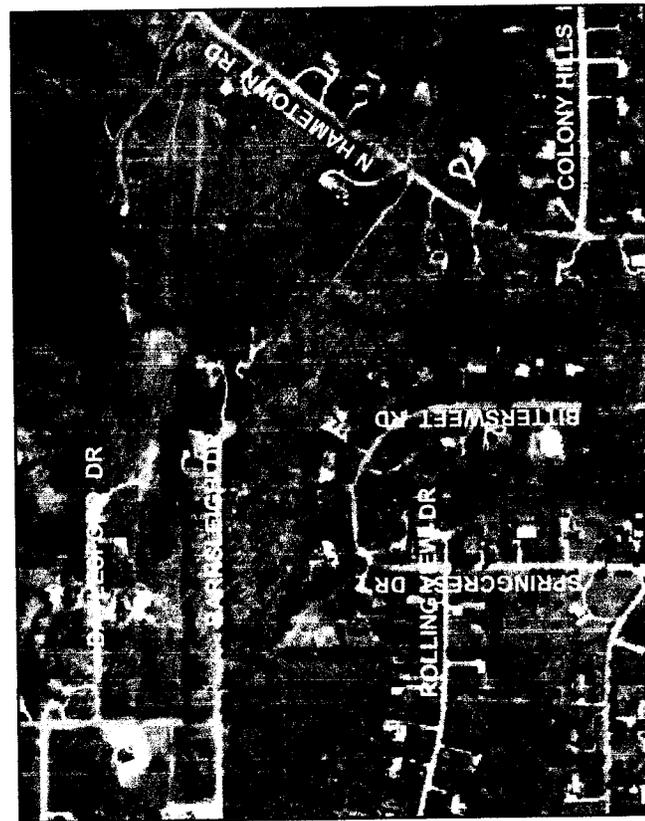
Priority Area 17



Priority Area 13



Priority Area 16



Priority Area 18



Priority Area 19



Priority Area 25



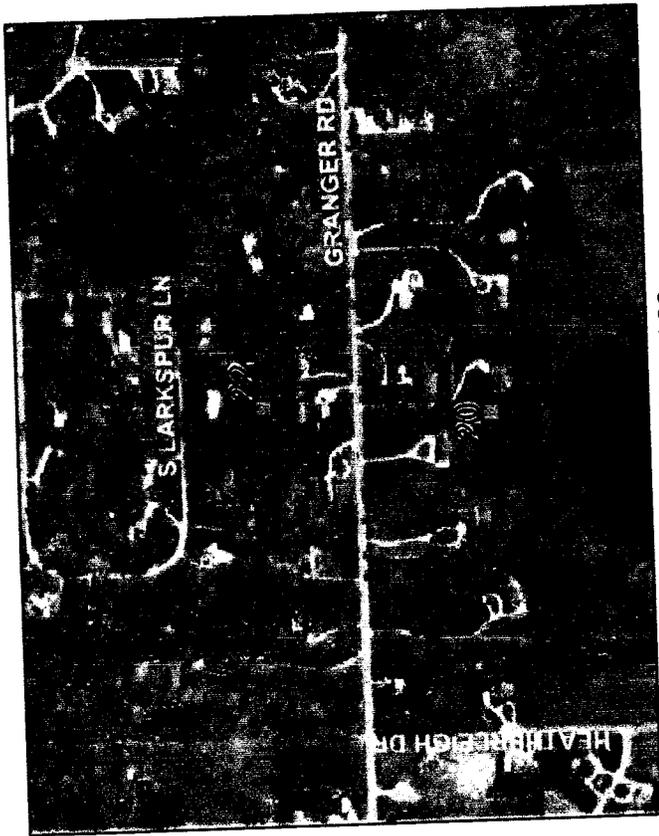
Priority Area 27



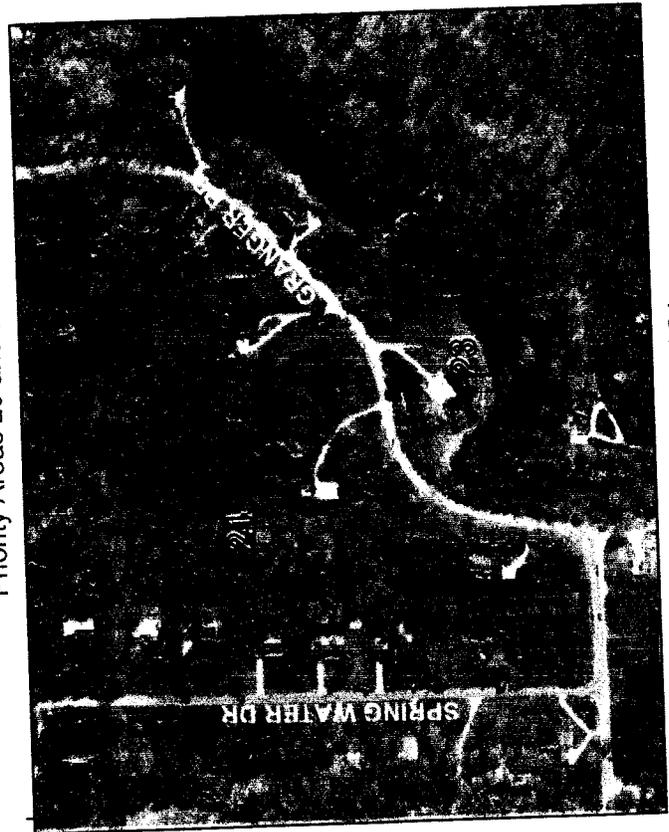
Priority Area 21



Priority Area 26



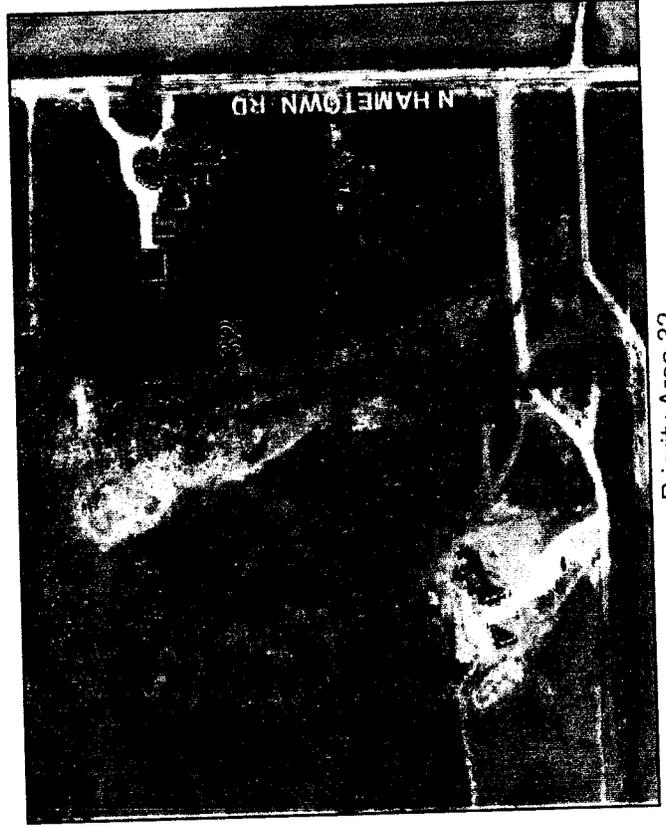
Priority Areas 20 and 22



Priority Areas 23 and 24



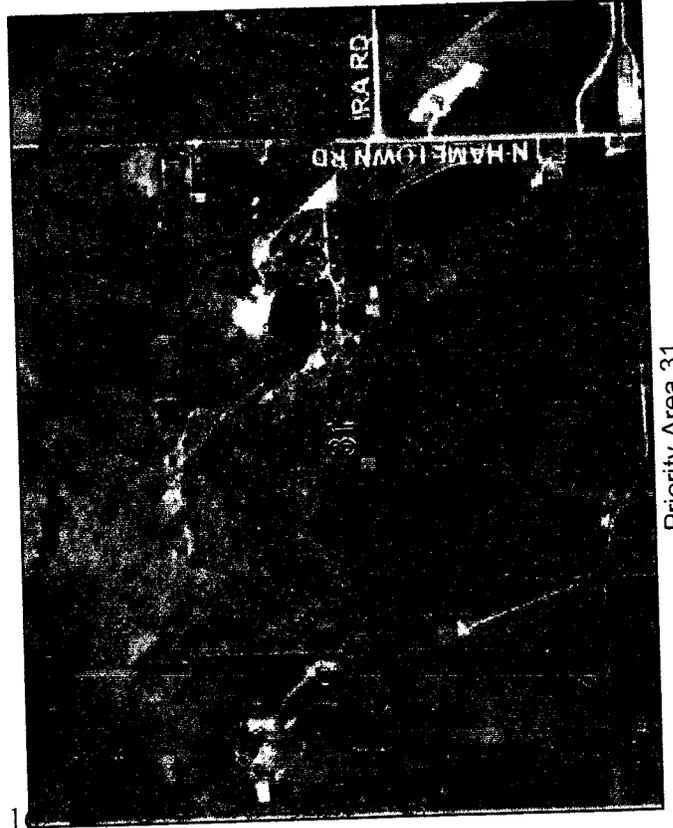
Priority Areas 29 and 30



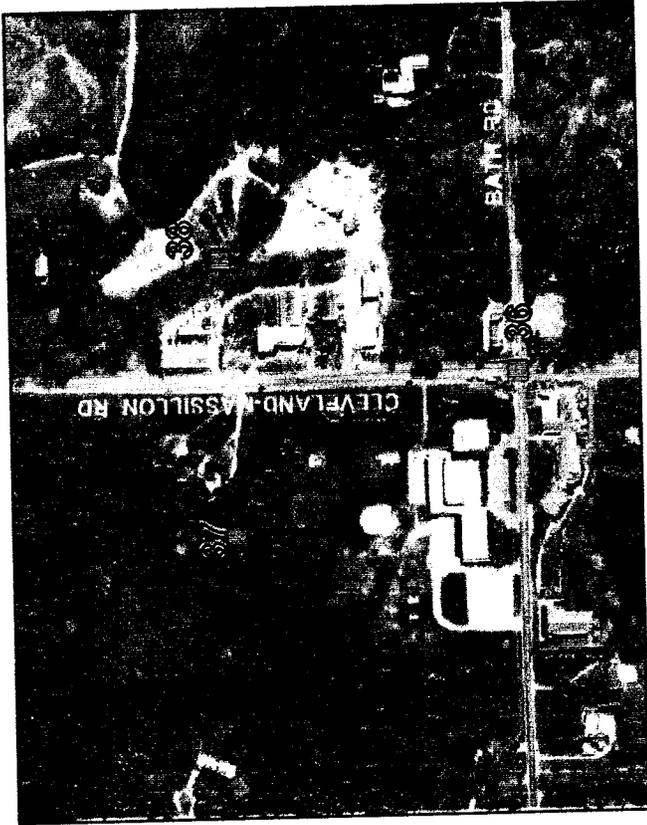
Priority Area 32



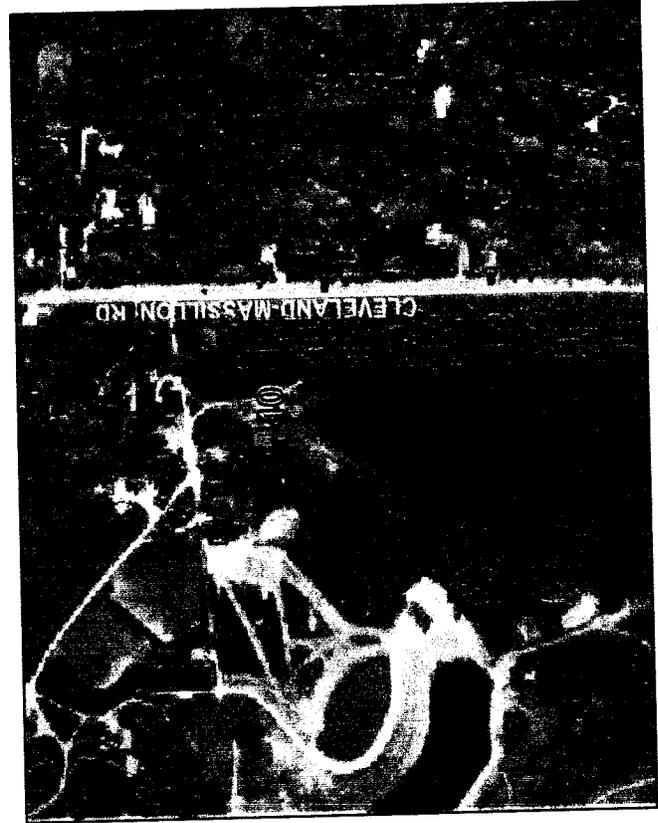
Priority Areas 28 and 41



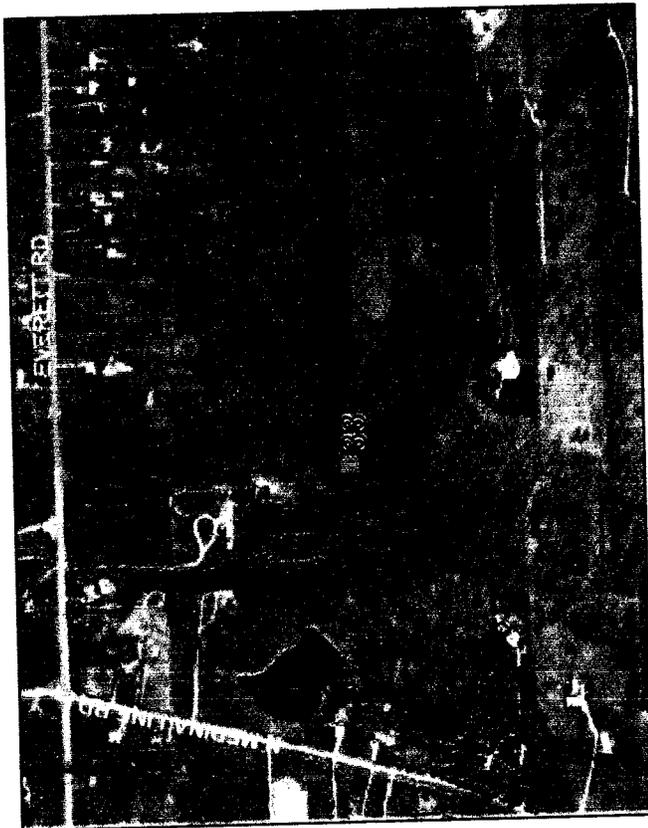
Priority Area 31



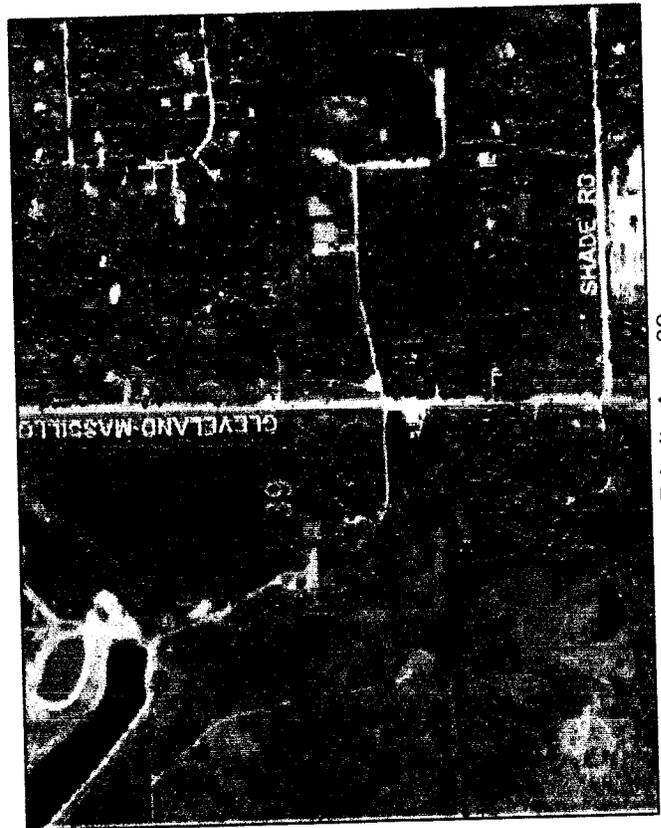
Priority Areas 36, 37 and 38



Priority Area 40



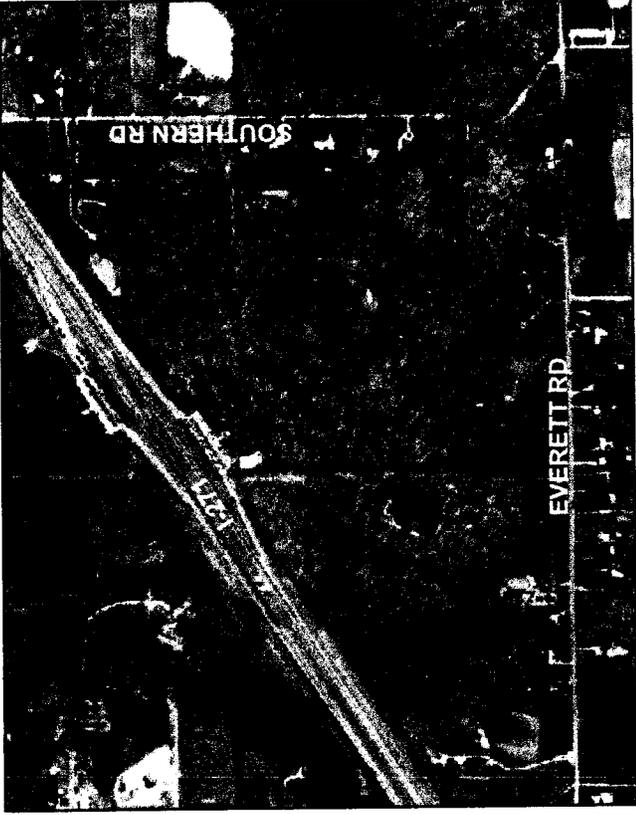
Priority Area 33



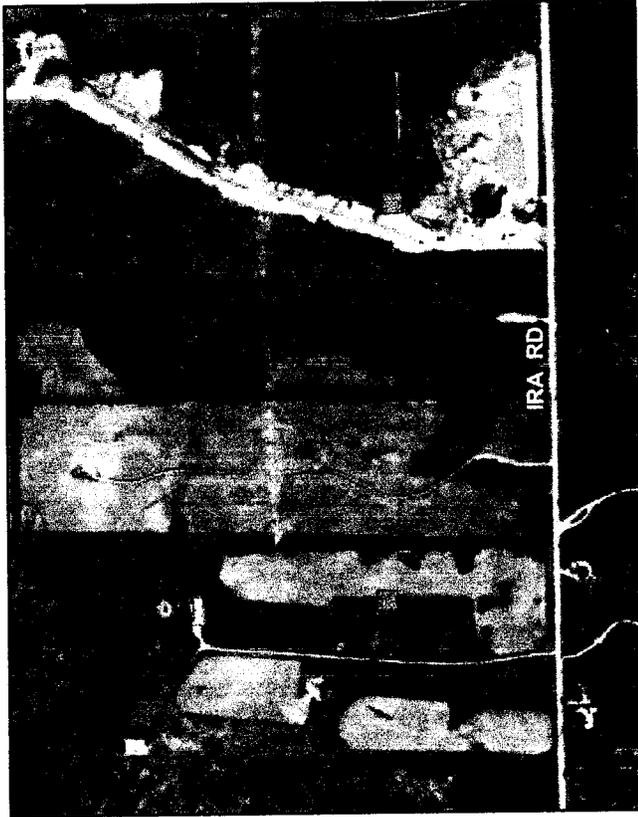
Priority Area 39



Priority Area 34



Priority Area 35



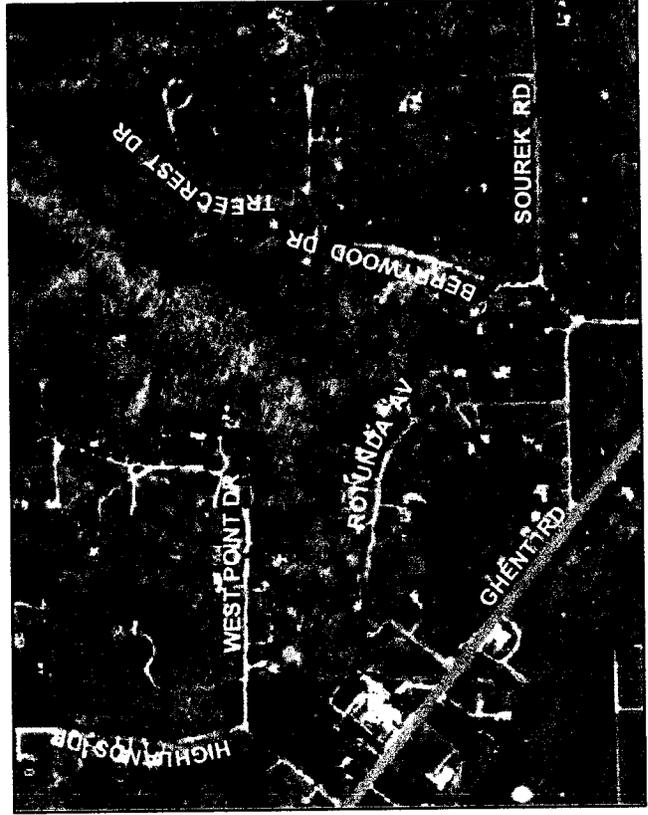
Priority Areas 42 and 43



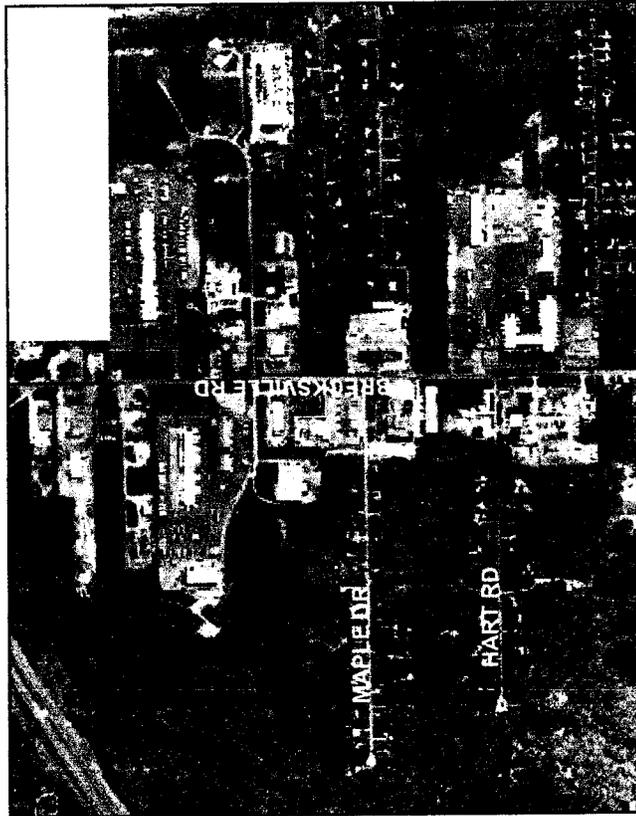
Priority Areas 44, 45 and 46



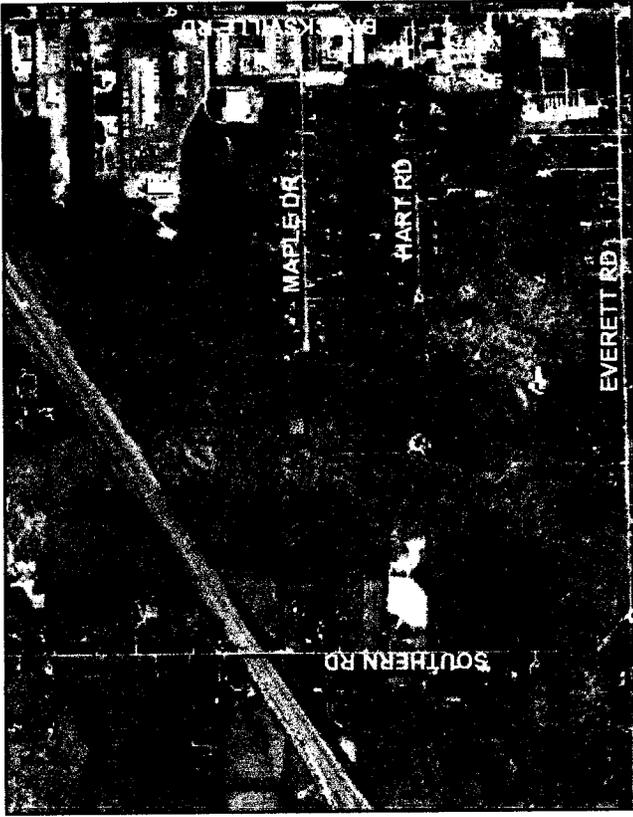
Priority Area 53



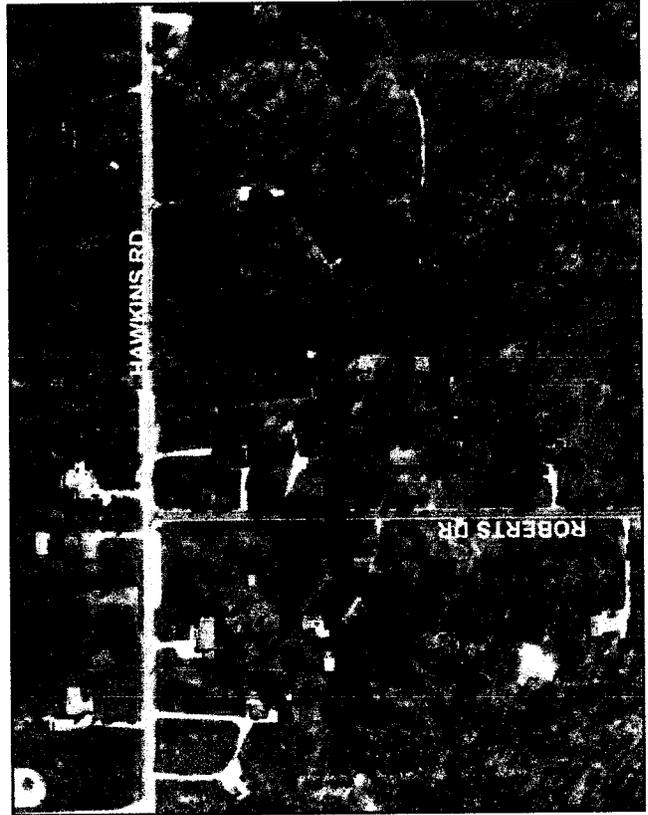
Priority Areas 55, 56 and 57



Priority Area 47



Priority Area 48



Priority Area 49



Priority Area 50



Priority Area 54



Priority Areas 51 and 52



Priority Areas 59 and 60



Priority Areas 64, 65 and 66



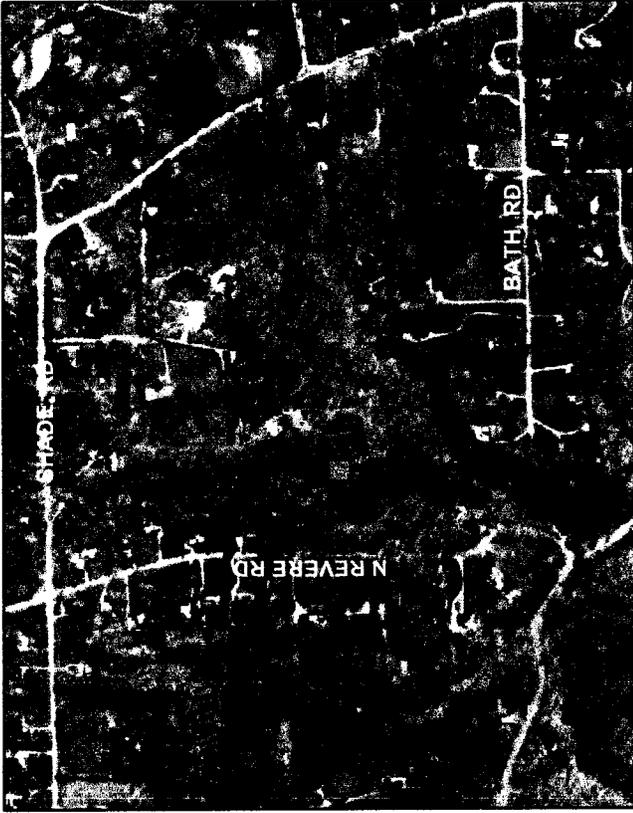
Priority Area 58



Priority Area 61



Priority Area 62 and 63



Priority Area 69



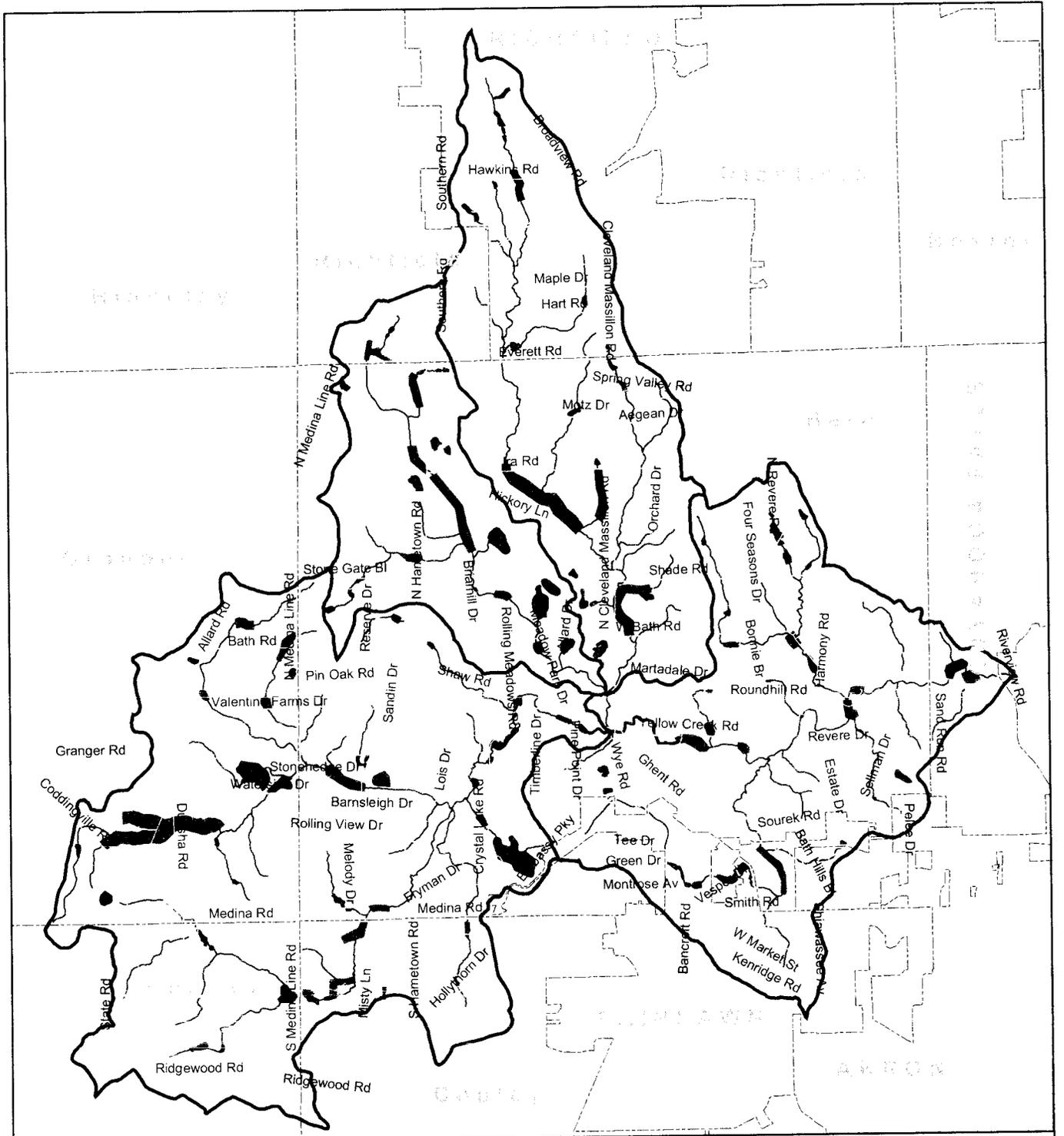
Priority Area 70



Priority Area 67

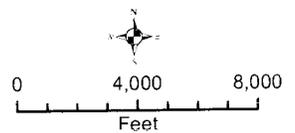


Priority Area 68

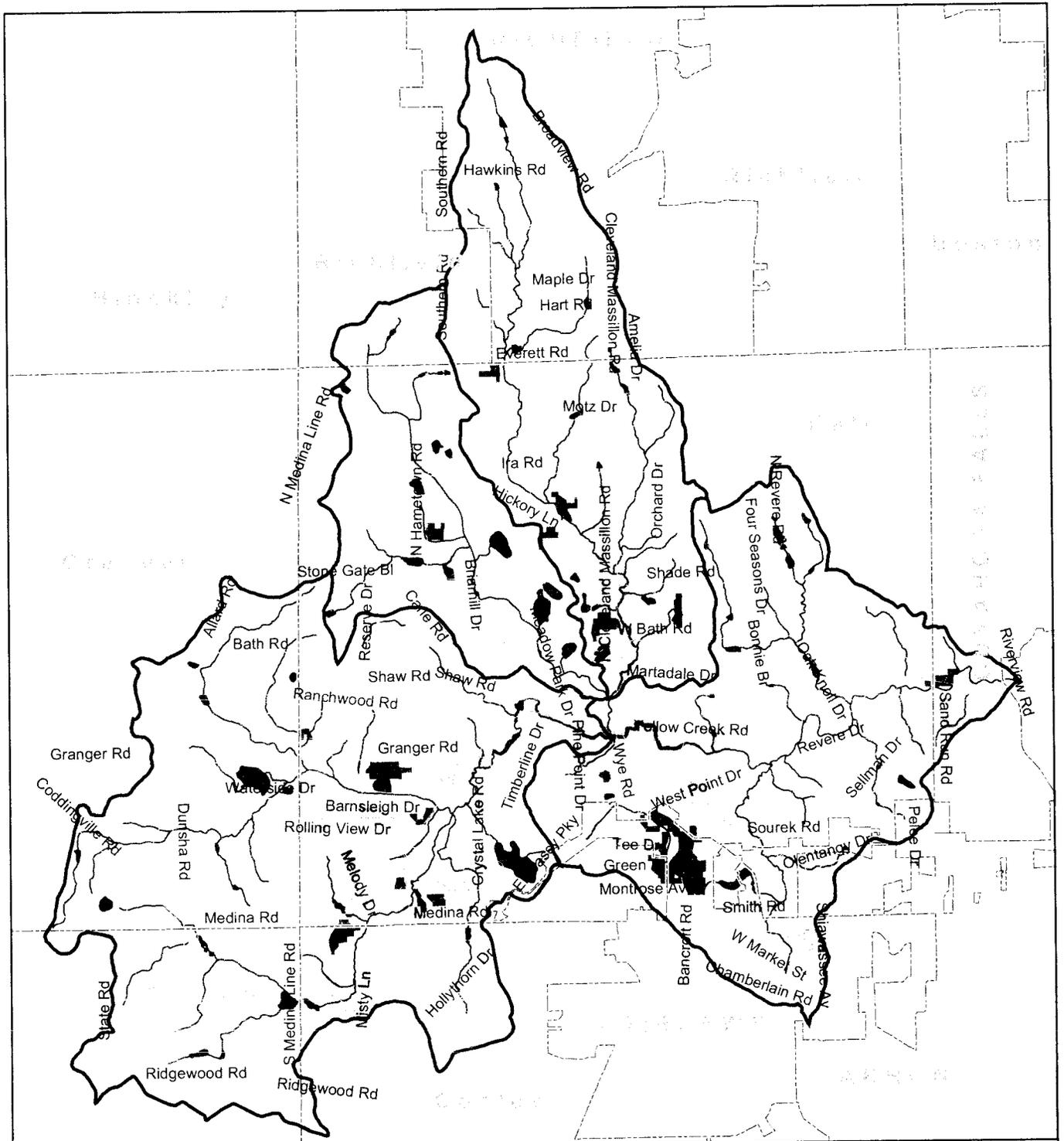


### Areas Lacking Sufficient Riparian Vegetation

- Road
- Stream
- Subwatershed Boundary
- Community
- Lake
- Area with Insufficient Riparian Vegetation

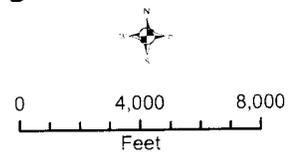


Northeast Ohio Four County Regional Planning and Development Organization, 2003; Sources: Summit County and Medina County Orthophotos, 2000

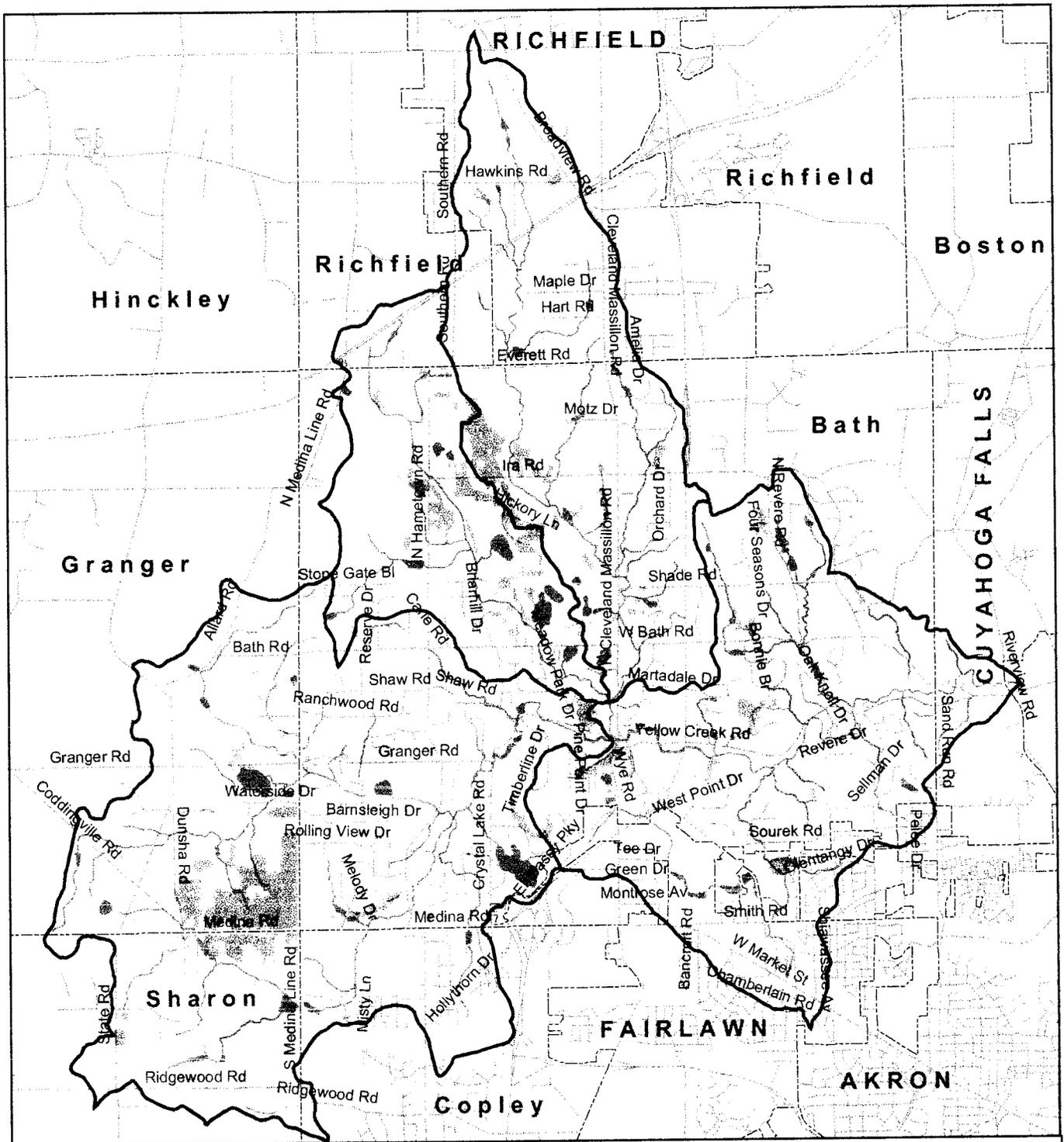


### Areas of Potential Groundwater Recharge

- Road
- Stream
- Subwatershed Boundary
- - - Community
- Lake
- Forested, Groundwater Recharge
- Unforested, Groundwater Recharge

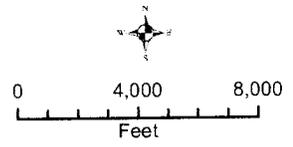


Northeast Ohio Four County Regional Planning and Development Organization, 2003; Sources: Ohio Department of Natural Resources, Division of Water, Groundwater Resources Section, 1994; NOACA, 1977



### Areas with Potentially Highly Erodible Soils

- Road
- Stream
- Subwatershed Boundary
- Community
- Lake
- Forested, Erodible
- Unforested, Erodible



Northeast Ohio Four County Regional Planning and Development Organization, 2003; Sources: Ohio Department of Natural Resources, Division of Real Estate and Land Management; NOACA, 1977; Soil Surveys of Medina and Summit Counties; Cleveland Metro Parks, 1994

## **APPENDIX H**

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