Activities and Accomplishments in the Maumee Area of Concern

DOCUMENT SUMMARY

Activities and Accomplishments in the Maumee Area of Concern (1991-2001) is a status report on the various activities, programs, events and policies that have been implemented throughout the Maumee AOC over the last 10 years (or more). It is intended to serve as a summary of actions completed by everyone that lives, works or sets policy to improve water quality in the Maumee Area of Concern (AOC).

The *Activities and Accomplishments Report* includes significant efforts that correspond to 224 suggested actions in the *Maumee RAP Recommendations Report* (1991). Over 350 activities, programs and events have taken place ranging from an inexpensive, one time workshop to a multi-million dollar landfill closure. The *Activities and Accomplishments Report* highlights efforts to address the water quality improvement needs of the Maumee AOC including such activities as:

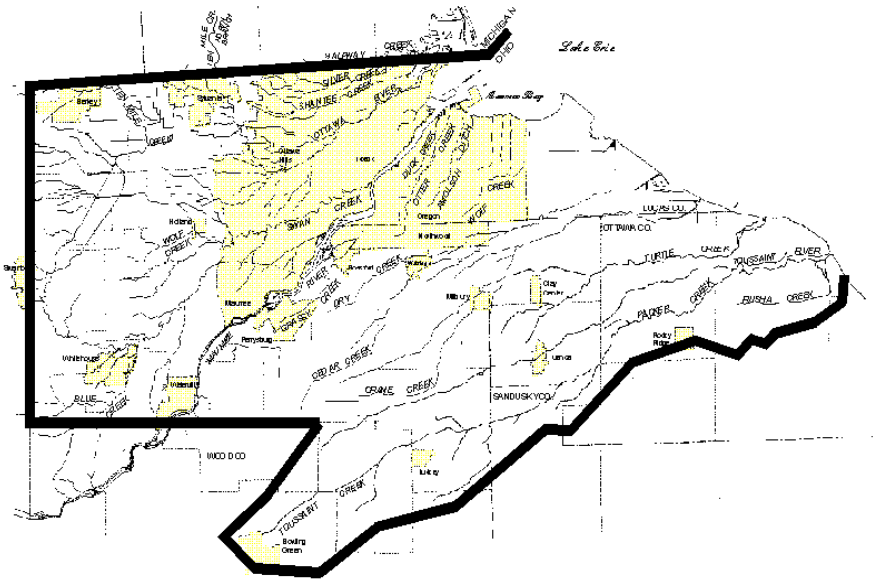
- combined sewer overflow abatement projects
- brownfield remediation
- installation of best management practices to control agricultural or urban runoff
- habitat and greenspace restoration or preservation
- sampling and analysis of sediment, fish, and water conditions
- publications
- workshops
- streambank clean ups
- and many others.

It should be noted that the *Activities and Accomplishments Report* was not intended to be read cover to cover, but to be used as a handy reference. The Recommendations and Accomplishments Table in the front half of the report cites each suggested action excerpted from the 1991 *Recommendations Report*. The table also includes columns to reference:

- title of the activity
- date it occurred
- level of participation (if any) by the Maumee RAP
- beneficial use affected
- page number of the activity's description.

The second half of the report is comprised of narrative Activity Descriptions for each activity, event, or program, including lead organizations and collaborators.

The Maumee RAP is a partnership of citizens, government agencies, businesses, and industries working to restore the health of our area's streams. Since 1987, the Maumee RAP has been focused on the improving water quality in the Maumee Area of Concern; one of 43 internationally designated areas in the Great Lakes due to its degraded water quality.



The *Maumee RAP Recommendations Report* (1991) served as a "plan of action" for the Maumee RAP, its partners, and other organizations throughout the Maumee AOC. The *Activities and Accomplishments Report* will be the foundation for the development of the Maumee RAP's next Recommendations Report which will help guide our region's water quality improvement activities through the next decade and beyond.

This report is available as an Adobe Acrobat (.pdf) file on the Maumee RAP website (www.maumeerap.org). Copies are also available on CD-Rom or in hard copy (limited supply) by contacting Cherie Blair, Maumee RAP Coordinator, Ohio EPA, 347 N. Dunbridge Road, Bowling Green, Ohio 43402, 419/373-3010, or cherie.blair@epa.state.oh.us.

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Maumee RAP

Maumee RAP
PARTNERING FOR CLEAN STREAMS

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ACTIVITIES AND ACCOMPLISHMENTS IN THE MAUMEE AREA OF CONCERN

1991-2001

Maumee RAP
PARTNERING FOR CLEAN STREAMS

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ACTIVITIES AND ACCOMPLISHMENTS IN THE MAUMEE AREA OF CONCERN

1991-2001

Released April 2002

Published by the ***Maumee RAP***

In Conjunction with ***Hull & Associates, Inc.***

This publication was funded through a grant from the Ohio EPA and US EPA. The information contained in this document is believed to be accurate. The Maumee RAP and its Partners disclaim liability for any omissions or errors. This report is available as an Adobe Acrobat (.pdf) file on the Maumee RAP website (www.maumeerap.org). Copies are also available by contacting the Maumee RAP Coordinator, Ohio EPA Northwest District Office, 347 N. Dunbridge Road, Bowling Green, Ohio 43402, (419)352-8461, or cherie.blair@epa.state.oh.us.

ACKNOWLEDGEMENTS

Thanks to the hundreds of volunteers who have dedicated years to conducting the activities that have led to the many accomplishments highlighted in this document.

Through this collaborative effort, these activities have led to improved water quality in our Area of Concern.

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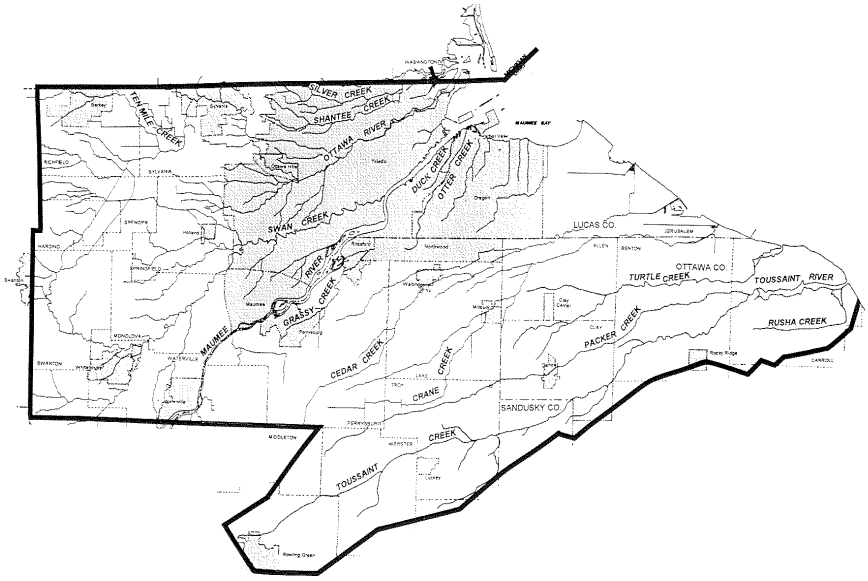
PREFACE

Overview of the Maumee RAP

The Maumee RAP is a partnership of citizens, government agencies, businesses and industries working to restore the health of our area's streams. However, the Maumee RAP is more than just a local organization, it is founded on an international philosophy, process and program established more than 15 years ago.



As a binational organization, the International Joint Commission recognizes that no single individual, organization or activity intentionally damaged the Great Lakes. So in 1985 they designated the Maumee Area of Concern (AOC) as one of the 43 international "areas of concern" due to degraded water quality. The original philosophy for restoring these areas is still the same today, an ecosystem approach. This approach considers all pollution sources and their impacts on the whole environment.

The process established by the International Joint Commission for cleaning up these "areas of concern" included the development of "remedial action plans". Communities were encouraged to create comprehensive plans for water quality improvements. The Maumee RAP organization then formed in 1987 as a community effort to restore our area's waterways to "fishable and swimmable" conditions.

The Maumee RAP Committee and its Action Groups (or sub-committees) involve a diverse cross-section of environmentally concerned businesses, industries, government agencies, non-profit organizations, educators, and citizens who are working together on activities to make a future for our area with clean rivers and streams. The Maumee RAP Committee makes the official decisions for the organization and provides general program oversight. The Maumee RAP Committee has eight action groups which are integral to the progress of the Maumee RAP. These action groups are further classified as Issue, Watershed, and Support Action Groups. The Issue Action Groups address specific issues that effect the Maumee AOC, such as open space and wetlands, agricultural and urban concerns, and dumps and landfills. Watershed Action Groups focus on a comprehensive watershed approach to cleaning up a specific watershed, such as Swan Creek and the Ottawa River. The Support Action Groups assist the other Maumee RAP action groups and the Maumee RAP Committee to more effectively accomplish their goals in manner consistent with Maumee RAP guidelines and objectives. These groups assist mostly with public outreach, education and finance issues.

The partners involved in the Maumee RAP all share a common goal of taking the remedial action plan beyond words and a plan, and putting it into action for the benefit of all who live, work and play in our watersheds. More information about the Maumee RAP, as well as information on each action group, their activities and meeting times, are available at *http://www.maumeerap.org* or by contacting one of

the many Maumee RAP partners in the Appendix of this document.

Beneficial Use Impairments

When the Maumee AOC was first designated, it was primarily due to issues associated with agricultural runoff. Upon further investigation, it was realized that the Maumee AOC had many more issues that needed to be addressed to allow for the restoration of our area to fishable and swimmable conditions. As part of the process to develop remedial action plans, the IJC established beneficial impairments to assist communities in defining their problems. The Maumee RAP has identified that 10 of the 14 beneficial use impairments need to be addressed in the Maumee AOC:

Beneficial Use Impairments

- ✓ 1. Restrictions on fish and wildlife consumption
- 2. Tainting of fish and wildlife flavor
- ✓ 3. Degradation of fish and wildlife populations
- ✓ 4. Fish tumors or other deformities
- 5. Bird or animal deformities
- ✓ 6. Degradation of benthos
- ✓ 7. Restrictions on dredging activities
- ✓ 8. Eutrophication or undesirable algae
- ✓ 9. Restrictions on drinking water consumption, or taste and odor problems
- ✓ 10. Beach closings
- ✓ 11. Degradation of aesthetics
- 12. Added cost to agriculture or industry
- 13. Degradation of phytoplankton and zooplankton populations
- ✓ 14. Loss of fish and wildlife habitat

These environmental problems are caused by toxic substances, bacterial contamination, nutrient enrichment, and landfill leachate. Sources of these pollutants include urban storm water runoff, commercial and residential development, municipal and industrial discharges, combined sewer overflows, sanitary sewer overflows, wastewater treatment plant bypasses, hazardous waste disposal sites, and agricultural runoff. The Maumee RAP continues to advocate or sponsor programs and activities to address these issues, which are described in this *Activities and Accomplishments in the Maumee Area of Concern* report.

INTRODUCTION

Activities and Accomplishments in the Maumee Area of Concern is a status report on the various activities, programs, events, and policies that have taken place over the last 10 years or more throughout our AOC. This is not just a listing of Maumee RAP events, rather it is intended to serve as a summary of actions completed by everyone that lives, works or sets policy to improve water quality.

The Maumee RAP published their original *Recommendations Report* in 1991; a culmination of three years of planning and research completed by a wide representation of stakeholders. The 1991 *Recommendations Report* has served as a "plan of action" for the Maumee RAP and its partners. This *Activities & Accomplishments Report* provides baseline information for measuring what has been done and what still needs to be addressed. This report is the foundation for the Maumee RAP's next *Recommendations Report* which will guide our region's activities through the next decade and beyond.

How to Use this Document

As is evident by the volume of information included in this report, significant efforts have taken place to address the water quality needs of the Maumee AOC. It should be noted that this document only summarizes activities and the organizations involved with these activities. Readers are encouraged to follow up with the respective contacts in the back of this report to obtain additional project details.

This document is not intended to be read cover to cover. While that wouldn't be discouraged, it is designed for use as a handy reference. The Recommendations & Accomplishments Table in the front half of this report cites each recommendation excerpted from the 1991 *Recommendations Report* (numbers in parenthesis following each recommendation refers to the location of the recommendation in the original report). Status on whether each recommendation has been implemented is divided into six phases:

○ = **No Action** - recommendation has not been implemented.

⊙ = **Limited Action** - minimal actions have/are taking place to implement recommendation.

O = **Significant Action** – actions have/are taking place to implement recommendation.

● = **Action Complete** – recommendation has been implemented.

■ = **Action Ongoing** – recommendation is being implemented (oftentimes associated with an annual event).

\- = **Not Applicable** - policies and/or regulations have changed, therefore recommendations are no longer applicable.

The table also includes columns to reference the title of the activity, the date it occurred, and a page number to find its Activity Description in the second section of the report. The Maumee RAP's participation is also indicated through three levels of involvement:

Lead The Maumee RAP is/was the lead organization or was part of a team of leading organizations to sponsor/coordinate the event or the program.

Collaborator The Maumee RAP is/has assisted with the project, reviewed and commented on technical documents, provided financial assistance or another type of support to a lead organizer.

None The Maumee RAP did not participate in this event, program or policy creation.

Beneficial uses related to the recommended action are also indicated in the table. The numbers in the table

reflect the number located to the left of the listed beneficial use in the Preface.

If additional details are identified that could supplement the information provided in this document, please forward those corrections/additions to the Ohio EPA RAP Coordinator, Ohio EPA Northwest District Office, 347 North Dunbridge Road, Bowling Green, Ohio 43402, (419) 352-8461.

RECOMMENDATIONS AND ACCOMPLISHMENTS

ISSUE 1: AGRICULTURE RUNOFF

Actions Suggested in the *Maumee RAP Recommendations Report*	Action	Activity	Maumee RAP Involvement	Date	Beneficial Use Affected	See Page
Discourage fall plowing and maintain cover on all exposed soil surfaces during critical erosion period (3.5.2.)	■	Maumee River Basin Sediment Reduction Project	None	1992-1997	6, 11	68
		Conservation Tillage Equipment Buy-Down Program	Collaborator	1992		68
		Toussaint River Improvement Incentive Program	Lead	1997-2003		68
		CRP	None	Ongoing		70
		Strip-Till Equipment Lease Program	Collaborator	1997-1998		70
		Residue Management & Erosion Control Demonstration Project	Collaborator	2001-2003		71
Encourage farmers to adopt BMPs through local agricultural nonpoint source steering committees in counties throughout Maumee watershed (3.5.2.)	■	Maumee River Basin Sediment Reduction Project	Collaborator	1992-1997	6, 11	68
		Conservation Tillage Equipment Buy-Down Program	Collaborator	1992		68
		Ohio Phosphorus Reduction Strategy	None	1992-1994		71
		Ohio Lake Erie Buffer Program	Collaborator	1998-Present		71
		CRP	None	Ongoing		70
		Ohio Coastal Nonpoint Source Pollution Control Plan	None	2000		72
		CREP	None	2000 - Present		72
		EQIP	None	Ongoing		78
Adopt Conservation Cover Crops Land Management Practices (3.5.2.)	■	CRP	None	Ongoing	6, 11	70
		Pheasants Forever Plantings	None	Ongoing		73
		Ottawa County Native Grasses Seeder	None	1992-1993		74
		Wood County Native Grasses Seeder	Collaborator	1997-1998		74
		Strip-Till Equipment Lease Program	Collaborator	1997-1998		70
		Residue Management & Erosion Control Demonstration Project	Collaborator	2001-2003		71
		Toussaint River Improvement Incentive Program	Lead	1997-2003		68

ISSUE 1: AGRICULTURE RUNOFF (continued)

Actions Suggested in the *Maumee RAP Recommendations Report*	Action	Activity	Maumee RAP Involvement	Date	Beneficial Use Affected	See Page
Adopt Conservation Cropping Sequence Land Management Practices (3.5.2.)	■	Certified Crop Advisor	None	1995 - Present	6, 8, 11	74
Adopt Critical Area Planting Land Management Practices (3.5.2.)	■	CRP	None	Ongoing	6, 11	70
		Pheasants Forever Plantings	None	Ongoing		73
		Ottawa County Native Grasses Seeder	None	1992-1993		74
		Wood County Native Grasses Seeder	Collaborator	1997-1998		74
		Strip-Till Equipment Lease Program	Collaborator	1997-1998		70
		Residue Management & Erosion Control Demonstration Project	Collaborator	2001-2003		71
		Toussaint River Improvement Incentive Program	Lead	1997-2003		68
		CREP	None	2000 - Present		72
Adopt Field Windbreak Land Management Practices (3.5.2.)	■	Northwest Ohio Field Windbreak Program	None	1977 - Present	6, 8, 11, 14	74
		CRP	None	Ongoing		70
		NatureWorks Swan Creek Watershed Project	Collaborator	1996 - 1998		75
		CREP	None	1997-2001		72
		Ohio Lake Erie Buffer Program	Collaborator	1998- Present		71
Adopt Filter Strips Land Management Practices (3.5.2.)	■	CRP	None	Ongoing	6, 8, 11	70
		NatureWorks Swan Creek Watershed Project	Collaborator	1996 - 1998		75
		CREP	None	1997-2001		72
		Toussaint River Improvement Incentive Program	Lead	1997-2003		68
		Ohio Lake Erie Buffer Program	Collaborator	1998- Present		71

ISSUE 1: AGRICULTURE RUNOFF (continued)						
Actions Suggested in the *Maumee RAP Recommendations Report*	**Action**	**Activity**	**Maumee RAP Involvement**	**Date**	**Beneficial Use Affected**	**See Page**
Adopt Nutrient Management Land Management Practices (3.5.2.)	■	Manure Management Plans	None	Ongoing	6, 8, 11	75
		Soil Doctor	None	1994		76
		Certified Crop Advisor	None	1995 – Present		74
		Hertzfeld Manure Composting Project	None	1998		76
Adopt Grassed Waterway Land Management Practices (3.5.2.)	■	CRP	None	Ongoing	6, 8, 11, 14	70
		Toussaint River Improvement Incentive Program	Lead	1997-2003		68
		Wood County Native Grasses Seeder	Collaborator	1997		74
		Ottawa County Native Grasses Seeder	None	1997-1999		74
		CREP	None	2000-Present		72
Adopt Waste Management Systems Land Management Practices (3.5.2.)	■	Manure Management Plans	None	Ongoing	6, 8, 11	75
		Certified Crop Advisor	None	1995 - Present		74
		Hertzfeld Manure Composting Project	None	1998		76
Adopt Stream Bank Protection Land Management Practices (3.5.2.)	■	NatureWorks Swan Creek Watershed Project	None	1996 - 1998	6, 11, 14	75
		Swan Creek Streambank Stabilization Project	Collaborator	1996		76
		Toussaint River Streambank Stabilization Project	Lead	1998		68
Adopt Structural Erosion Control Land Management Practices (3.5.2.)	○	-	-	-	-	-
Encourage sustainable and organic agriculture (3.5.2.)	■	Influential Farmer Meeting	Lead	1995	6, 8, 11	77
Encourage flexible government programs to allow variability in cropping (i.e. rotations) without penalty to farmer enrolled in programs (3.5.2.)	○	-	-	-	-	-

ISSUE 1: AGRICULTURE RUNOFF (continued)						
Actions Suggested in the *Maumee RAP Recommendations Report*	**Action**	**Activity**	**Maumee RAP Involvement**	**Date**	**Beneficial Use Affected**	**See Page**
Disseminate Information to farmers/landowners on environmental issues, technical application and economic benefit (3.5.2.)	■	Influential Farmer Meeting	Lead	1995	6, 8, 11, 14	77
		From Satellites to Earthworms Workshop	Lead	1996		77
		Is Your Drinking Water Safe? Seminar	Lead	1996		77
		Toussaint River Improvement Incentive Program	Lead	1997-2003		68
		Certified Crop Advisor	None	1995 - Present		74
Agencies need to address public concerns on water quality using public media, scheduling seminars and conducting demonstrations (3.5.2.)	■	Influential Farmer Meeting	Lead	1995	6, 8, 11, 14	77
		From Satellites to Earthworms Workshop	Lead	1996		77
		Is Your Drinking Water Safe? Seminar	Lead	1996		77
Additional certification program should be developed for commercial fertilizer dealers and applicators that apply fertilizer, herbicides and pesticides to cropland; should make recommendations based on soils test (3.5.2)	●	Certified Crop Advisor	None	1995 – Present	6, 8, 11	74
Preserve and restore wetlands to aid in phosphorus removal from runoff (3.5.2)	●	Wetland Reserve Program	None	1985-Preesent	6, 8, 11	138
		Waterbank Program	None	1992-1994		139
		Blue Creek Wetlands Demonstration Project	Collaborator	1993		140
		CREP	None	2000-Present		72
		See Issue 3 - Wetlands Section for additional projects				138

ISSUE 2: LANDFILLS, DUMPS AND BROWNFIELD SITES

Actions Suggested in the *Maumee RAP Recommendations Report*	Action	Activity	Maumee RAP Involvement	Date	Beneficial Use Affected	See Page
Recommend that Ohio EPA require the necessary procedures to clean-up listed sites. (3.10.2, 4.10.2., 5.10.2., 6.10.2)	●	See Issue 2 - Landfills, Dumps and Uncontrolled Waste Sites Activity Descriptions			1, 3, 4, 6, 11	80
Remedial Investigation/Feasibility Studies should be completed for each site to fully elaborate the extent of work which will be necessary to remediate the sites to best protect the public health and the environment. (3.10.2, 4.10.2., 5.10.2., 6.10.2)	–	RI/FS completed for some sites. See Activity Descriptions for more details.			1, 3, 4, 6, 11	80
Remedial Design/Remedial Action should then be prepared to spell out the exact details of the remedial actions to be implemented. Clean-up should then proceed as expeditiously as possible. (3.10.2, 4.10.2., 5.10.2., 6.10.2)	–	RD/RA completed for some sites. See Activity Descriptions for more details.			1, 3, 4, 6, 11	80
Recommend that the other sites that have been identified for possible remediation be given priority for clean-up in accordance with the previously prescribed procedures for corrective action by Ohio EPA. (3.10.2, 4.10.2., 5.10.2., 6.10.2)	–	Toledo Brownfields Group	None	1990s-Present	1, 3, 4, 6, 11	228
		Remediation has been conducted at some sites. See Activity Descriptions for more details.				80
Recommend that additional preliminary assessments be performed for sites that have been identified but for which there is little or no information concerning possible environmental effects. (3.10.2, 4.10.2., 5.10.2., 6.10.2)	■	MAOC Project	Collaborator	1992-1998	1, 3, 4, 6, 11	233
		Maumee AOC Contaminated Sediment Project	Collaborator	1994-1995		234
		MAOC Project Extension	Collaborator	1998		234
		Sediment Toxicity Survey	Collaborator	1998		235
		Duck Creek Wetlands Sampling Project	None	2001		235
		Toledo Brownfields Group	None	1990s-Present		228
Ohio EPA should be supportive of these voluntary clean-ups and/or interim actions in the AOC. (3.10.2, 4.10.2., 5.10.2., 6.10.2)	■	Voluntary Action Program	None	1996 - Present	1, 3, 4, 6, 11	135
		Numerous sites have had voluntary remedial activities occur. See Activity Descriptions for more details.				80

ISSUE 2: LANDFILLS, DUMPS AND BROWNFIELD SITES (continued)

Actions Suggested in the *Maumee RAP Recommendations Report*	Action	Activity	Maumee RAP Involvement	Date	Beneficial Use Affected	See Page
Recommend that the owners and responsible parties for the various sites listed in the *Investigation Report* and the high priority sites listed above initiate clean-up activities as soon as possible and at minimum take interim measures to prevent leachate from entering surface waters. (3.10.2, 4.10.2., 5.10.2., 6.10.2)	■	Assessment and remediation activities vary by site. See Activity Descriptions for more details.			1, 3, 4, 6, 11	80
The Ottawa River should be addressed as a separate cleanup project with responsibility for cleanup allocated to all of the contributing sources (5.10.2.)	◎	MAOC Project	Collaborator	1992-1998	1, 3, 4, 6, 11, 14	233
		Ottawa River Sediment Screening Survey	Collaborator	1994-1996		234
		Maumee AOC Contaminated Sediment Project	Collaborator	1994-1995		234
		MAOC Project Extension	Collaborator	1998		234
		Sediment Toxicity Survey	Collaborator	1998		235
		Ottawa River Geographic Initiative	Collaborator	1999-2000		237
		Ottawa River Hot Spot Delineation and Risk Assessment	Collaborator	2000-2001		186
ACTIVITIES NOT IN THE 1991 RAP RECOMMENDATIONS REPORT						
	●	Dumps and Landfills Walking Tour	Lead	1996	1, 3, 4, 6, 11, 14	135
	●	Ottawa River Remediation Bus Tour	Lead	1998	1, 3, 4, 6, 11, 14	136
	⊙	Maumee AOC Uncontrolled Waste Site Database	Collaborator	1999	1, 3, 4, 6, 11, 14	136
	◎	Clean Ohio Fund	None	2001 - 2005	1, 3, 4, 6, 7, 8, 11, 14	137

ISSUE 3: WETLANDS AND OPEN SPACE PRESERVATION

Actions Suggested in the *Maumee RAP Recommendations Report*	Action	Activity	Maumee RAP Involvement	Date	Beneficial Use Affected	See Page
Wetlands currently owned and managed by governmental entities and the private sector should be preserved as natural habitats but should receive sufficient management action to maximize wildlife usage and native plant communities. (2.3.4.2)	■	See Issue 10 - Comprehensive Wildlife Habitat Management Plan Section for additional projects			3, 14	138
		Waterbank Program	None	1992-1994		139
		Wetland Reserve Program	None	1985-Present		138
		Wildlife Habitat Incentives Program (WHIP)	None	1996-Present		138
		Manhattan Marsh Nature Preserve	Collaborator	1990 – Present		139
		Blue Creek Wetlands Demonstration Project	Collaborator	1993-1995		140
		Metzger Marsh Wildlife Area Improvements	None	1994		140
		Maumee Bay State Park Coastal Wetlands Restoration	None	1997-1998		140
		Duck Creek Wetlands Restoration Project	None	Planned 2002		235
Counties, cities and villages should adopt their own legislation following the federal definitions and guidelines as outlined in Section 404 of the Clean Water Act. (2.3.4.2)	○	-	-	-	-	-
The loss of wetlands to real estate development activities should be discouraged by governmental agencies involved in the permit review process. (2.3.4.2)	■	US ACOE and New Ohio Isolated Wetlands Regulations	None	2001	14	141
Should development activities adversely affect wetlands, mitigation projects should be required which actually replace lost acreage with high quality, man-made wetland areas. (2.3.4.2)	■	US ACOE and New Ohio Isolated Wetlands Regulations	None	2001	14	141
Building on the *National Wetlands Inventory Maps, USFWS*, local governments should prepare a comprehensive plan and maps that identify wetlands and floodplains, followed by adoption of prohibition on development within identified areas. (2.3.4.2)	◉	Maumee River Watershed Wetlands Protection & Enhancement Planning Project	Collaborator	2000-2002	3, 14	141
		Remote Sensing Technology for Land Cover Analysis	Collaborator	2000 – Present		142

ISSUE 3: WETLANDS AND OPEN SPACE PRESERVATION (continued)

Actions Suggested in the *Maumee RAP Recommendations Report*	Action	Activity	Maumee RAP Involvement	Date	Beneficial Use Affected	See Page
The planning process must include a review of existing floodplain and zoning legislation, with maps being made available to the general public to monitor the disposition of these areas. (2.3.4.2)	◎	US ACOE and New Ohio Isolated Wetlands Regulations	None	2001	14	141
		Maumee River Watershed Wetlands Protection & Enhancement Planning Project	Collaborator	2000-2002		141
The comprehensive plan should be reviewed every five years, but the initial process should be open to a wide array of interested parties. (2.3.4.2)	○	-	-	-	-	-
To be established at the state level, is the creation of a Coastal Wetlands Preservation Program and it should be supported with a special revenue Wetlands Preservation Fund in the State budget. (2.3.4.2)	⊙	ODNR Coastal Management Program	None	1997-Present	3, 14	142
		Lake Erie Protection and Restoration Plan	None	2000		171
		Clean Ohio Fund	None	2001 - 2005		137
Identified coastal wetlands should be valued as prime agricultural land for tax purposes. (2.3.4.2)	○	-	-	-	-	-
Educational programs need to be initiated by the RAP Coordinating Committee and by all governmental entities on the need for these programs (2.3.4.2)	◎	Maumee River Watershed Wetlands Protection & Enhancement Planning Project	Collaborator	2000-2002	3, 14	141
		Floodplain Management Workshop	Lead	1996		142
ACTIVITIES NOT IN THE 1991 RAP RECOMMENDATIONS REPORT						
	●	Ottawa SWCD Private Lands Wetlands Restoration	None	1992 - 1994	14	143
	◎	OSU Drainage Channel Restoration	None	1999-Present	14	143
	◎	Clean Ohio Fund	None	2001 - 2005	1, 3, 4, 6, 7, 8, 11, 14	137

ISSUE 4: URBAN RUNOFF PROBLEM

Actions Suggested in the *Maumee RAP Recommendations Report*	Action	Activity	Maumee RAP Involvement	Date	Beneficial Use Affected	See Page
Correction and Prevention						
Illicit connections to storm sewers need to be located and eliminated. (3.4.2.)	■	Health Department Regulations	None	Ongoing	1, 3, 4, 6, 7, 8, 9, 10, 11	144
		NPDES Phase I	None	1990		144
		NPDES Phase II	None	1999		145
Recommend that a monitoring program be established to assist in locating these connections. (3.4.2.)	◎	Informal Programming	None	Ongoing	1, 3, 4, 6, 7, 8, 9, 10, 11	145
		Annual Dry Weather Field Survey	None	Ongoing		145
		Swan Creek Stream Keepers Program	Lead	1998-2000		172
An effective enforcement program also needs to be established. (3.4.2.)	◎	Community Agent Enforcement	None	Ongoing	1, 3, 4, 6, 7, 8, 9, 10, 11	146
Cities must be aggressive about responding to all complaints of illegal dumping and liquid waste runoff and locating parties responsible for the illegal disposal of hazardous material in drainage systems. (3.4.2.)	■	Spill Response Programs	None	Ongoing	1, 3, 4, 6, 7, 8, 9, 11	146
New industries and businesses should be required to submit disposal plans for water containing wastes. (3.4.2.)	●	Wastewater Disposal Plans/Permits	None	Ongoing	3, 4, 6, 8, 3, 6, 10, 11	146
		City of Toledo Pretreatment Program	None	1987-Present		197
Recommend that construction site runoff be regulated by new ordinances and followed up with adequate enforcement. (3.4.2.)	■	NPDES Phase I	None	1990	3, 6, 11, 14	144
		NPDES Phase II	None	1999		145
		City of Toledo Ordinance 139-95	None	1995		146
		Regional Storm Water Standards	Collaborator	2000-2001		156
Construction permits should include storm water runoff standards for quality and quantity. (3.4.2.)	◎	Site Plan Reviews	None	Ongoing	3, 6, 10, 11, 14	146
		NPDES Phase I	None	1990		144
		NPDES Phase II	None	1999		145
		Regional Storm Water Standards	Collaborator	2000-2001		156
Recommend tighter restrictions on development in floodplains be imposed based on watershed plans that identify land use development patterns and existing and potential drainage problems. (3.4.2.)	●	Floodplain and FEMA Regulations	None	Ongoing	3, 6, 10, 11, 13, 14	147
		Regional Storm Water Standards	Collaborator	2000-2001		156
		Swan Creek Watershed Plan of Action	Lead	1998-2001		171

ISSUE 4: URBAN RUNOFF PROBLEM (continued)

Actions Suggested in the *Maumee RAP Recommendations Report*	Action	Activity	Maumee RAP Involvement	Date	Beneficial Use Affected	See Page
Community programs (i.e., motor oil recycling, disposal of hazardous household chemicals, rewards for information leading to the conviction of chronic polluters, etc.) need to be developed that discourage illegal and inappropriate dumping into the storm sewers and waterways. (3.4.2.)	■	NPDES Phase I	None	1990	1, 3, 4, 6, 7, 8, 9, 11	144
		NPDES Phase II	None	1999		145
		BGSU Orphan Chemical Program	None	1991-Present		147
		Ottawa-Seneca-Sandusky Tire Collection Day	None	1993-Present		147
		Ottawa-Seneca-Sandusky Lead-Acid Battery Collection	None	1994-Present		147
		Lucas County Pitch Old Paint Day	None	1995-Present		148
		ODA Pesticide Collection Day	None	1996 – Present		148
		Wood Co. Household Hazardous Collection	None	1997-Present		148
		Ottawa-Seneca-Sandusky Household Hazardous Waste Collection Days	None	1997-Present		148
		Lucas County Hazardous Waste Collection Program	None	1998-Present		149
		Mercury Collection and Reclamation Program	None	1998-Present		149
		Ohio's Materials Exchange Project	None	1998-Present		149
Public awareness campaigns, educational programs, and the media should be used to encourage volunteer efforts and put public pressure on business and industry. (3.4.2.)	■	NPDES Phase I	None	1990	All	144
		NPDES Phase II	None	1999		145
		Public Officials Guide to Urban Storm Water Runoff	Collaborator	1992		150
		Storm Water Workshop for Municipal Officials	Lead	1993		150
		Ottawa River-Swan Creek Construction Site Erosion Control Demonstration Project	Collaborator	1993-1994		150
		Erosion Control Workshop	Lead	1994		150
		Storm Drain Stenciling Program	Lead	1994 – Present		151
		Watershed-Based Storm Water Management Workshop	Lead	1996		151
		Pollution Prevention in Northwest Ohio Seminar	Lead	1999-2001		151
		Inland Spills Conference	None	1997-Present		152

ISSUE 4: URBAN RUNOFF PROBLEM (continued)						
Actions Suggested in the *Maumee RAP Recommendations Report*	**Action**	**Activity**	**Maumee RAP Involvement**	**Date**	**Beneficial Use Affected**	**See Page**
Education Programs						
Education programs should be initiated on the importance of keeping toxic pollutants from entering the urban storm water drainages. (3.4.2.)	■	Student Watershed Watch	Lead	1989-Present	1, 3, 4, 6, 8, 9, 11	162
		NPDES Phases I	None	1990		144
		NPDES Phase II	None	1999		145
		Storm Drain Stenciling Program	Lead	1995-Present		151
		Package Plant Operation and Maintenance Workshop	None	2001		202
State and local agencies should provide and circulate educational material designed to maximize voluntary efforts to keep toxins out of the drainage system. (3.4.2)	■	Educational Materials	Collaborator	Ongoing	1, 3, 4, 6, 8, 9, 11	152
		Ohio EPA Training and Workshops	None	Ongoing		153
		NPDES Phase I	None	1990		144
		NPDES Phase II	None	1999		145
		See Issue 5 – Public Participation and Awareness Section for additional projects				158
Pollution Control Agencies						
The various pollution control agencies should increase their presence in promoting the proper management of toxins. (3.4.2.)	■	Comprehensive Permitting Programs	None	Ongoing	1, 3, 4, 6, 8, 9, 11	152
		NPDES Phase I	None	1990		144
		NPDES Phase II	None	1999		145
		See Community Programs above and Issue 5 - Public Participation and Awareness Section For additional projects				158
Leaks and spills, resulting from both sloppy housekeeping and intentional acts, should be minimized. (3.4.2.)	■	NPDES Phase I	None	1990	1, 3, 4, 6, 7, 8, 9, 11	144
		NPDES Phase II	None	1999		145
		City of Toledo Environmental Services Industrial Inspections	None	Ongoing		153
Agencies should increase cooperative efforts to ensure that personnel are properly trained (particularly that all inspectors are trained to be observant for improper toxic management during the course of their inspections.) (3.4.2.)	●	Ohio EPA Training and Workshops	None	Ongoing	1, 3, 4, 6, 7, 8, 9, 11	153

ISSUE 4: URBAN RUNOFF PROBLEM (continued)

Research

Actions Suggested in the *Maumee RAP Recommendations Report*	Action	Activity	Maumee RAP Involvement	Date	Beneficial Use Affected	See Page
Local universities should be funded to examine the effectiveness of pilot programs designed to test control measures and resulting environmental impact. (3.4.2.)	○	-	-	-	-	-
Research should be encouraged and funded by the US EPA and Ohio EPA to determine the effectiveness of specific control measures and the significance of urban runoff to the overall health of the receiving water. (3.4.2.)	◎	Ottawa River-Swan Creek Construction Site Erosion Control Demonstration Project	Collaborator	1993-1994	All	150
		Erosion Control Workshop	Lead	1994		150
		Nonpoint Source Pollution Control for Urban Storm Water at Wildwood Preserve	Collaborator	1998-1999, 2001		153
		Bowman Park Parking Lot BMP Installation	Collaborator	2001		153

ACTIVITIES NOT IN THE 1991 RAP RECOMMENDATIONS REPORT

	●	Toledo Metropolitan Area Regional Storm Water Management Study	Collaborator	1997-1999	1, 3, 4, 6, 7, 8, 9	154
	■	Plan of Operation for a Regional Storm Water Management District in the Maumee River Watershed	Collaborator	1999-2002	1, 3, 4, 6, 7, 8, 9	155
	■	City of Toledo Storm Water Utility	None	2000 – Present	1, 3, 4, 6, 7, 8, 9	157

ISSUE 5: INCREASE PUBLIC PARTICIPATION AND AWARENESS

Actions Suggested in the *Maumee RAP Recommendations Report*	Action	Activity	Maumee RAP Involvement	Date	Beneficial Use Affected	See Page
Increase the extent of media coverage, possibly with a series of newspaper articles on the AOC (2.3.11.2)	■	Support of Print Media	Collaborator	Ongoing	All	158
		River of Shame Documentary	Collaborator	1996		158
Put together mailing lists of individuals and organizations identified as potentially interested in environmental projects (2.3.11.2)	■	TMACOG Mail List	Collaborator	Ongoing	All	158
Prepare and promote multi-media presentations for schools, civic groups, conservation groups, hunters, businesses, churches, etc. These presentations should emphasize the purpose of the RAP, and surround it with emphasis on existing natural systems, their importance and intrinsic beauty (2.3.11.2)	■	Maumee RAP Presentations	Lead	Ongoing	All	158
		Maumee RAP Watershed Videos	Lead	1991-1992		159
Stress historical-type "ecology" approach, emphasizing involvement of target group in the system and the need for committed "stakeholders" (2.3.11.2)	■	Duck and Otter Creeks Stakeholders Summit	Lead	1999	All	159
		Duck & Otter Creeks Partnership	Collaborator	1999 – Present		230
Prepare and place semi-permanent displays (kiosk-style) at important gathering places which feature ecological subsystems of the AOC, as well as future benefits of remedial actions (2.3.11.2)	■	Maumee RAP Display	Lead	Ongoing	All	159
Involve the curiosity of the public by distributing stickers which might interest people who might miss other approaches (2.3.11.2)	●	Maumee RAP Promotional Items	Lead	2001-Present	All	160
Invite AOC residents to a series of public meetings where the RAP is discussed. (2.3.11.2)	■	Profiling the Ottawa River I-IV	Lead	1994-Present	All	160
		Swan Creek: A Stream with a Future	Lead	1997		160
		Profiling Swan Creek; Swan Creek Days	Lead	1998-2000		171
		Eco-Vision	Collaborator	1997-2000		160
Acquire necessary equipment and a RAP boat to assist with education, monitoring and research efforts (2.3.11.2)	●	MAOC Project	Collaborator	1992-1998	All	233

ISSUE 5: INCREASE PUBLIC PARTICIPATION AND AWARENESS (continued)

Actions Suggested in the *Maumee RAP Recommendations Report*	Action	Activity	Maumee RAP Involvement	Date	Beneficial Use Affected	See Page
Small research grants to be awarded to local university graduate students for research in the AOC (2.3.11.2)	■	LEPF Grants	None	Ongoing	All	161
		Maumee AOC Uncontrolled Waste Site Database	Collaborator	1999		136
Present RAP "award certificates" to individuals, companies, organizations, etc. who have contributed in some positive way to the bettering of conditions in the AOC, production of research information, etc. (2.3.11.2)	■	Awards for Volunteers and Project Supporters	Lead	Ongoing	All	161
		Maumee RAP Annual Gathering	Lead	2000-Present		161
Continue Swan Creek educational water quality testing program within area schools and initiate similar projects for the Ottawa River, Otter Creek, Duck Creek, Cedar Creek, Crane Creek, and Maumee River. Agricultural community should participate as well as other schools in the RAP area. (2.3.11.2)	■	Student Watershed Watch	Lead	1989-Present	All	162
		Swan Creek Stream Keepers Program	Lead	1998-2000		172
Establish within the old Toledo Edison Co. Steam Plant a downtown Toledo nature center and laboratory displaying the ecosystem approach (2.3.11.2)	●	COSI opened in nearby facility.	-	-	-	-
ACTIVITIES NOT IN THE 1991 RAP RECOMMENDATIONS REPORT						
	■	Maumee RAP Newsletters	Lead	1990-Present	All	162
	●	Ottawa RiverView	None	1992-1997	All	234
	■	Walk for the World/ March for the Parks	Collaborator	1993-Present	All	163
	●	Maumee RAP Dinner and Brainstorming Session	Lead	1994	All	163
	■	Special Education Equipment	Collaborator	Ongoing	All	163
	●	Swan Creek Cleanup, Neighbors on the Creek	None	1994-1998	11,14	164
	●	Oak Openings Tour	Lead	1995	3,14	164
	●	Maumee RAP Slogan Contest	Lead	1995	-	164

ISSUE 5: INCREASE PUBLIC PARTICIPATION AND AWARENESS (continued)

ACTIVITIES NOT IN THE 1991 RAP RECOMMENDATIONS REPORT (continued)

	Action	Activity	Maumee RAP Involvement	Date	Beneficial Use Affected	See Page
	●	Maumee RAP Public Service Announcements	Lead	1995	All	165
	●	Community Partnership Initiative-Ottawa Research Project	None	1995	All	165
	●	Water Fest	Lead	1995	All	165
	●	Maumee RAP General Brochures	Lead	1995, 2001	All	166
	■	Tree Plantings and Distribution	Varies	Ongoing	14	166
	●	Understanding Environmental Risks Workshop	Lead	1996	All	167
	●	Maumee RAP Strategic Plan	Lead	1997	All	167
	●	Maumee RAP Slide Show	Lead	1997, 2001	All	167
	●	H_2O Day	Collaborator	1997	All	168
	●	Maumee RAP Tenth Anniversary Celebration	Lead	1997	All	168
	●	NPDES Site Tours	Lead	1997	All	168
	■	Maumee RAP Web Sites	Lead	1997-Present	All	168
	■	Sign Our Streams	Collaborator	1997-Present	All	169
	■	Clean Your Streams Day 1-5	Lead	1997-Present	All	169
	●	Maumee RAP Finance Brochure	Lead	1998	All	169
	●	Oak Openings Native Gardens	None	1998-2001	All	170

ISSUE 5: INCREASE PUBLIC PARTICIPATION AND AWARENESS (continued)

ACTIVITIES NOT IN THE 1991 RAP RECOMMENDATIONS REPORT (continued)

	Action	Activity	Maumee RAP Involvement	Date	Beneficial Use Affected	See Page
	●	State of the Lake Reports	None	1994, 1998	All	170
	●	Swan Creek Watershed Plan of Action	Lead	1998-2001	All	171
	●	New Maumee RAP Logo	Lead	1999	–	173
	●	Signage & Native Plantings along Swan Creek RiverWalk	Collaborator	1999-2001	All	174
	●	Ohio's Partnership for Urban Streams	Collaborator	1999-2001	All	173
	●	Paving Paradise Workshop	Lead	1999	All	173
	●	Impact on Urban Streams through Land Use Practices Workshop	Collaborator	1999	All	174
	●	Ottawa River Interpretive Trail	Collaborator	1999-2000	All	174
	●	Practices that Protect Workshop	Lead	2000	All	173
	■	MAOC ArcView	None	1998-Present	All	234
	●	Oak Openings Natives Natural Garden Tour	None	2000	3, 14	175
	■	Duck & Otter Creek Partnership Watershed Coordinator	Collaborator	2000-2006	All	230
	◎	Fate of a River: Revisited Documentary and Education Program	Lead	2000-Present	All	175
	■	Lower Maumee River Watershed Coordinator	Lead	2001-2007	All	226
	■	Tree and Fish Sales	None	Ongoing	1, 3, 4, 6, 8, 11, 14	176
	■	Toledo Area Metroparks Oak Tree Award	None	Ongoing	All	176

ISSUE 5: INCREASE PUBLIC PARTICIPATION AND AWARENESS (continued)						
ACTIVITIES NOT IN THE 1991 RAP RECOMMENDATIONS REPORT (continued)						
	■	Lucas, Wood & Ottawa SWCD Education Specialist Efforts	None	Ongoing	All	176

ISSUE 6: COMBINED SEWER OVERFLOWS						
Actions Suggested in the *Maumee RAP Recommendations Report*	**Action**	**Activity**	**Maumee RAP Involvement**	**Date**	**Beneficial Use Affected**	**See Page**
City of Toledo						
Maumee River – West. No action is recommended for Maumee River West CSO abatement except for regulator 22. Regulator 22 is recommended for separation because it eliminates a river inflow problem. (3.2.1.2.)	●	Combined Sewer Overflow Abatement	None	1976-1997	All	178
Maumee River – West (Downtown). Recommend that the City continue to monitor its regulators and recommend corrective action should the monitoring data prove that substantial degradation is occurring to the water quality on the Maumee River. (3.2.1.2.)	■	Flow Characterization and Water Quality Study	None	2001	All	180
Swan Creek - Recommend that Toledo proceed with its plan for the CSO abatement projects as follows (4.2.1.2.): Phase 3 & 4 June 1991 Phase 5 1993 Phase 6 & 7 1994 Phase 8 1995	●	Combined Sewer Overflow Abatement	None	1976-1997	All	178
Ottawa River - Recommend that the Ottawa River be the next priority for CSO abatement when the scheduled Swan Creek work is finished. (5.2.1.2)	●	Combined Sewer Overflow Abatement	None	1976-1997	All	178
		Point Place Flow Monitoring and Evaluation Study	None	1995		178
		Point Place Sanitary Sewer System Evaluation Survey	None	1997		178
		Combined Sewer Overflow Impact Study	None	1997		179
		Sanitary Sewer Overflow Abatement	None	1998-2001		180
		Flow Characterization & Water Quality Study	None	2001		180
Ottawa River – Recommend that the City of Toledo continue to monitor its regulators and recommend corrective action for the Ottawa River CSOs. (5.2.1.2)	■	Combined Sewer Overflow Abatement	None	1976-1997	All	178
		Point Place Flow Monitoring and Evaluation Study	None	1995		178
		Point Place Sanitary Sewer System Evaluation Survey	None	1997		178
		Combined Sewer Overflow Impact Study	None	1997		179
		Sanitary Sewer Overflow Abatement	None	1998-2001		180
		Flow Characterization & Water Quality Study	None	2001		180

ISSUE 6: COMBINED SEWER OVERFLOWS (continued)						
Actions Suggested in the *Maumee RAP Recommendations Report*	**Action**	**Activity**	**Maumee RAP Involvement**	**Date**	**Beneficial Use Affected**	**See Page**
A cost-effective analysis should be selected to provide the maximum benefit for the cost, or as required to meet water quality standards. (5.2.1.2)	■	Flow Characterization and Water Quality Study	None	2001	All	180
Recommend that Ohio EPA review the recommended corrective action and comment on same (5.2.1.2)	■	Flow Characterization and Water Quality Study	None	2001	All	180
City of Maumee						
Maumee River – Recommend that the City of Maumee follows their approved plan to eliminate the combined sewer regulators. (3.2.2.2.)	●	City of Maumee CSO Abatement	None	1988-1997	All	180
City of Perrysburg						
Maumee River – Recommend that the City of Perrysburg follow their approved plan to provide elimination or abatement of CSOs. (3.2.3.2.)	◎	City of Perrysburg CSO Abatement	None	1988-Present	All	181
Village of Swanton						
Swan Creek - Recommend that the Village of Swanton move forward to eliminate all CSOs (4.2.2.2.)	◎	Village of Swanton CSO Abatement	None	1991-Present	All	181
ACTIVITIES NOT IN THE 1991 RAP RECOMMENDATIONS REPORT						
	●	City of Genoa CSO Abatement	None	1991-2001	All	181
	⊙	Village of Luckey CSO Abatement	None	1991-Present	All	181

ISSUE 7: ACQUISITION OF FISH AND WILDLIFE HABITATS

Actions Suggested in the *Maumee RAP Recommendations Report*	Action	Activity	Maumee RAP Involvement	Date	Beneficial Use Affected	See Page
Public agencies should be encouraged to acquire fish and wildlife habitat lands within the AOC. (2.3.3.2)	■	Toledo Metropark Land Acquisition	None	1991-2001	3, 11, 14	183
		Wood County Park District Land Acquisition	None	1992		184
		Oak Openings Green Space Initiative	None	2000-2001		182
		Land Preservation and Land Acquisition Plan	None	2000 - Present		182
		Clean Ohio Fund	None	2001 - 2005		137
Plans should be adopted to encourage the perpetuation of native species and to identify and restore areas to their historical states. (2.3.3.2)	■	Manhattan Marsh Nature Preserve	Collaborator	1990 – Present	3, 11, 14	139
		Oak Openings Native Plant Project	None	1997-Present		183
		Oak Openings Region Conservation Program	None	1996-Present		182
		Shallow Water Impoundments	None	Ongoing		184
		Land Manager Restoration Efforts	None	Ongoing		185
		Swan Creek Watershed Plan of Action	Lead	1998-2001		171
Inventories should be established and the ODNR Division of Natural Areas and Preserves Heritage Program could be accessed to encourage preservation and acquisition of key habitat areas. (2.3.3.2)	■	Ohio Natural Heritage Database	None	Ongoing	3, 11, 14	184
		Oak Openings Green Space Initiative	None	2000-Present		182
		Land Preservation and Land Acquisition Plan	None	2000 - Present		182
		Maumee River Watershed Wetlands Protection & Enhancement Planning Project	Collaborator	2000-2002		141
Lands in the public trust at present should be managed to preserve existing habitat and should follow management programs that encourage species conservation and diversity. (2.3.3.2)	■	Wildlife Management Plans	None	Ongoing	3, 11, 14	224
Management plans should set aside public lands as Natural Areas and should identify and monitor area species. (2.3.3.2)	■	Wildlife Management Plans	None	Ongoing	3, 11, 14	224

ISSUE 7: ACQUISITION OF FISH AND WILDLIFE HABITATS (continued)

Actions Suggested in the *Maumee RAP Recommendations Report*	Action	Activity	Maumee RAP Involvement	Date	Beneficial Use Affected	See Page
Identify sites within the AOC for interception, filtering and discharge of stream flows using naturally occurring flora on a monitored site. (2.3.3.2)	O	Blue Creek Wetlands Demonstration Project	Collaborator	1993	3, 11, 14	140
		Maumee River Watershed Wetlands Protection & Enhancement Planning Project	Collaborator	2000-2002		141
Increase natural buffer areas by concentrating public land acquisition in public trust in four distinct areas: Maumee River Floodplain -- add 2,000 acres Lake Erie Coastal Wetlands -- add 2,000 acres Swan Crk. Middle Reach Floodplain -- add 1,000 acres Western Lucas County Wet Prairies -- add 2,000 acres of wetlands and Oak Savannas. (2.3.3.2)	O	*See Land Preserved Table in the Activity Description Section*			3, 11, 14	185

ISSUE 8: CONTAMINATED STREAM SEDIMENTS

Actions Suggested in the *Maumee RAP Recommendations Report*	Action	Activity	Maumee RAP Involvement	Date	Beneficial Use Affected	See Page
Recommend that toxic discharges that contaminate sediments be eliminated within the AOC. (3.6.2.)	■	Ohio EPA Recommendations	None	Ongoing	1, 3, 4, 6, 7, 9, 14	186
		See Other Sections: Issue 2 – Landfills, Issue 4 - Urban Runoff, Issue 6 - Combined Sewer Overflows, Issue 10 - Industrial Discharges for additional projects				80, 144, 178, 194
Establish the proposed RAP monitoring program (See 2.3.8) which would address sediment toxicity within the AOC. (3.6.2.)	■	MAOC Project	Collaborator	1992-1998	1, 3, 4, 6, 7, 9, 14	233
		Ottawa River Sediment Screening Survey	Collaborator	1994-1996		234
		Maumee AOC Contaminated Sediment Project	Collaborator	1994-1995		234
		MAOC Project Extension	Collaborator	1998		234
		Sediment Toxicity Survey	Collaborator	1998		235
		Duck & Otter Creeks Sediment Quality Assessment Report	Collaborator	1999		186
		Duck Creek Wetlands Sampling Project	None	2001		235
Based on the monitoring results, further studies might be necessary to adequately characterize the affected area. (3.6.2.)	■	Ottawa River Hot Spot Mapping	Collaborator	1997	1, 3, 4, 6, 7, 9, 14	186
		Sediment Distribution of the Lower Maumee and Ottawa Rivers	Collaborator	1998-2001		193
		Ottawa River Geographic Initiative	Collaborator	1999-2001		237
		Ottawa River Hot Spot Delineation and Risk Assessment	Collaborator	2000-2001		186
The protocol of Thomas, R. L. should be used to determine the appropriate remedial actions for areas identified as having toxic sediments. These consist of three general approaches: 1. Leaving the sediment alone, 2. In-situ inactivation, 3. removal (3.6.2.)	■	Ottawa River Demonstration Capping Project	None	1998 - 2001	1, 3, 4, 6, 7, 9, 14	187
		Ottawa River Hot Spot Delineation and Risk Assessment	Collaborator	2000-2001		186
The monitoring program must oversee the monitoring results and make decisions about appropriate remedial actions. (3.6.2.)	●	Ottawa River Hot Spot Delineation and Risk Assessment	Collaborator	2000-2001	1, 3, 4, 6, 7, 9, 14	186

ISSUE 8: CONTAMINATED STREAM SEDIMENTS (continued)

Actions Suggested in the *Maumee RAP Recommendations Report*	Action	Activity	Maumee RAP Involvement	Date	Beneficial Use Affected	See Page
Ohio EPA should develop one computer database that includes all of the relevant information on discharges of pollutants by watershed and be compatible with the US EPA computer database Permit Compliance System (3.6.2.)	■	Surface Water Information Management System (SWIMS)	None	1998-Present	1, 3, 4, 6, 7, 9, 14	187
		MAOC ArcView	None	1998-Present		234
This database should include the following information and should be accessible by any of these categories: name of discharger, NPDES permit number, receiving water body and river mile, compliance status, pollutants limited in current permit, Standard Industrial Classification Code, active or inactive discharger, outfalls in use, discharge monitoring report data, permit application data (including priority pollutant loading and concentration information), permit status including expiration date, type of discharger (e.g. municipal or industrial), and discharge monitoring requirements. (3.6.2.)	■	Surface Water Information Management System (SWIMS)	None	1999-Present	1, 3, 4, 6, 7, 9, 14	187
		MAOC ArcView	None	1998-Present		234
This database should be accessible at the Ohio EPA district offices and at the Central Office in Columbus. (3.6.2.)	○	–	–	–	–	–
Recommend that WWTPs and industries, including industries that discharge to WWTPs, with the potential for discharging toxic materials be required to perform whole-effluent toxicity testing following methods developed by the US EPA's Complex Effluent Toxicity Testing Program. (3.6.2.)	◉	Ohio EPA Recommendations	None	Ongoing	1, 3, 4, 6, 7, 9, 14	186
Methods and schedules for the elimination of the dischargers fund or perform necessary studies to supply these data so that they are available at the time that the permit is derived. (3.6.2.)	○	–	–	–	–	–
Recommend that Ohio EPA develop a process for determining whether discharged substances are at "levels of concern" and, therefore, need to be regulated. (3.6.2.)	■	Ohio EPA Programs to Eliminate/Reduce Toxicants	None	Ongoing	1, 3, 4, 6, 7, 9, 14	222
This process should include considerations for determining the impacts of loadings from several dischargers & the joint action/joint effects of combinations of contaminants. (3.6.2.)	◉	Ohio EPA Total Maximum Daily Load (TMDL) Program	None	Ongoing	1, 3, 4, 6, 7, 9, 14	237
This process must consider also the impacts of discharged pollutants on Lake Erie (3.6.2.)	◉	Ohio EPA Total Maximum Daily Load (TMDL) Program	None	Ongoing	1, 3, 4, 6, 7, 9, 14	237

ISSUE 8: CONTAMINATED STREAM SEDIMENTS (continued)						
Actions Suggested in the *Maumee RAP Recommendations Report*	**Action**	**Activity**	**Maumee RAP Involvement**	**Date**	**Beneficial Use Affected**	**See Page**
During the water quality standard development process, Ohio EPA should use US EPA water quality criteria to identify problem pollutants and priorities for controlling discharges of these pollutants. (3.6.2.)	◎	Ohio EPA Total Maximum Daily Load (TMDL) Program	None	Ongoing	1, 3, 4, 6, 7, 9, 14	237
Once Ohio EPA issues permits that include limits for toxic pollutants, the agency should immediately take enforcement action against dischargers who fail to meet all permit requirements. (3.6.2.)	■	Ohio EPA Recommendations	None	Ongoing	1, 3, 4, 6, 7, 9, 14	186
ACTIVITIES NOT IN THE 1991 RAP RECOMMENDATIONS REPORT						
	●	Fraleigh Creek/Unnamed Tributary Remediation	None	1998	1, 3, 4, 6, 7, 9, 14	188
	●	Ottawa River Demonstration Capping Project	Collaborator	1998-2001	1, 3, 4, 6, 7, 9, 14	187

ISSUE 9: DREDGED DISPOSAL

Actions Suggested in the *Maumee RAP Recommendations Report*	Action	Activity	Maumee RAP Involvement	Date	Beneficial Use Affected	See Page
Recommend that disposal practices be in accordance with the guidelines set down by the IJC and the mandates of the State of Ohio 5-year plan (3.7.2.)	■	Long-Term Sediment Management Strategy & Committee	None	1995-Present	1, 3, 4, 6, 7, 9, 10, 11, 14	190
Open-lake disposal of dredged sediment should be eliminated (3.7.2.)	◘	401 Certification Restricts Quantity for Open-Lake Disposal	None	1995-Present	1, 3, 4, 6, 7, 9, 10, 11, 14	191
Draft and implement an approved Long-Term Sediment Management Strategy (3.7.2.)	■	Toledo Harbor Planning Group & Strategy	Collaborator	1994	1, 3, 4, 6, 7, 9, 10, 11, 14	190
		Long-Term Sediment Management Strategy & Committee	None	1995-Present		190
Continued effort must be spent in identifying other potential sites and uses for confining dredged sediments. (3.7.2.)	■	Feasibility Study to Reuse Dredged Materials to Protect/Restore Woodtick Peninsula	None	1996-1998	1, 3, 4, 6, 7, 9, 10, 11, 14	191
		Production of Nu-Soil	None	1996 - Present		215
Work closely with the Army Corps and the Waterways Research Station to perfect more efficient methods of dredging and disposal to help alleviate many of the current problems. (3.7.2.)	■	Long-Term Sediment Management Strategy & Committee	None	1994-Present	1, 3, 4, 6, 7, 9, 10, 11, 14	190
Support the dredging of Swan Creek from mouth to dam at South Street. (4.7.2.)	–	Dredging of the Mouth of Swan Creek for Owens Corning World Headquarters	None	1997	11	192
A task force, similar to the Swan Creek Task Force associated with the administration of the City of Toledo, should be appointed to investigate the potential of dredging out the Ottawa River's contaminated bottom sediments. (5.7.2)	■	ACOE Ottawa River Dredging Evaluation Report	None	1976-1977	1, 3, 4, 6, 7, 9, 10, 11, 14	192
		ACOE Final Limited Reevaluation Report	None	1992		192
		Sediment Distribution of the Lower Maumee and Ottawa Rivers	Collaborator	1998-2001		193
		Ottawa River Remediation Team	Collaborator	1998-Present		228
		Ottawa River Remediation Team Dredging Analysis	Collaborator	2000		229
		Ottawa River Informational Brunch	Collaborator	2000		192
		Limited Reevaluation Report Update	None	2001-Present		193

ISSUE 9: DREDGED DISPOSAL (continued)						
Actions Suggested in the *Maumee RAP Recommendations Report*	**Action**	**Activity**	**Maumee RAP Involvement**	**Date**	**Beneficial Use Affected**	**See Page**
Such investigation on the Ottawa River should be coordinated with section 5.0, Landfills and Dumps, as there are extensive dumpsites (Dura, North Cove, Tyler, Stickney, DuPont) leaching to the river(5.7.2)	■	Ottawa River Remediation Team	Collaborator	1998-Present	1, 3, 4, 6, 7, 9, 10, 11, 14	228
		Ottawa River Delineation and Hot Spot/Risk Assessment	Collaborator	2000-2001		186
As a part of any final determination as to depth, core samples of the Ottawa River would need to be taken. (5.7.2)	◘	ACOE Final Limited Reevaluation Report	None	1992	1, 3, 4, 6, 7, 9, 10, 11, 14	192
		Sediment Distribution of the Lower Maumee and Ottawa Rivers	Collaborator	1998-2001		193
		Limited Reevaluation Report Update	None	2001-Present		193
The ownership of the creek bottom in the lower reach could be claimed by the States of Ohio and Michigan as this segment is controlled by the level of Lake Erie and can be considered part of Lake Erie. Therefore, an action would of necessity include these two governmental entities. (5.7.2.)	◘	Ottawa River Remediation Team	Collaborator	2000	1, 3, 4, 6, 7, 9, 10, 11, 14	228
ACTIVITIES NOT IN THE 1991 RAP RECOMMENDATIONS REPORT						
	●	Valuing the Ottawa River	Collaborator	1999	1, 3, 4, 6, 7, 9, 10, 11, 14	207
	◘	Clean Ohio Fund	None	2001 - 2005	1, 3, 4, 6, 7, 8, 11, 14	137

ISSUE 10: INDUSTRIAL DISCHARGERS						
Actions Suggested in the *Maumee RAP Recommendations Report*	**Action**	**Activity**	**Maumee RAP Involvement**	**Date**	**Beneficial Use Affected**	**See Page**
Conrail-Emerald Avenue						
The Ohio EPA should initiate enforcement action (3.3.1.2.)	–	–	–	–	–	–
It is recommended that an oil/water separator be installed to handle the oil from the sewers and it must have continuous maintenance (3.3.1.2.)	●	Conrail-Emerald Avenue Discharge Treatment	None	Since 1991	1, 3, 4, 6, 9, 10, 11, 14	194
The soil around the former diesel fueling area must be examined for groundwater contamination as well as the ditch that received the oil (3.3.1.2.)	●	Conrail-Emerald Avenue Discharge Treatment	None	Since 1991	1, 3, 4, 6, 9, 10, 11, 14	194
Pilkington (f.k.a. Libbey-Owens-Ford)						
Recommend methods, including capping and dewatering of the ponds be investigated to minimize creation of additional discharges from the ponds (3.3.2.2.)	●	Pilkington North America, Inc. Site Improvements	None	1991 - Present	1, 3, 4, 6, 9, 10, 11, 14	194
Collection systems should be developed and installed to collect any remaining discharge (3.3.2.2.)	●	Pilkington North America, Inc. Site Improvements	None	1991- Present	1, 3, 4, 6, 9, 10, 11, 14	194
BP Oil						
Recommend that the following options be considered: 1.) Construct a new sand filter bypass pipe. 2.) Construct a new pipe which would take water from the sand filter back-wash clarifier and reroute to the biological clarifier and belt press. 3.) Consider the addition of sand filter capacity. (3.3.3.2.)	●	BP Oil Site Improvements	None	1973-2001	1, 3, 4, 6, 9, 10, 11, 14	195
Sun Refining and Marketing Company						
Recommend that Sun proceed on schedule with their newly designed wastewater treatment system (3.3.4.2.)	●	Sun Oil Discharge Elimination	None	1993	1, 3, 4, 6, 9, 10, 11, 14	196
Conrail – Stanley Yards						
Recommend that the company submit an approved Spill Prevention, Control and Countermeasure (SPCC) plan outlining better management of storage facilities, use and disposal of waste oils and diesel fuel to address discharges into Cedar Creek. (6.3.1.2)	○	–	–	–	–	–
General Mills						
Recommend that Ohio EPA issue Findings and Orders or refer to the Attorney General for enforcement action. (5.3.1.2.)	–	–	–	–	–	–

ISSUE 10: INDUSTRIAL DISCHARGERS (continued)						
Actions Suggested in the *Maumee RAP Recommendations Report*	**Action**	**Activity**	**Maumee RAP Involvement**	**Date**	**Beneficial Use Affected**	**See Page**
General Mills should study the problem and follow Best Management Practices (BMPs) to reduce BOD in the roof storm water runoff problem. (5.3.1.2.)	●	General Mills Storm Water Discharge Management	None	1993	1, 3, 4, 6, 9, 10, 11, 14	196
If BMPs do not reduce BOD to permit levels then a pretreatment system must be installed or approval of the City of Toledo to accept the runoff into the sanitary sewer system. (5.3.1.2.)	●	General Mills Storm Water Discharge Management	None	1993	1, 3, 4, 6, 9, 10, 11, 14	196
ACTIVITIES NOT IN THE 1991 RAP RECOMMENDATIONS REPORT						
	●	Cargill Leachate Treatment System	None	1992	1, 3, 4, 6, 9, 10, 11, 14	196
	●	City of Toledo Pretreatment Program	None	1987-Present	1, 3, 4, 6, 9, 10, 11, 14	197
	●	City of Toledo Pollution Prevention Demonstration Project	None	1994	1, 3, 4, 6, 9, 10, 11, 14	197
	●	Perstorp Polyols Discharge Elimination	None	1996	1, 3, 4, 6, 9, 10, 11, 14	197

ISSUE 11: WASTEWATER TREATMENT PLANTS

City of Toledo

Actions Suggested in the *Maumee RAP Recommendations Report*	Action	Activity	Maumee RAP Involvement	Date	Beneficial Use Affected	See Page
Examine the construction of an additional final clarifier as well as the reconditioning of existing final clarifiers from a maintenance perspective. (3.1.1.2)	■	Toledo WWTP Improvements	None	Since 1991	All	198
Pretreatment by industrial users, coupled with monitoring and enforcement, will make the treatment plant less susceptible to problems caused by industrial wastes. (3.1.1.2)	■	Toledo WWTP Improvements	None	Since 1991	All	198
		City of Toledo Pretreatment Program	None	1987-Present		197
Need to lower the concentration of toxic organic compounds. (3.1.1.2)	■	Toledo WWTP Improvements	None	Since 1991	All	198
		City of Toledo Pretreatment Program	None	1987-Present		197
Continue to pursue all options for sludge management as well as to continue to optimize the digestion and dewatering processes. (3.1.1.2)	■	Toledo WWTP Improvements	None	Since 1991	All	198
		Toledo WWTP Residuals Management	None	1987-Present		198

City of Perrysburg

Facility's secondary treatment needs to be upgraded to the 5.4 mgd. (3.1.2.2.)	●	Perrysburg WWTP Improvements	None	1985-1992	All	198

City of Oregon

Continue constructing the new sewer line along Bay Shore Road. (3.1.3.2.)	●	Oregon WWTP Improvements	None	Since 1991	All	199
South Shore Park wastewater treatment plant needs to be abandoned and connected to the DuPont Road Plant on or before early 1991. (3.1.3.2.)	●	Oregon WWTP Improvements	None	Since 1991	All	199
Village of Harbor View tie into Oregon's DuPont Road Plant and that the subdivisions of Case Farm Beach, East Harbor and Immergrun be sewered and tied into the DuPont Road plant. (3.1.3.2.)	●	Harbor View/North Oregon Sewers	None	Since 1991	All	199

Lucas County

Examine expanding the plant from a hydraulic and solids handling perspective to continue to meet its NPDES permit requirements. (3.1.4.2.)	●	Maumee River WWTP Improvements	None	Since 1991	All	199

ISSUE 11: WASTEWATER TREATMENT PLANTS (continued)						
Actions Suggested in the *Maumee RAP Recommendations Report*	**Action**	**Activity**	**Maumee RAP Involvement**	**Date**	**Beneficial Use Affected**	**See Page**
The current sludge application contract provisions specifying immediate spreading and incorporation of all sludge removed from the plant site continue to be strictly enforced. (3.1.4.2.)	●	Maumee River WWTP Improvements	None	Since 1991	All	199
Additional sludge storage space should be provided at the facility in the event that field sites remain unavailable for long periods of time. (3.1.4.2.)	●	Maumee River WWTP Improvements	None	Since 1991	All	199
Increased digester capacity must be considered to enable the facility to have sufficient time to achieve a 50% volatile solids reduction of its sludge in anticipation of proposed federal sludge regs. (3.1.4.2.)	●	Maumee River WWTP Improvements	None	Since 1991	All	199
ACTIVITIES NOT IN THE 1991 RAP RECOMMENDATIONS REPORT						
	⊙	Berkey Improvements	None	Since 1991	All	199
	●	Genoa WWTP Improvements	None	Since 1991	All	199
	●	Holland Improvement	None	1990	All	200
	⊙	Swanton WWTP Improvement	None	1991-Present	All	200
	■	Updating the Areawide Water Quality Management Plan	Collaborator	1998-Present	All	200
	⊙	Reno Beach/Bono/ Howard Farms Sewers	None	2001-2003	All	201

ISSUE 12: PACKAGE PLANTS

Actions Suggested in the *Maumee RAP Recommendations Report*	Action	Activity	Maumee RAP Involvement	Date	Beneficial Use Affected	See Page
Recommend that efforts continue to extend sanitary sewer service to area of high package plant concentration (3.8.2., 4.8.2, 5.8.2., 6.8.2.)	■	Sanitary Sewer Extensions	None	1991-2001	2, 3, 6, 7, 9, 10, 11, 13, 14	202
Recommend that training of personnel to run these plants be *mandatory* (3.8.2., 4.8.2, 5.8.2., 6.8.2.)	○	Package Plant Operation and Maintenance Workshop	None	2001	2, 3, 6, 7, 9, 10, 11, 13, 14	202
		Voluntary Training for On-Site Personnel	None	Ongoing		202
Ohio EPA should issue "Package Plant Permits" to 1.Provide a way of tracking what package plants exist, and who owns and operates them. 2. Collect information on changes at the site, which should require the capacity of the plant to be increased. 3. Require that someone be given the responsibility for operating and maintaining the plant; and that person to participate in package plant O/M training. This training need not be equal to a Class I Operator's License. 4. Package plant permits should be simpler than NPDES Permits. 5. Flow records and other sampling data should be included in reporting, if it exists. Sample *requirements* should include a weekly 30-minute jar settling test from the final clarifier. (3.8.2., 4.8.2, 5.8.2., 6.8.2.)	◉	Ohio EPA Package Plant Permits	None	Ongoing	2, 3, 6, 7, 9, 10, 11, 13, 14	202
Recommend that facility information be updated each time a permit is renewed. (3.8.2., 4.8.2, 5.8.2., 6.8.2.)	●	Ohio EPA Package Plant Permits	None	Ongoing	2, 3, 6, 7, 9, 10, 11, 13, 14	202
Recommend that package plant training sessions be coordinated by Ohio EPA on the District level and participation must be mandatory for permit renewal. (3.8.2., 4.8.2, 5.8.2., 6.8.2.)	○	-	-	-	-	-
Recommend that Ohio EPA issue stricter requirements for operating package plants, and require licensing and training. (3.8.2., 4.8.2, 5.8.2., 6.8.2.)	●	Ohio EPA Package Plant Permits	None	Ongoing	2, 3, 6, 7, 9, 10, 11, 13, 14	202

ISSUE 12: PACKAGE PLANTS (continued)						
Actions Suggested in the *Maumee RAP Recommendations Report*	**Action**	**Activity**	**Maumee RAP Involvement**	**Date**	**Beneficial Use Affected**	**See Page**
Recommend the following revision to 3709.085 of the Ohio Revised Code : Contract for enforcement services (B) (2) "The board of health of a city or general health district may enter into a contract with the EPA to conduct on behalf of the agency inspection or enforcement services, for the purposes of Chapter 6111 The Board of Health of a city or general health district may charge a fee established pursuant to section 3709.09 of the Revised Code to be paid by the holder of a permit under Chapter 6111 of the Revised Code or the owner of resident of any such dwelling located in a special sanitary district for inspections conducted by the board pursuant entered into under this division. ~~, except that the board shall not charge a fee for those inspections conducted at any manufactured home park, recreational vehicle park, recreation camp, or combined park camp that is licensed under section 3733.03 of the Revised Code.~~" The section of text marked out should be deleted from the Revised Code. (3.8.2., 6.8.2.)	○	-	-	-	-	-
More frequent plant inspections by Ohio EPA and/or Health Departments are needed. (3.8.2., 4.8.2, 5.8.2., 6.8.2.)	⊙	Package Plant Inspections	None	Ongoing	2, 3, 6, 7, 9, 10, 11, 13, 14	203
Permits to Install (PTIs) should be more restrictive to prevent leapfrog development. (3.8.2., 4.8.2, 5.8.2., 6.8.2.)	■	Package Plant Permits to Install	None	Ongoing	2, 3, 6, 7, 9, 10, 11, 13, 14	203
In counties whose Health Departments have HB110 Contract, this information needs to be tracked by the Health Department and passed on to Ohio EPA (4.8.2.)	●	Package Plant Inspections	None	Ongoing	2, 3, 6, 7, 9, 10, 11, 13, 14	203

ISSUE 13: RECREATIONAL USAGE AND PUBLIC ACCESS

Actions Suggested in the *Maumee RAP Recommendations Report*	Action	Activity	Maumee RAP Involvement	Date	Beneficial Use Affected	See Page
Recommend that a new public launch ramp be considered at Toledo's Riverfront North area (undeveloped acreage north of Riverside Park) which has sufficient land for parking. (2.3.9.2)	○	-	-	-	-	-
Recommend that increased parking sites be considered in Perrysburg. (2.3.9.2)	○	-	-	-	-	-
Recommend that additional land be acquired at Ward's Canal by the ODNR. (2.3.9.2)	○	-	-	-	-	-
Public launch sites at Cooley Canal, Rossford and Farnsworth Metropark are generally considered adequate but recommend that all sites be evaluated on a regular basis by the agency administering the site. (2.3.9.2)	■	Cooley Canal Improvements	None	1998	None	204
		Rossford Improvements	None	Early 1990s		204
		Farnsworth Metropark	None	Mid-1990s		204
Recommend that private marina development be encouraged but new facilities should not be sited in wetlands. (2.3.9.2)	■	Planned Marina District	None	2001-Present	None	205
Recommend that suitable areas for marina development be identified. (2.3.9.2)	■	Toledo 20/20	None	2000	None	205
Recommend that all boat holding tanks be pumped out at marina pumpout facilities, and no bypass valves be permitted. (2.3.9.2)	●	Boat Sanitary Sewage Disposal Laws	None	1980 - Present	2, 3, 6, 7, 9, 10, 11, 13, 14	206
ACTIVITIES NOT IN THE 1991 RAP RECOMMENDATIONS REPORT						
	●	Western Lake Erie Recreation Area Mapping	None	1997-Present	-	206
	■	Swan Creek Tour Boat Landing	None	1998-Present	-	207
	■	Swan Creek RiverWalk	Collaborator	1998-Present	-	206
	●	Valuing the Ottawa River	Collaborator	1999	-	207

ISSUE 14: ATMOSPHERIC DEPOSITION

Actions Suggested in the *Maumee RAP Recommendations Report*	Action	Activity	Maumee RAP Involvement	Date	Beneficial Use Affected	See Page
Recommend that the State of Ohio provide businesses with on-site technical assistance to reduce toxic chemical releases, serve as an information clearinghouse on waste reduction, conduct educational programs on toxic chemical release reduction or elimination, thereby incorporation pollution prevention practices. (3.12.2)	■	Ohio EPA Office of Pollution Prevention	None	1989-Present	1, 3, 4, 6, 14	208
Recommend that State enabling legislation be enacted such as the "Tough on Toxics" bill, SB 234 and H.B. 611, known as the Toxic Chemical Release Reduction Act, or similar legislation. (3.12.2)	■	Ohio Revised Code Sections 3751.01-3751.03	None	1988, 1996-Present	1, 3, 4, 6, 14	208
Recommend the establishment of a major program of fellowships for engineering or industrial chemistry students, giving them training and field experience in conducting plant audits and assessing waste reduction project options, or establishment of courses for mid-career engineers and chemists to introduce them to this new waste management strategy. (3.12.2)	○	-	-	-	-	-
Recommend the creation of a new leadership entity within Ohio government that could use plant chemical use and discharge data to identify the greatest industrial waste reduction needs in the state, set priorities for the most effective expenditure of monies, and focus on technical assistance. (3.12.2)	●	Ohio EPA Office of Pollution Prevention	None	1989	1, 3, 4, 6, 14	208
Recommend creating a state office with specific responsibility for waste reduction, separate from environmental offices dealing with regulatory functions, to deal with "pollution prevention pays" (3.12.2)	●	Ohio EPA Office of Pollution Prevention	None	1989	1, 3, 4, 6, 14	208
Recommend that hazardous waste generating facilities for purposes of their own planning conduct periodic audits, develop plans and document their accomplishments in waste reduction. (3.12.2)	■	Regional Air Pollutant Inventory Development System (RAPIDS)	None	Ongoing	1, 3, 4, 6, 14	209

ISSUE 14: ATMOSPHERIC DEPOSITION (continued)						
Actions Suggested in the *Maumee RAP Recommendations Report*	**Action**	**Activity**	**Maumee RAP Involvement**	**Date**	**Beneficial Use Affected**	**See Page**
The data base in Ohio, if it is to be useful for setting waste reduction goals and assessing progress, must contain information covering at least two areas: 1) the amount and movement of specific chemicals as well as facts on waste reduction technologies available to specific industries; and 2)data are also needed on the amount of individual chemicals entering plants, the amounts consumed in production and the amounts leaving in product. (3.12.2)	■	Ohio EPA Office of Pollution Prevention	None	1989	1, 3, 4, 6, 14	208
Recommend that Permits-to-Install state estimated air emissions and computerized data base of this information be established, so that new sources can be properly modeled in context with existing sources. This should be done on an airshed basis. (3.12.2)	◉	Toxic Release Inventory	None	Ongoing	1, 3, 4, 6, 14	208
Ohio Technology Transfer Organization (OTTO) agents, as the official waste minimization information system for the state, need an infusion of funds to enhance and extend their training if they are to continue current educational programs. (3.12.2)	○	-	-	-	-	-
ACTIVITIES NOT IN THE 1991 RAP RECOMMENDATIONS REPORT						
	●	Deposition of Air Pollutants to the Great Waters: Third Report to Congress	None	2000	1, 3, 4, 6, 14	208
	●	Great Lakes Program	None	2000	1, 3, 4, 6, 14	209
	●	The Great Lakes Binational Toxics Strategy	None	2000-2006	1, 3, 4, 6, 14	209
	●	Integrated Atmospheric Deposition Network	None	2001-2003	1, 3, 4, 6, 14	209

ISSUE 15: HOME SEWAGE DISPOSAL						
Actions Suggested in the *Maumee RAP Recommendations Report*	**Action**	**Activity**	**Maumee RAP Involvement**	**Date**	**Beneficial Use Affected**	**See Page**
Recommend that local health departments establish a renewable operation permit and routine inspection program. (3.9.2.)	○	-	-	-	-	-
Such program should require a single-page inspection and inventory sheet to be filed by septage haulers with computerization by the local health department for ease of record keeping. (3.9.2.)	○	-	-	-	-	-
The complaint forms should be redesigned to take advantage of the inventory opportunity that complaint inspections provide. (3.9.2.)	○	-	-	-	-	-
Recommend that all forms, drawings, and other records be reassessed to determine if additional data that may prove useful to future, long-term management efforts could be provided. Such re-design should include computerization capability. (3.9.2.)	○	-	-	-	-	-
Recommend that the schedule of all fees be reevaluated annually to ensure that they accurately reflect the resources each activity involves and to account for inflationary factors. (3.9.2.)	○	-	-	-	-	-
Recommend that an annual inspection of all on-site household wastewater disposal system including on-lot and off-lot systems be initiated with a yearly minimum charge of $25 (3.9.2.)	○	-	-	-	-	-
ACTIVITIES NOT IN THE 1991 RAP RECOMMENDATIONS REPORT						
	■	Maumee Bay Bacteria Task Force	Collaborator	1996 - Present	2, 3, 6, 7, 9, 10, 11, 13, 14	228
	●	Tracing Diffuse Sources of Fecal Contamination	None	1997-1999	2, 3, 6, 7, 9, 10, 11, 13, 14	212
	●	Western Lake Erie Coastal Sanitary Survey	None	1998-1999	2, 3, 6, 7, 9, 10, 11, 13, 14	212
	●	Swan Creek Stream Keepers Program	Lead	1998-2000	2, 3, 6, 7, 9, 10, 11, 13, 14	172
	■	Protect Our Beaches Initiative	None	2001-Present	2, 3, 6, 7, 9, 10, 11, 13, 14	212

ISSUE 16: WATER TREATMENT PLANT SLUDGE						
Actions Suggested in the *Maumee RAP Recommendations Report*	**Action**	**Activity**	**Maumee RAP Involvement**	**Date**	**Beneficial Use Affected**	**See Page**
Recommend that land application of spent lime is the preferred reuse alternative. (3.13.2)	■	Ohio EPA Recommendations Land Apply Spent Lime	None	Ongoing	3, 6, 14	214
Continued efforts to support land application are needed. (3.13.2)	■	Ohio EPA Recommendations Land Apply Spent Lime	None	Ongoing	3, 6, 14	214
		City of Toledo Spent Lime Reuse	None	Ongoing		214

ISSUE 17: CONTROL OF INTRODUCED SPECIES						
Actions Suggested in the *Maumee RAP Recommendations Report*	**Action**	**Activity**	**Maumee RAP Involvement**	**Date**	**Beneficial Use Affected**	**See Page**
It is recommended that penalties be developed that would provide strong deterrents to the intentional and/or negligent release of exotic species. (2.3.5.2)	◎	National Invasive Species Act	None	1996	3	216
Recommend that the federal Exotic Species Control Act be passed and supported with permanent regulations prohibiting foreign freshwater ballast discharges be implemented. (2.3.5.2)	●	Nonindigenous Aquatic Nuisance Prevention and Control Act	None	1990	3	216
		National Invasive Species Act	None	1996		216
		Ballast Water Exchange Program	None	1990s-Present		216
Incentives should be developed that would promote increased levels of control on private wetlands. (2.3.5.2)	○	-	-	-	-	-
ACTIVITIES NOT IN THE 1991 RAP RECOMMENDATIONS REPORT						
	●	ODNR Purple Loosestrife Removal Plan	None	Ongoing	3, 14	224

ISSUE 18: LEAKING UNDERGROUND STORAGE TANKS						
Actions Suggested in the *Maumee RAP Recommendations Report*	**Action**	**Activity**	**Maumee RAP Involvement**	**Date**	**Beneficial Use Affected**	**See Page**
Recommend that the Petroleum Underground Storage Tank Release Compensation Board and the Fire Marshal give priority to AOCs with respect to any owner of six or few USTs or system with respect to the Petroleum Underground Storage Tank Linked Deposit Program. (3.11.2.)	○	-	-	-	-	-
Recommend that the Fire Marshal, by rule, designate AOCs as being sensitive for the protection of human health and the environment and adopt alternative rules regarding release containment and release detection methods for new and upgraded USTs in such areas. (3.11.2.)	⊙	Sensitive Area Designation	None	Ongoing	1, 3, 6, 11, 14	218
The rules governing USTs should incorporate the following measures in the Ohio regulations: 1.All new UST tanks and upgrades should include secondary containment and interstitial monitoring. 2. All new UST system piping and upgrades should be double walled. 3.All UST overfill prevention equipment should include a high level alarm that is triggered if the shut off/flow restricter fails. 4. Compliance with installation and upgrading requirements should be confirmed and approved by an on-site field inspection of the State Fire Marshal or a State Fire Marshal certified inspector (3.11.2.)	◉	BUSTR Tank Registration Upgrading	None	1998 - Present	1, 3, 6, 11, 14	218
In addition, the Fire Marshal in its authority to delegate by rule to certified fire safety inspectors of municipal corporations and township the inspections of USTs that sufficient funds are passed through from the State of Ohio to adequately conduct such inspection programs. (3.11.2.)	◉	BUSTR Tank Registration Upgrading	None	1998 – Present	1, 3, 6, 11, 14	218
		City of Toledo UST Registration/ Inspection and Remediation Funding Program	None	2001- Present		219

ISSUE 19: MOSQUITO CONTROL

Actions Suggested in the *Maumee RAP Recommendations Report*	Action	Activity	Maumee RAP Involvement	Date	Beneficial Use Affected	See Page
TASD should be invited to send representatives to any forums, seminars, or other educational programs regarding wetland delineation and Sections 401 and 404 of the Clean Water Act that may result from the RAP process. (2.3.7.2)	●	TASD Representation at Conferences/ Meetings	None	Ongoing	3	220
TASD should routinely query the Corps of Engineers prior to dredging, draining and filling operations, and comply with the 404 regulations. (2.3.7.2)	■	TASD Maintenance Communication	None	Ongoing	3	220
TASD may wish to reconsider the efficiency and size of the adulticide program and redirect funding in to the larvicide program, retaining the use of malathion for emergency situations. This work activity should be coordinate with the local health department. (2.3.7.2)	●	TASD Focus on Larvicide Program	None	Ongoing	3	220
		Discontinued Use of Malathion	None	1995-Present		220
TASD should be encouraged to seek input from environmental and fish and wildlife interests, and could perhaps be reflected in appointments to the Advisory Committee or through other arrangements with appropriate agencies or groups such as the Ohio Division of Wildlife, Toledo Environmental Services, Metroparks, Ohio EPA, and any interested environmental groups. (2.3.7.2)	◎	TASD Advisory Board & Annual Report	None	Ongoing	3	221
TASD should consider using a computer geographical information system (GIS) to integrate mosquito and breeding site data available from District records with cartographic data for wetlands and other areas. (2.3.7.2)	⊙	TASD Breeding Grounds Data	None	Ongoing	3	221

ISSUE 20: COMPREHENSIVE FISHERIES MANAGEMENT PLAN

Actions Suggested in the *Maumee RAP Recommendations Report*	Action	Activity	Maumee RAP Involvement	Date	Beneficial Use Affected	See Page
Reduce water quality problems caused by nonpoint source pollution related to agricultural practices including silt, nutrients (phosphates, nitrates, etc.), herbicides and insecticides. (2.3.1.2)	●	See Issue 1 - Agriculture Runoff for projects			3, 14	68
Close controls should be instituted regarding the use of herbicides and insecticides. (2.3.1.2)	●	Certified Crop Advisor	None	1995-Present	3, 14	74
Improved agricultural land management practices must occur throughout the Maumee River drainage basin. (2.3.1.2)	●	See Issue 1 - Agriculture Runoff for projects			3, 14	68
All toxicants if persistent (including acids, alkalines, heavy metals, oil, PCBs, etc.) must be eliminated from all discharges. (2.3.1.2)	●	Ohio EPA Programs to Eliminate/Reduce Toxicants	None	Ongoing	3, 14	222
		See Issue 2 – Landfills and Issue 10 – Industrial Discharger for additional projects				80, 194
Municipal waste treatment systems must control or eliminate nutrients (phosphates, nitrates, ammonia) and toxicants placed in their systems by industrial operations. (2.3.1.2)	●	Municipal Waste Treatment of Nutrients and Toxicants for Control or Elimination	None	Ongoing	3, 14	222
		See Issue 11 – Waste Water Treatment Plants for additional projects				198
New toxic landfills must not be allowed to develop and existing toxic landfills must be removed (2.3.1.2)	○	-	-	-	-	-
Aquatic habitats must be protected from extensive dredging and dredged material disposal caused by commercial shipping and recreational boating developments (2.3.1.2)	●	See Issue 9 - Dredged Disposal for projects			3, 14	190
The conversion of aquatic habitats into confined dredge disposal areas and non-water related landfill developments must be eliminated. (2.3.1.2)	○	-	-	-	-	-
Reasonable shore erosion protection practices should be continued only to maintain water area integrity. (2.3.1.2)	●	Swan Creek Streambank Stabilization Project	Lead	1996	3, 14	76
		Toussaint River Streambank Stabilization Project	Lead	1998		68
		NatureWorks Swan Creek Watershed Project	None	1996-1998		75
		Coastal Management Program	None	1997-Present		142

ISSUE 20: COMPREHENSIVE FISHERIES MANAGEMENT PLAN (continued)

Actions Suggested in the *Maumee RAP Recommendations Report*	Action	Activity	Maumee RAP Involvement	Date	Beneficial Use Affected	See Page
There must be fish and wildlife mitigation for any CDF construction. (2.3.1.2)	●	US ACOE and New Ohio Isolated Wetlands Regulations	None	2001	3, 14	141
Native fish populations must be protected from the unwanted introduction of exotic or non-native fishes that could reduce native fishes and usurp their habitat. (2.3.1.2)	◎	See Issue 17 – Control of Introduced Species for projects			3, 14	216
Federal laws must be passed to prohibit ocean-going vessels that contain fresh water ballast in the Great Lakes. (2.3.1.2)	●	Nonindigenous Aquatic Nuisance Prevention and Control Act	None	1990	3, 14	216
		National Invasive Species Act	None	1996		216
		Ballast Water Exchange Program	None	1990s-Present		216
Preserve all wetlands with special emphasis on estuarine wetlands which *are extremely* limited. (2.3.1.2)	◎	See Issue 3 – Wetlands and Open Space Preservation for projects			14	138
Wetland development should be a required mitigation for land and water developments regulated by the US Corps of Engineers. (2.3.1.2)	■	US ACOE and New Ohio Isolated Wetlands Regulations	None	2000	14	141
The ODNR should undertake review of all dams in the Maumee Basin of Ohio, and breach all such structures not currently in use. (2.3.1.2)	◎	ODNR Dam Review	None	Ongoing	3, 14	222
		Dam Removal at Camp Miakonda	None	2000-Present		222
Area governments should encourage applied research and land use practices to reduce turbidity to promote the development of a balanced wetland ecosystem (2.3.1.2)	■	See Issue 1 - Agriculture Runoff and Issue 9 - Dredged Disposal for projects			3, 14	68, 190
The education of the American public (including farmers, manufacturers, consumers, and government officials) will be necessary for habitat protection and enhancement to occur. (2.3.1.2)	■	See Issue 5 – Increase Public Participation and Awareness for additional projects			3, 14	158
		Quality of Life Survey	None	1995		223

ISSUE 21: COMPREHENSIVE WILDLIFE HABITAT MANAGEMENT PLAN

Actions Suggested in the *Maumee RAP Recommendations Report*	Action	Activity	Maumee RAP Involvement	Date	Beneficial Use Affected	See Page
All ditches and intermittent streams should be maintained with at least one continuous row of trees on both banks. (2.3.2.2)	◎	CREP	None	2000 - Present	14	72
		Toussaint River Improvement Incentive Program	Collaborator	1998-2002		68
Backing of existing plans to introduce statewide wetlands habitat protection legislation. (2.3.2.2)	◎	Clean Ohio Fund	None	2001 - 2005	3, 14	137
		US ACOE and New Ohio Isolated Wetlands Regulations	None	2001		141
Utilization of a wetlands inventory to identify wetlands in the AOC. (2.3.2.2)	◎	Maumee River Watershed Wetlands Protection & Enhancement Planning Project	Collaborator	2000-2002	3, 14	141
Incorporate fish and wildlife habitat education into public school systems through programs such as Project Wild, Aquatic Project Wild, and Learning Tree. (2.3.2.2)	■	Lucas, Wood and Ottawa SWCD Education Specialist Efforts	None	Ongoing	All	176
Land acquisition of targeted fish and wildlife habitat tracts. (2.3.2.2)	◎	See Issue 3 – Wetlands and Open Space Preservation and Issue 7 – Acquisition of Fish and Wildlife Habitat for projects			14	168, 182
Economic incentive for fish and wildlife habitat restoration and/or protection in the private sector. (2.3.2.2)	◎	Ottawa SWCD Private Lands Wetlands Restoration	None	1992-1994	14	143
		Wildlife Habitat Incentives Program (WHIP)	None	Ongoing		138
		Toussaint River Improvement Incentive Program	Lead	1997-2003		68
Green space zoning requirements to ensure adequate woodland habitat for terrestrial wildlife communities. (2.3.2.2)	○	-	-	-	-	-
Mitigation for all fish and wildlife habitat destruction by development. (2.3.2.2)	⊙	US ACOE and New Ohio Isolated Wetlands Regulations	None	Ongoing	14	141
Encourage the US Corps of Engineers to accept and enforce their responsibilities for wetland habitat protection under Section 404. (2.3.2.2)	⊙	US ACOE and New Ohio Isolated Wetlands Regulations	None	Ongoing	14	141

ISSUE 21: COMPREHENSIVE WILDLIFE HABITAT MANAGEMENT PLAN (continued)

Actions Suggested in the *Maumee RAP Recommendations Report*	Action	Activity	Maumee RAP Involvement	Date	Beneficial Use Affected	See Page
Develop a purple loosestrife control plan and obtain cost sharing for removal. (2.3.2.2)	⦿	ODNR Purple Loosestrife Removal Plan	None	Ongoing	3, 14	224
Require ditch banks to be no less than a 3:1 slope to allow for vegetation establishment. (2.3.2.2)	⦿	OSU Extension Drainage Channel Restoration Project	None	1999 - Present	3, 14	224
Develop stringent guidelines and strong penalties concerning discharges of toxic materials into waterways. (2.3.2.2)	■	Ohio EPA Programs to Eliminate/Reduce Toxicants	None	Ongoing	All	222
Develop a comprehensive plan utilizing both enclosed wetland management units and estuarine management areas. (2.3.2.2)	◉	See Issue 3 – Wetlands and Open Space Preservation for projects			-	138
Support legislation that would restrict sea going vessels from emptying freshwater ballast in the Great Lakes to eliminate introduced species.(2.3.2.2)	●	Nonindigenous Aquatic Nuisance Prevention and Control Act	None	1990	3, 14	216
		National Invasive Species Act	None	1996		216
Incorporate wildlife management plans into existing and future parklands and natural areas. (2.3.2.2)	■	Wildlife Management Plans	None	Ongoing	3, 11, 14	224
Establish goals and guidelines for establishing green space (humans per acre = # acres of green space). (2.3.2.2)	○	-	-	-	-	-
Strictly enforce and adhere to the federal Endangered Species Act. (2.3.2.2)	■	Endangered Species Act Enforcement	None	Ongoing	13	225

ISSUE 22: COORDINATING COMMITTEE AND INSTITUTIONAL FRAMEWORK

Actions Suggested in the *Maumee RAP Recommendations Report*	Action	Activity	Maumee RAP Involvement	Date	Beneficial Use Affected	See Page
A RAP Implementation Subcommittee of the TMACOG Areawide Water Planning Council (AWQPC) should be created with the existing AWQPC institutional framework (2.3.10.2)	●	Maumee RAP Committee	Lead	1987 - Present	All	226
		TMACOG Environmental Council	Collaborator	1998		227
This subcommittee should be made up from representatives from the AWQPC, public interest groups, major stakeholders and the appropriate state agencies having water quality responsibilities (2.3.10.2)	●	TMACOG Environmental Council	Collaborator	Ongoing	All	227
In addition, the AWQPC should incorporate the RAP recommendations into the TMACOG Areawide Water Quality Management Plan (AWQMP) (2.3.10.2)	■	TMACOG Environmental Council	Collaborator	Ongoing	All	227
		Updating the Areawide Water Quality Management Plan	Collaborator	1998-Present		200
ACTIVITIES NOT IN THE 1991 RAP RECOMMENDATIONS REPORT						
	■	Lower Maumee River Watershed Coordinator	Lead	2001 – 2007	All	226
	●	Expansion of the AOC	Lead	1993	All	226
	■	Toledo Brownfields Group	None	Early 1990s – Present	All	228
	■	Maumee Bay Bacteria Task Force	Collaborator	1996 - Present	All	228
	●	Maumee RAP Relationship Coordination	Lead	1998-Present	All	227
	■	Ottawa River Remediation Team	Collaborator	1998 – Present	All	228
	■	Northwest Ohio Pollution Prevention Team	Collaborator	1998 – Present	All	230
	■	Duck and Otter Creeks Partnership	Collaborator	1999 – Present	All	230
	■	Duck and Otter Creeks Watershed Coordinator	Collaborator	2000 – 2006	All	230

ISSUE 22: COORDINATING COMMITTEE AND INSTITUTIONAL FRAMEWORK (continued)

ACTIVITIES NOT IN THE 1991 RAP RECOMMENDATIONS REPORT (continued)

Actions Suggested in the *Maumee RAP Recommendations Report*	Action	Activity	Maumee RAP Involvement	Date	Beneficial Use Affected	See Page
	■	Maumee River Basin Partnership of Local Governments	Collaborator	2001-Present	All	231

ISSUE 23: LONG-TERM MONITORING OF AOC

Actions Suggested in the *Maumee RAP Recommendations Report*	Action	Activity	Maumee RAP Involvement	Date	Beneficial Use Affected	See Page
The monitoring program should be conducted by a consortium of local water quality monitoring entities including the University of Toledo, TESD, and the US Army Corps of Engineers (ACOE), and involving Ohio EPA with oversight being provided by the RAP Implementation Committee. (2.3.8.2)	■	TESD Sampling Activities in the AOC	None	1968-Present	All	232
		Heidelberg College Monitoring	None	1970-Present		233
		MAOC Project	Collaborator	1992-1998		233
		Ottawa River Sediment Screening Survey	Collaborator	1994-1996		234
		Maumee AOC Contaminated Sediment Project	Collaborator	1994-1995		234
		MAOC Project Extension	Collaborator	1998		234
		Sediment Toxicity Survey	Collaborator	1998		235
		Status & Trends in Suspended Sediment in the Maumee River Basin	None	1998-1999		236
		Ottawa River Geographic Initiative	Collaborator	1999-2000		237
		Duck Creek Wetlands Sampling Project	None	2001		235
Continuation of the TESD river and stream monitoring and the Corps of Engineers harbor sediment analyses and other data generated from NPDES dischargers and monitoring sites	■	TESD Sampling Activities in the AOC	None	1968 - Present	All	232
Acquisition of necessary equipment and a RAP boat to assist with education, monitoring and research efforts. (2.3.8.2)	●	MAOC Project	Collaborator	1992-1998	All	233
Establishment of a monitoring buoy at the mouth of the Maumee River for detection of spills and discharges. (2.3.8.2)	○	-	-	-	-	-
Initiation of sediment and biological studies, focusing on determination of contaminant level, to be done at four year intervals at each TESD site and at several BWQR sites. (2.3.8.2)	○	-	-	-	-	-
To have a relatively even workload each year, which could be useful for a long-term monitoring program, a specific group of sites could be studied each year with the objective of rotating back to the initial set of sites every fifth year. (2.3.8.2)	○	Ohio EPA Total Maximum Daily Load (TMDL) Program	None	Ongoing	1, 3, 4, 6, 7, 9, 14	237

ISSUE 23: LONG-TERM MONITORING OF AOC (continued)

Actions Suggested in the *Maumee RAP Recommendations Report*	Action	Activity	Maumee RAP Involvement	Date	Beneficial Use Affected	See Page
Recommended study sites and schedules are as follows: **Year 1**: Maumee River (mile-0.9, 0.0, 1.7, 4.5, 8.1, 13.4, 20.4), Otter Creek (4 BWQR sites), and Duck Creek (2 BWQR sites) **Year 2**: Ottawa River (mile 1.6, 3.1, 4.7, 6.0, 7.0, 8.9, 10.9, 14.1), Hill Ditch, Silver Creek, and Shantee Creeks **Year 3**: Swan Creek (mile 0.6, 1.3, 2.6, 3.9, 5.0, 10.6), Heilman Ditch, Delaware Creek and Grassy Creek **Year 4**: Maumee Bay (10 Sites)	●	TESD Sampling Activities in the AOC	None	1968-Present	All	232
		Heidelberg College Monitoring	None	1970-Present		233
		MAOC Project	Collaborator	1992-1998		233
		Status & Trends in Suspended Sediment in the Maumee River Basin	None	1998-1999		236
		Student Watershed Watch	Collaborator	1989-Present		162
		Swan Creek Stream Keepers Program	Lead	1998-2000		172
		Ohio EPA TMDL Program	Collaborator	1999-Present		237
Sampling would be most productively done during August or September and should be done at the same time of the year each year, for determining long-term trends	■	TESD Sampling Activities in the AOC	None	Ongoing	All	232
		Ohio EPA Sampling Activities in the AOC	None	Ongoing		238

ISSUE 24: 404 AND 401 EDUCATION

Actions Suggested in the *Maumee RAP Recommendations Report*	Action	Activity	Maumee RAP Involvement	Date	Beneficial Use Affected	See Page
There is a need to inform local governments and developers about the provisions of Sections 404 and 401 of the Clean Water Act. (2.3.6.2)	⊙	See Issue 3 - Wetlands and Open Space Preservation and Issue 5 –Increase Public Participation and Awareness for projects			14	138, 158
Topics covered in forum(s) and/or seminar(s) in held in the Toledo area should include the new wetland delineation procedures, National Wetland Inventory (NWI) maps, functions and values of wetlands, and hydric soils. (2.3.6.2)	⊙	Wetlands: A Valuable Resource? Farm-City Forum	Collaborator	1993	3,14	240
		Project Tracking by Locals	Collaborator	Ongoing		240
		Maumee River Watershed Wetlands Protection & Enhancement Planning Project	Collaborator	2000-2002		141
The governments should also be made aware of their right to review and comment upon proposed permits and encouraged to monitor permit public notices in their jurisdictions. (2.3.6.2)	⊙	Project Tracking by Locals	Collaborator	Ongoing	14	240

ACTIVITY DESCRIPTIONS

Issue 1 - Agriculture Runoff

Maumee River Basin Sediment Reduction Project
1992 -1997

Description: Financial incentives to reduce agriculture runoff were offered to landowners in over 25 counties in Ohio, Michigan and Indiana through the NRCS and the ACOE. Each county had a committee which developed plans to reduce topsoil loss. Landowners could work with the county SWCD to create sediment reduction plans.

Lead Organization: USDA NRCS

Collaborator(s): Ohio EPA, county SWCDs, local farmers

Conservation Tillage Equipment Buy-Down Program
1992

Description: This program provided farmers with "buy down" money to be applied toward the purchase of conservation tillage equipment. Over 400 participants received money from this highly successful program, with farmers matching grant funds at a rate of about nine to one. This effort, combined with the Buffer Zone Initiative have reduced sediment flowing into the Maumee River by approximately 15% or slightly over 100,000 cubic yards of material.

Lead Organization: Managed by USDA NRCS and Joint Advisory Board (with a member from each participating county), funded through an Ohio EPA 319 grant

Collaborator(s): USDA NRCS, Maumee RAP, Ohio EPA, 17 county SWCDs, local farmers

Toussaint River Improvement Incentive Program
1997-2003

Description: Financial incentives were made available to landowners to install filter strips, set aside floodplain land, and to practice conservation tillage. The goal of the program was to reduce sediment and nutrient loadings into the Toussaint River and Lake Erie.

Toussaint River Improvement Incentive Program, Phase I (1997-2000)
Incentives were available to landowners along the 36-mile mainstem of the Toussaint River. Landowners made a five-year commitment to maintaining these conservation practices.

Phase I activities and events included the creation of two full-color booklets illustrating the success of the project, media/information events and conservation buffer area signage. Water quality assessments of the river were made before practices were put into place and then again after they were established.

Toussaint River Streambank Stabilization Project (a part of Phase I) (1998)
As a part of the Phase I program, the Toussaint River Streambank Stabilization project was conducted on May 16, 1998. Volunteers stabilized a private landowner's highly eroded streambank on the Toussaint River by anchoring recycled Christmas trees and planting shrubs to establish dense root systems.

Lead Organization: Maumee RAP Open Space and Wetlands Action Group, using equipment provided by the Ohio DNR Stream Team

Collaborator(s): Lucas SWCD, Ottawa SWCD, N-Viro, TMACOG, Wood SWCD, Toledo Area Metroparks, Midwest Environmental Consultants, City of Toledo, Wood County Plan Commission, Ohio EPA, USDA NRCS, The Nature Conservancy, US Fish and Wildlife Service Ottawa National Wildlife Refuge, Ohio EPA

Phase I was financed through a $275,000 Ohio EPA 319 Grant with local match of $208,000 through assistance from the Ohio DNR Division of Soil and Water Conservation and many other partners.

Phase I Final Statistics				
Number of Contracts	**Buffer Strips (linear feet)**	**Floodplains (acres)**	**Conservation Tillage (acres)**	**$ Amount Committed**
Ottawa County				
22	64,541	186.43	576.71	$122,050.50
Sandusky County				
8	12,075	0	123.00	$11,057.00
Wood County				
27	65,597	46.82	760.80	$77,427.00
Tri-County County				
57	142,213	233.25	1460.51	$210,534.50

Toussaint River/Packer Creek Improvement Incentive Program, Phase II (2000-2003) This financial incentives program is available to landowners to establish filter strips and set aside floodplain lands for all rivers, streams and ditches in the Toussaint River and Packer Creek watersheds. It is also available for acreage already enrolled in the CRP.

Phase II Interim Statistics-Wood County				
Number of Contracts	**Buffer Strips (linear feet)**	**Floodplains (acres)**	**Conservation Tillage (acres)**	**$ Amount Committed**
Filter Strips				
90	175,813	192.9	Pending	$46,400
Concentrated Flow Filter Strips				
15	21,195	23.3	Pending	$16,450

**Ottawa County Interim Statistics not yet available*

Phase II was financed through a $300,000 Ohio EPA 319 Grant with assistance from the Ohio DNR Division of Soil and Water Conservation and many other partners. The Wood County Commissioners provided a bonus incentive payment to encourage landowner sign ups.

Lead Organization (Phase I and II): Maumee RAP Agricultural Runoff Action Group, Toussaint River/Packer Creek Improvement Incentive Advisory Board

Collaborator(s) (Phase I and II): Maumee RAP Agriculture Runoff Action Group, Ohio EPA, USDA-NRCS, Wood SWCD, Ottawa SWCD, Sandusky SWCD, Lucas SWCD, Farm Bureau, Ohio DNR, Ohio State University Extension, Wood and Lucas County Pheasants Forever Chapter, Ottawa-Erie-Sandusky Pheasants Forever Chapter, TMACOG, University of Toledo, Wood County Engineers, Wood County Commissioners, Midwest Environmental Consultants, N-Viro International

Conservation Reserve Program (CRP)
Ongoing

Description: This volunteer-based program provides rental payments and cost-share assistance to establish long-term, resource conserving vegetative covers on eligible land. This eligible land consists of cropland planted in an agricultural commodity that has been owned or operated a minimum 12 months prior to the end of the sign-up period. The land must also meet one of the following conditions: it must be considered highly erodible land, or cropped wetland, it could be subject to scour erosion, located in a national or state CRP, or associated with non-cropped wetlands.

Lucas: 50 acres Wood: 3,769 acres Ottawa: 3,141 acres

Lead Organization: SWCDs

Collaborator(s): USDA-NRCS, FSA

Strip-Till Equipment Rental Program
1997-1999

Description: The Wood SWCD leased a 12-row DMI Precision Air Caddy, tool bar and air unit strip-till equipment to landowners to promote the concept of strip-tilling to farmers to enhance yields and still allow for residue to be left on the field to control sediment and nutrient transport. This equipment was especially interesting to farmers who were experiencing corn yield reductions when planting into wheat stubble. This equipment was leased to the Wood SWCD for two years.

Equipment was promoted at the Wood County Fair. Ninety people attended a field demonstration for the equipment.

Lead Organization: Wood SWCD (funded by a grant from the Great Lakes Commission)

Collaborator(s): Conservation Action Program (CAP), Wood County Con-Till Club, Sediment Reduction Committee, NRCS, Bowling Green FFA, Otsego FFA, Luckey Farmers, Inc., Mid-Wood, Ohio Agriculture Research and Development Center, Ohio EPA, OSU Extension, S&D Application, Maumee RAP, TMACOG

Residue Management & Erosion Control Demonstration Project
2001-2003

Description: The Wood SWCD received a grant to purchase a Roller Harrow, a type of strip-till equipment, and to test the equipment in Northwest Ohio soils along a tillage test plot in Wood County. The grant also contained an educational portion to teach the producers of the area about this form of crop tillage.

Lead Organization: Wood SWCD (funded by a grant from the Great Lakes Commission)

Ohio Phosphorus Reduction Strategy
1994

Description: Federal funding and local contributors helped local farmers to develop and implement methods of phosphorus reduction. Three counties have attained 100% of their phosphorus reduction goals while seven others have attained over 70% of the reduction goals.

Lead Organization: ODNR and USDA

Ohio Lake Erie Buffer Program
1998 – Present

Description: The Ohio Lake Erie Buffer Program was initiated as an opportunity to go a step further in improving the health of the Lake Erie ecosystem. This program offers the opportunity for government and private agencies to cooperate and pool their resources, with the common objective to maximize enrollment of Ohio land into available conservation buffer programs. The goal of the program is to enroll 50,000 acres of new conservation buffers into available conservation reserve programs by the end of 2005. The four options of the buffer program (filter strips, efficient farming, windbreaks, and wetlands) allow the farmers to customize the buffer program to their given area. The program consists of these strategic objectives to increase participation of the buffer program:

- Market the agricultural, environmental and financial benefits of installing filter strips, forest buffers, windbreaks, and wetland restorations on Ohio farms
- Develop long-term strategies to increase the potential of Ohio's conservation buffers to be profitable and self-sustaining practices
- Obtain additional field-level technical assistance
- Launch a recognition program promoting awareness of conservation buffer accomplishments within the Lake Erie watershed
- Encourage city, county, and regional groups to implement buffer projects in their respective jurisdictions
- Seek out members of the agri-business community to promote the benefits of conservation buffer systems to their respective customers
- Develop effective strategies to initiate the widespread use of urban conservation buffer practices throughout the Lake Erie basin
- Provide administration, coordination, & assistance to ensure the Lake Erie Buffer Program monies are utilized in the most fiscally responsible & beneficial way
- Demonstrate innovative conservation buffer practices available to Ohio farms and

create partnerships between public and private organizations
- Monitor Ohio's Lake Erie conservation buffer progress and assess benefits of widespread buffer installation throughout the Lake Erie watershed.

Lead Organization: USDA-NRCS

Collaborator(s): Ohio Lake Erie Commission; US ACOE; US Geological Survey; Pheasants Forever; Ohio DNR Divisions of Wildlife, Soil and Water Conservation, Natural Areas and Preserves; Ohio Corn Growers Association; Ohio State University Extension; Ohio EPA; ODA; OSU Sea Grant; Toledo-Lucas County Port Authority; Black River RAP; Maumee RAP; Cuyahoga RAP; Erie Basin Resource Conservation and Development; and Ohio Wetlands Foundation

Ohio Coastal Nonpoint Pollution Control Program
2000

Description: This plan addresses nonpoint pollution concerns throughout the Lake Erie basin. To alleviate nonpoint pollution, a method of source management is necessary. This program outlines recommendations to improve Lake Erie water quality, including:

- Agricultural Sources - monitoring and targeting nonpoint pollution, developing incentive programs, initiating prevention efforts, developing abatement initiatives, and developing partnerships with industries.
- Urban Areas
- Marinas and Recreational
- Hydromodification
- Wetlands and Riparian Areas
- Critical Coastal Areas and Impaired or Threatened Waters
- Developing Sustainable Watershed Protection Programs
- Water Quality Monitoring and Tracking Techniques

Lead Organization: Ohio DNR

Ohio Lake Erie Conservation Reserve Enhancement Program (CREP)
2000

Description: Announced in April 2000 by Governor Bob Taft, the $201 million conservation partnership between the State of Ohio and the US Department of Agriculture will protect Lake Erie and 5,000 miles of Ohio streams by reducing soil erosion and runoff pollution in Lake Erie's Northwest Ohio watersheds. This federal and state program pays farmers and other landowners to plant or create filter strips, riparian buffers, wetlands, hardwood tress, wildlife habitat, and field windbreaks along tributary streams in 27 Northwest Ohio counties in the following major watersheds: Maumee River, Portage River, Sandusky River, Huron River, Vermilion River, Black River, and the Lake Erie direct drainage. The goal is to enroll 67,000 of the 600,000 eligible acres along watercourses and suitable sites in the western Lake Erie watershed. This state money helped leverage $20 million in Federal money to expand the Buffer Zone Program.

Eligible producers receive a payment from USDA based on 175% of the base annual soil rental rate for riparian buffers, wetland restoration, hardwood tree planting, and field windbreaks. They receive 155% of the base annual soil rental rate payment for

filter strips and wildlife habitat. If placed in contract extensions or 5 - 15 year agreements, Ohio DNR will pay bonus incentives per acre. In 2000, Ottawa County had 90 acres registered in this program. In 2000 –2001, Wood County had 525.3 acres in CREP. Lucas County had four cooperators signed up, totaling between 50 and 60 acres. From May 1 – December 31, 2000, the Ottawa River-Ten-Mile Creek watershed five cooperators had 12.9 acres registered in filter strips, wetlands and windbreaks in Fulton and Lucas counties. Total 2000 CREP figures:

CREP STATISTICS

	Funds	Acres
Grand Total Encumbered State Bonus	$1,659,179	
Grand Total Encumbered Acre		5,743.08
Grand Total State Bonus Paid	$179,010	
Grand Total Acres Enrolled		816.45
Encumbered and Enrolled Funds and Acres Combined	$1,838,189	6559.53

Practice	Encumbered (acres)	Enrolled (acres)	Total (acres)
Hardwood Tree Planting	35.3	20.9	56.2
Wildlife Habitat	50.7	0	50.7
Field Windbreak	320.63	17.05	337.68
Filter Strip	4043.35	749.8	4,793.15
Riparian Buffer	538.9	0	538.9
Wetland Restoration	731.7	28.7	760.4
Total	5,743.08	816.45	6,559.53

Lead Organization: US Department of Agriculture NRCS, Ohio DNR Division of Soil and Water Conservation

Collaborator(s): FSA, local SWCDs, Ohio DNR Divisions of Forestry and Wildlife, Northwest Ohio Field Windbreak Program

Pheasants Forever Seeding Program
Ongoing

Description: Pheasants Forever Chapters assist SWCDs, USDA NRCS and FSA and landowners to plant native grassland habitat suitable for pheasants and other wildlife. They often assist with CRP and CREP plantings. They planted most of the 3,141 acres of Year 2000 registered CRP land in Ottawa County.

Lead Organization: Ottawa-Erie-Sandusky Pheasants Forever Chapter, Lucas-Wood Pheasants Forever Chapter

Ottawa County Native Grasses Seeder
1992-1993

Description: Each year two drills and two tractors are loaned from the Pheasants Forever planting program to seed areas of Ottawa County. Similar to the grasses seeder programs in Lucas and Wood Counties, a few thousand acres are planted each year with the help of CRP and CREP planters. Since the start of the program approximately ten years ago, there have been close to 100 participants who have planted over 3000 acres of prairie grasses.

Lead Organization: Ottawa County Soil and Water Conservation District

Collaborator(s): Pheasants Forever program

Wood County Native Grasses Seeder
1997-1998

Description: A stubble drill was purchased through a grant from the Lake Erie Protection Fund to lend assistance to farmers in planting native grasses along the Toussaint River and other streams in Lucas and Wood counties. These plantings are intended to create a wildlife corridor in floodplains and filter strips, and will also help combat soil loss and reduce sediment load into area streams.

Lead Organization: Wood and Lucas County Pheasants Forever Chapter (partially funded through a grant from the LEPF).

Collaborator(s): Wood SWCD, Ottawa-Erie-Sandusky Pheasants Forever Chapter

Certified Crop Advisor Program
1995-Present

Description: The Certified Crop Advisor Program is offered by the American Society of Agronomy. Through this voluntary program, professional certifications are issued to individuals who then advise producers in areas of nutrient management, soil and water management, integrated pest management, and crop management. It is an international program, but is overseen locally by a state board. There are 651 certified crop advisors in Ohio and 13,313 internationally. The board monitors credentials and creates recommendations and standards for producers. The candidates are tested based on work experience and education and are required to maintain certification by taking part in 40 hours of continuing education every two years.

Lead Organization: American Society of Agronomy

Northwest Ohio Field Windbreak Program
1977 - Present

Description: The Northwest Ohio Field Windbreak Program celebrated its 25th anniversary in 2001

by planting a record 104 miles of trees to protect farmland soil from erosion. A total of 61 field windbreaks (rows of trees and other vegetation that slow wind velocities on farm fields to reduce soil erosion) were planted in nine northwestern Ohio counties -- the largest such planting in the program's 25-year history.

A total of 54,000 seedlings, including hardwood trees, conifers and shrubs, were planted in Allen, Defiance, Fulton, Henry, Paulding, Putnam, Van Wert, Williams and Wood counties.

Since 1977, more than 700 row miles of windbreaks have been planted as part of the program, which is open to landowners in a total of 17 Ohio counties where soil erosion from wind is a special problem. Landowners participate in the program voluntarily, many have participated more recently because of the financial incentives provided by the Lake Erie CRP.

An initial planting of the row field windbreaks is provided, along with herbicides and replanting the following season if needed due to weather conditions. This program has helped reduce soil erosion, protected crops from wind damage and enhanced wildlife habitat. Ottawa County has 15 miles of field windbreaks, Wood County has just under 31 miles of field windbreaks. Lucas County has added more than 5 miles of field windbreaks since 1995. (Windbreak statistics are for entire counties, not just the AOC.)

Lead Organization: Ohio DNR Division of Forestry

Collaborator(s): 17 county Soil & Water Conservation Districts, the US Department of Agriculture Natural Resource Conservation Service and FSA, Pheasants Forever, and Ohio DNR's Divisions of Forestry, Soil & Water Conservation and Wildlife.

NatureWorks Swan Creek Watershed Project
1996 -1998

Description: Landowners along Swan Creek were provided financial incentives to enhance wetlands, plant trees or grasses, or let the riparian area vegetation grow back naturally. Nonpoint source pollution was reduced by restoring and preserving riparian areas. A total of 26 landowners participated, placing 128 acres into 15 or 30-year easements. Bank stabilization projects were also completed through this project.

Sponsors: Lucas SWCD, Fulton SWCD (funded in-part by an Ohio DNR NatureWorks grant)

Collaborator(s): Landowners, BGSU

Manure Management Plans
Ongoing

Description: Guidelines are provided to assist livestock operators to manage livestock waste through storage, stabilization, transportation, or application of animal waste to land. The plan describes systems to store, treat and transport manure, characteristics of manure and wastewater, amount and topography of land available for application, methods and items of land application, crop rotations, and the condition and nutrient status of the soil. This plan is required if the facility has 1,000 or more animal units or

if there is controlled direct discharge from the site. If the facility does not meet either of these requirements, the Livestock Waste Management Plan is suggested by the Ohio EPA rather than required.

Lead Organization: Ohio EPA, USDA-NRCS

Soil Doctor
1994

Description: The *Soil Doctor*, an electronic device that measures soil components, was lent to Wood County farmers to customize fertilizer applications. The *Soil Doctor* ensured that the proper amount of fertilizer was spread on fields, saving money and reducing potential fertilizer runoff.

Lead Organization: Conservation Action Project (CAP); Wood SWCD

Hertzfeld Poultry Manure Composting Project
1998

Description: Goals of this project include:
- To determine the appropriate times to spread manure to decrease potential pollution in runoff.
- To control excess manure produced (to address phosphorus restrictions).
- To control both flies and odor.
- To diversify the income of the Hertzfeld's.

A facility measuring 62' by 400' was constructed to finish the composting process. Using carbon sources, the manure from the poultry farm is treated and compost is formed. This was to provide an environmentally-friendly form of manure disposal and to reduce the amount of farm runoff in the streams.

Lead Organization: Wood SWCD

Collaborator(s): Hertzfeld Poultry (funded by Ohio DNR NatureWorks Grant Program)

Swan Creek Streambank Stabilization Project
1996

Description: Volunteers, including students involved in the Maumee Bay Watershed Project (now Student Watershed Watch), helped stabilize a large bank along Swan Creek in the Swan Creek Metropark. With the advice and equipment provided by the Ohio DNR Stream Team, volunteers anchored recycled Christmas Trees, anchored mattings of dogwood and willow branches, and planted dogwood and willow stakes. This effort successfully stabilized the bank.

Lead Organization: Maumee RAP Open Space and Wetlands Action Group (funded through a Great Lakes Commission grant to ODNR Stream Team)

Collaborator(s): Toledo Area Metroparks, Lucas SWCD, City of Toledo DNR, Maumee Bay

Watershed Project participants, Kroger, TMACOG

Influential Farmer Meeting
February 9, 1995

Description: Innovative farming practices in Northwest Ohio were highlighted during this ½-day workshop in Napoleon. Landowners presented their success stories, including the incorporation of livestock manure and city sludge into a no-till program, Soil Doctor technology to assist with nitrogen fertilizer applications, fertility and herbicide management programs, para-tilling after wheat and then no-tilling corn, and the use of no-till with additional crops added to the rotation. Approximately 50 landowners attended this event.

Lead Organization: Maumee RAP Agricultural Runoff Action Group, Conservation Action Project (CAP)

Collaborator(s): Wood SWCD, Henry SWCD

"From Satellites to Earthworms: Improving Farm Management" Workshop
August 27, 1996

Description: Workshop to demonstrate new conservation practices that could provide top yields as well as improve current farming methods. Discussions included no-till management practices for corn, improved nutrient management systems, global positioning system technology, successful long-term no-till rotations, and multiple benefits of long-term no-till management to improve earthworm population and soil structure. More than 100 landowners and interested citizens attended this meeting.

Lead Organization: Maumee RAP Agricultural Runoff Action Group and the Wood County Con-Till Club (funded in part through a small grant from the Ohio LEPF)

Collaborator(s): Wood SWCD, NRCS, Ohio DNR, Bowling Green FFA, OSU Extension, LG Seeds, MidWood Inc., Luckey Farmers, CIBA Crop Protection, Ohio EPA, and TMACOG.

"Is Your Drinking Water Safe: A Closer Look at Pesticides" Public Meeting
February 29, 1996

Description: This seminar explored pesticides and herbicides in drinking water. Presentations were given by the Heidelberg College Water Quality Laboratory and the Environmental Working Group. Discussions on drinking water improvements took place between farmers, chemical companies, Ohio EPA, and water treatment plants. More than 80 people attended this meeting at the Edison Club in Maumee.

Lead Organization: Maumee RAP Agricultural Runoff Action Group

Collaborator(s): Wood SWCD, Ohio EPA, TMACOG, N-Viro

Environmental Quality Incentives Program (EQIP)
Ongoing

Description: This program provides technical, educational and financial assistance to eligible farmers and ranchers to address soil, water and related natural resource concerns on their farmland in an environmentally beneficial and cost-effective manner.

Acres Enrolled in EQIP in 2001:

Lucas County	None
Wood County	152.5
Ottawa County	None

Lead Organization: USDA, ODNR and SWCDs

Issue 2 – Landfills, Dumps, and Brownfield Sites

Duck Creek Watershed

Buckeye Pipeline Company *(3321 York Street, Oregon)*

Site History: The Buckeye Pipeline Company operates a petroleum products pipeline pumping station which transports commodities such as gasoline, No. 2 heating oil, kerosene, etc. In November of 1992, 63,000 gallons of unleaded premium gasoline was released and migrated into Otter Creek.

Site Investigation (1996)
The site was investigated as a part of the Ohio EPA Maumee Area of Concern Project Phase II Site Assessments in 1996. Soil samples showed elevated levels of benzene, toluene, ethyl benzene and zylenes, probably attributable to pipelines, and associated leakage, spills and activities at the site. Evidence doesn't suggest migration from the site to Otter Creek. Benzene was also detected at elevated levels in the ground water below the site. This may be due to migration from onsite soils into the water table. It was recommended this site be further evaluated.

Lead Organization: Ohio EPA (funded in part by a grant from US EPA)

Consaul Street Dump *(2510 Consaul St., Toledo)*

Site History: The Ohio Brick Company owned a portion of this site from 1913 to 1952 and used it for clay mining and brick manufacturing. This property was then sold to Kuhlman Builders Supply and Brick Company in 1952. The depression that remained from the mining operations was subsequently filled with waste materials. The Consaul Street Dump was operated from 1948 to 1966. The City of Toledo Streets Division operated it from 1958 to 1966. The site is alleged to have received sludge, solvents, acids, and other organic wastes. DDT was sprayed twice per week for pest and vector control and the waste was burned regularly. Two major underground pipelines traverse the property: a main City of Toledo high-pressure drinking water line and a Sun Oil petroleum products line.

A trailer park development (Parkway Mobile Home Village) was built on the north side of the site in 1970 and still exists on the site. By 1971, this site was known to be leaching into Duck Creek. At that time an estimated 100,000 gallons/day were flowing into Duck Creek. A French Drain leachate collection system was installed in 1975. In 1988, the system overflowed and about 300,000 gallons/day entered Duck Creek. Since 1988 the City of Toledo has done numerous investigations at the site. As of 1991 the system was discharging approximately 8,000 gallons/day into the sanitary sewer.

Site Investigation (1982-1983)
In 1982 the Ohio Department of Health began a human health study that was completed in 1983. On May 12, 1983 Ohio EPA and ODH issued a report stating that no human heath threat exists at the site.

In 1983 leachate was reported discharging into Duck Creek at approximately 3.5 gallons per hour. Solvents and hydrocarbons were not detected in samples taken.

(1984)
In 1984, a sampling program was started by the City of Toledo to determine the leachate quality.

(1987)
In 1987 the Ohio EPA conducted a Preliminary Site Assessment. The shallowest aquifer was reported to be measuring high levels of biochemical oxygen demand (BOD) and chemical oxygen demand (COD) and light hydrocarbons.

(1988-present)
Since 1988 the City of Toledo has done numerous investigations at the site. In addition to previous listings, heavy metals, cyclohexane, and contamination from domestic waste were noted.

(1996)
In 1996 the site was investigated as a part of the Ohio EPA Maumee Area of Concern Project Phase II Site Assessments. Analytical results from the soil samples showed elevated levels of contaminants in the soil and adjacent Duck Creek sediments. From the available data it was difficult to identify the origin of the contaminants in Duck Creek, therefore this site was recommended for further investigation.

Remediation (1975)
In 1975 the City of Toledo contracted to have a leachate collection system installed and connected to the Wheeling Street sanitary sewer system.

(1991)
Water began to surface at the dump in 1990, presumably from a leak in the City of Toledo's high-pressure drinking water line. Holes in the line were found in 1991 and repaired. This water line will not be used when the city finishes the new line being constructed in 2001.

(1992)
In August 1992 the extreme southwest corner of the trailer park property was filled with clean hard fill and covered with two feet of soil material. The fill was placed in an area adjacent to the playground.

Lead Organization: City of Toledo

Gulf Oil Refinery and Terminal *(2935 Front St., Toledo)*
(a.k.a. Chevron)

Site History: This 228-acre site has a long history of industrial operations. Activities included a dry dock and iron foundry dating back to 1850. In 1888 the Paragon Refining Company began operating on the northwest part of this site producing gasoline, fuel oils, lubricating oils, and wax. Gulf bought the property from Paragon in 1939, modernized and expanded the refinery, and produced sulfur, propane, automobile fuels, jet fuel, home heating oil, # 6 oil, and asphalt stock. Portions of the property acquired by Gulf during this expansion had been used for the manufacture of lubricating oils, roofing and road materials and retail gasoline marketing. Gulf closed the refinery in 1981 and decommissioned the refinery process equipment in 1984. The following year Gulf and Chevron merged. Several remaining dilapidated buildings were razed in 1994.

Leaded tank bottoms and asphalt waste were land farmed here. According to a former employee, acid waste, leaded tank bottoms (tetra ethyl lead), and miscellaneous unknown waste in drums were buried at the site. Concerns at this site are hazards from lead and caustic sludges and oily wastes. Dissolved petroleum hydrocarbons were occasionally found within the perched groundwater adjacent to areas of soil contamination. A small layer of creosote DNAPL (dense non-aqueous phase liquid) was located within a portion of the property previously used to manufacture roofing tar and asphalt. This site is now under the auspices of the Ohio EPA Voluntary Action Program (VAP).

Site Investigation (1996)
In 1996 this site was investigated as part of the Ohio EPA Maumee Area of Concern Project Phase II Site Assessments. It was decided that further investigation of this site was not required because cleanup is underway under the Ohio EPA VAP program.

Lead Organization: Ohio EPA (funded in part by a grant from US EPA)

Remediation (1995-2001)
A substantial clean up effort is taking place on this site under the Ohio EPA VAP program. Activities to remedy various environmental impacts include removal, in-place stabilization, and containment. Specific activities conducted to date have included:

- Removal of surface soils at various locations on the property that exceeded the applicable standards.
- Closure of a 2-acre sludge pit.
- Remediation of hydrocarbon-impacted soils within an active 3rd-party pipeline right-of-way and at the location of a former crude oil sampling station.
- Removal of contaminated soils from around a former oil production well and from within the cavity of two large, former underground storage units.
- Neutralization & stabilization of acid sludge in two buried disposal pits.
- Stabilization of lead-containing backfill within two large, former underground storage units.
- Stabilization of sediments in the former East and West Boilerhouse Ponds.
- Installation of a 2500-lineal foot slurry wall along the Maumee Riverfront to contain hydrocarbon-impacted groundwater and phase-separated hydrocarbons.
- Construction of a semi-passive system to treat groundwater collected upgradient of the slurry containment wall.

Activities completed by August 2001, included remediation of the creosote DNAPL and associated soil impacts. Chevron received a Covenant-Not-to-Sue from Ohio EPA in December 1998 for the 13-acre York Street area of the property. Sale of this portion of the site closed in March 1999 and industrial redevelopment is complete. In cooperation with the City of Toledo, a No Further Action (NFA) Letter for the Front Street right-of-way adjacent to the Toledo Port Facility was submitted to Ohio EPA in March 2001. NFA Letters for the remainder of the property will be submitted to Ohio EPA upon completion of remedial activities. Several third parties interested in industrial redevelopment of the property have entered into confidentiality agreements with Chevron to assess the suitability of the site to their needs.

Lead Organization: Chevron, City of Toledo

Collaborator(s): Ohio EPA

Millard Ave. Overpass *(Millard Ave. between Front St. and Otter Creek Rd., Toledo and Oregon)*

Site History: The project area was used for widening, realignment and grade separation of Millard Ave. in order to bypass a railroad yard. The overpass built in 1997-1998 crosses over Otter and Duck Creeks. During this project two areas of concern were identified. The Duck Creek Fill area is located along both sides of Duck Creek in an area that was once a wetland bordering the creek. The time of filling and materials used are unknown, however, it is suspected that some form of municipal and/or industrial waste may have been contained in the fill material. The Otter Creek Swamp area appears to be a natural wetland bordering Otter Creek. There is no evidence of manufacturing, dumping, or filling in this area and the primary concern here is contaminated leachate from surrounding landfills.

Site Investigation (1992) (1993)
In the early 1990s the cities of Toledo and Oregon hired Bennett & Williams, Inc to conduct environmental studies of the proposed right-of-way. Their findings and analytical results are available in various reports and are summarized in their final report "Environmental Assessment and Analysis of Response Alternatives" (August 23,1992, Revised June 1993). Elevated concentrations of PAHs and TPH (total petroleum hydrocarbons) were found in some surficial soils in the Otter Creek Swamp. Forty-three CERCLA hazardous substances were detected in the Duck Creek fill soil samples at concentrations exceeding background, with many zones having elevated concentrations of PAHs, metal, and non-chlorinated VOCs. TPH in many samples greatly exceeded the 105 mg/kg –threshold value for the Ohio Bureau of Underground Storage Tank Regulation program. Benzene was elevated in two samples. Six CERCLA hazardous chemicals were found in ground water as well as fill.

Lead Organization: City of Toledo, City of Oregon

(1996)
In 1996 this site was investigated as part of the Ohio EPA Maumee Area of Concern Project Phase II Site Assessments. No sampling was done because the overpass project was in progress and because Centerior Energy (Toledo Edison), the owners of the Duck Creek area that was proposed for sampling, refused access to the investigation team. The Phase II Site Assessment used the Bennett & Williams data. Based upon those findings it appears that both the Duck Creek Fill area and the Otter Creek Swamp may be posing a threat to the watershed and it was recommended that this site be referred for further investigation.

Lead Organization: Ohio EPA (funded in part by a grant from US EPA)

Norfolk & Southern Railway *(2750 Front Street, Toledo)*
(a.k.a. Norfolk & Western, Ironville Yard)

Site History: Located on the eastern edge of N&S property, north of the dead-end of Penoyer Rd., this site is a Norfolk & Southern wastewater treatment works that was designed to capture and treat potentially contaminated waste/storm water from the Ironville

railroad yard prior to its release to the Duck Creek. It was constructed in the early 1970s.

Site Investigation (1996)
The site was investigated as part of the Ohio EPA Maumee Area of Concern Project Phase II Site Assessments in 1996. The site was designated as no further remedial action planned.

Lead Organization: Ohio EPA (funded in part by a grant from US EPA)

Paine Street Landfill *(Northwest corner of Paine Street and Consaul Street, Toledo)*

Site History: Local residents reported to Ohio EPA that an old landfill existed at this site northwest of the intersection of Paine Street and Consaul Street. Hydraulic Pressed Brick Co. owned the site from 1909-1951. In an aerial photo taken in 1940 the site had been excavated (for clay to use in brick making). A trucking terminal was operating here from 1965-1992. George Gradel Co. now owns the site.

Site Investigation (1996)
The site was investigated as part of the Ohio EPA Maumee Area of Concern Project Phase II Site Assessments in 1996. Interviews with long time residents did not confirm that this site had been a landfill, therefore it was designated as no further remedial action planned.

Lead Organization: Ohio EPA (funded in part by a grant from US EPA)

Remediation (2000-2001)
The City of Toledo has an utilities easement and is constructing a high-pressure water line through the property. During excavation in 2001, contractors encountered fill materials and high levels of cyanide in the groundwater. The excavated soils were disposed of at BFI and ground water was pumped, treated, and hauled away by Cousins Waste Control. Toledo intends to determine the source of the cyanide.

Lead Organization: City of Toledo

Phillips Petroleum *(275 Millard Ave., Toledo)*
*(*a.k.a. Toledo Philblack Plant, River East Industrial Park)

Site History: The Phillips Petroleum Plant operated on this 45 acre site from 1971 to 1981. It manufactured and housed carbon black that is pure carbon in the form of soot. During the plant's operations, four wastewater-settling ponds were used to hold cooling water. When the plant closed in 1981, residue was left in the ponds and they were backfilled with construction debris. In 1986 the property was sold to River East Industrial Park (Lorenzen, Inc.).

Three spills occurred at the plant on December 1985, November 14, 1989 and November 29, 1990. On November 14, 1989 there was a spill from an abandoned city sewer broken by a contractor. It resulted in 60 gallons of water and oil discharging into the Maumee. On November 29, 1990 the BP pipeline that crosses this property broke and released lighter diesel fuel and decant oil that migrated to Duck Creek. Ohio EPA and the US Coast Guard monitored the cleanup.

Site Investigation (1987)
On November 23, 1987 Ohio EPA completed a potential hazardous waste site assessment of this site.

(1996)
In 1996 this site was investigated as part of the Ohio EPA Maumee Area of Concern Project Phase II Site Assessments. Sampling of on-site soils and sediments from Duck Creek showed elevated levels of SVOCs, however almost all SVOCs found were PAHs that may be associated with petroleum products from numerous oil refineries and/or sites in the area. The investigation team noted a thin oily seam at a depth of ten feet in the soils and a visible oily sheen in the trench ground water at each of the soil sample excavation sites. This site was recommended for further investigation.

Lead Organization: Ohio EPA (funded in part by a grant from US EPA)

Remediation (1986)
In 1986 fill material, carbon and water were removed from the settling ponds that were then backfilled with native clay. Silt, carbon, carbon black and water were removed from the plant's sewer system and the manholes and catch basins were cleaned and filled with cement. A bentonite clay slurry wall was constructed between the pond area and the east fence to contain the old residential sewer laterals in this area.

Lead Organization: Phillips Petroleum

Maumee River Watershed

Bassett Street Warehouse *(600 Bassett Street, Toledo)*
(a.k.a. Oldberg Manufacturing Company, Schachner Property, Maumee Refining, Greise Brothers)

Site History: The Oldberg Manufacturing Company, located on this 3.8 acre site, was built in the 1890s. Oldberg operated a "Bonderite Unit" which discharged milky colored soluble oils, chromium and phosphates into a sump which went into the sanitary sewer system. This property has had numerous owners and tenants over the years.

Located at 600-1, Bassett St. Maumee Refining stored and treated waste oil which was then reportedly resold to refineries and other businesses as raw material. At least 12 tanks were located on the property at one time. According to Ohio EPA, 6 of these tanks contained solvents. Maumee Refining was ordered to close in January 1985 by the City of Toledo.

The former owner (until December 1994) was convicted of operating a hazardous waste treatment, storage and disposal facility without a permit, falsifying manifest information, lack of waste analysis, and lack of record keeping.

In June 1993 most of the Oldberg Building burned to the ground. The current owner of the site is the City of Toledo.

Site Investigation (1992)
In January 1992 Midwest Environmental Consultants conducted a Preliminary Inspection of the property. This inspection noted 200 or more 55 gallon drums of

waste which were stored in deteriorating containers on the site. These were believed to have contained urethane, plasticizers, organosol, plastisol, paints, tri-chrome blue and acid cleaner. Some of the drums were labeled as corrosive or flammable.

(2000)
In May 2000 Toledo Environmental Services of the City of Toledo conducted a Phase I Environmental Site Assessment .

Remediation (1992)
From June through August 1992 US EPA conducted the removal of approximately 338 55-gallon drums (18,590 gallons) of unknown materials, 8745 gallons of paint related materials, 2695 gallons of flammable liquid and other substances from the Oldberg Building.

Lead Organization: US EPA (contractor: I.T. Corporation)

Florence Avenue Dump *(Florence Ave., Toledo)*

Site History: This 20 acre dump site currently encompasses at least 10 parcels with 6 known owners. It received household waste of local residents from 1945 into the 1960s. A number of homes have been constructed on the waste. Local residents don't recall dumping by industries or the City of Toledo.

Site Investigation (1996)
In 1996 the site was investigated as a part of the Ohio EPA Maumee Area of Concern Project Phase II Site Assessments. Several semi-volatile organic compounds, heavy metals, pesticides, and PCBs were all found at levels that exceeded three times the background levels. The presence of pesticide and metal contamination was confirmed in the drainage ditch adjacent to the site. This site was referred for further investigation.

Lead Organization: Ohio EPA (funded in part by a grant from US EPA)

Gulf Oil Refinery and Terminal *(2935 Front St., Toledo)* - see Duck Creek Watershed
(a.k.a. Chevron)

Inland Chemical *(Ash Street, Toledo)* **–** see Libbey Plant 27

Koppers *(2563 Front St., Toledo)*
(a.k.a. Toledo Coke)

Site History: This site is 51 acres and has been used since 1914 for coking operations. About 195 tons of naphthalene were produced every year and stored in a waste pile. The coal tar that was produced was reused in the coking process. In 1982 Koppers notified Ohio EPA of its intent to continue to generate hazardous waste. By 1986 US EPA and Ohio EPA determined a significant amount of coal and coke was accumulating at the site and required Koppers to either apply for a RCRA Part A or close the waste pile. In May 1987 Toledo Coke purchased the property. The current owner is Beazer East (subsidiary of the Hanson Company).

Site Investigation (1987)
In March 1987 an inspection of the site was conducted and 72 areas of concern were identified. A wastewater sample collected indicated concentrations of phenols, ammoniated substances, and cyanides were present in levels exceeding the pretreatment standards under the Clean Water Act. Additional contaminants have been found at the site such as benzene, toluene, phenol, and naphthalene.

Lead Organization: Koppers (contractor: A.T. Kearney)

(2001-Present)
Hull & Associates, Inc. is currently preparing a VAP Phase II Property Assessment for the site.

Remediation (1997-Present)
Significant voluntary remediation has been done on the site such as the demolition of structures and the removal of potentially contaminated materials, including tarry and petroleum products from within former vessels, vaults, and the structures.

Lead Organization: Beazer East (contractor: Hull & Associates, Inc.)

Libbey Plant 27 *(940 Ash Street, Toledo)*
(a.k.a. Owens-Illinois, Inland Chemical)

Site History: In the 1800s approximately 10,000 cubic ft. of furnace waste and other wastes were buried at this site. Arsenic and chromium are present in the soil. Ohio EPA investigated vinyl chloride in groundwater leaving the site and migrating into Detwiler ditch during construction of the Greenbelt Parkway. Officials at Libbey feel these problems may be related to Inland Chemical operations on this property that was purchased by Owens Illinois in the early 1970s. Libbey Glass, Inc. purchased this property from Owens Illinois in 1987. This plant is still operating.

Remediation (1997)
A hydraulic gradient containment system has been installed under Findings and Order from Ohio EPA-DSW. It consists of a pump and treat system that is permitted by Ohio EPA and a barrier wall to prevent down-gradient infiltration of the site.

Lead Organization: Libbey Glass, Inc.

Old Peanut Hill Dump *(Oak Street, near Akron St., Oaklawn Dr., and Richford St., Toledo)*

Site History: The Old Peanut Hill Dump was used as a dump from the 1920s into the 1940s. In the 1950s houses were built on the site. According to residents, the site was used for disposal of household and commercial waste until the late 1940s when it was closed and backfilled.

Site Investigation (1996)
The site was investigated as part of the Ohio EPA Maumee Area of Concern Project Phase II Site Assessments in 1996. The site was designated as no further remedial action planned.

Lead Organization: Ohio EPA (funded in part by a grant from USEPA)

Phillips Petroleum *(275 Millard Ave., Toledo)* - See Duck Creek Watershed
*(*a.k.a. Toledo Philblack Plant, River East Industrial Park)

Plaskon *(2829 Glendale Ave., Toledo)*

Site History: The former Plaskon facility manufactured plasticizers, resins, and various molding compounds between 1947 and 1990. Libbey-Owens Ford owned the property from 1947 to 1953. Allied Chemical owned it from 1953 to 1979. Hillside Capital owned it from 1979 until 1984 and Rohm and Haas acquired the property in 1984. It was subsequently sold in 1996 to Allied-Signal (currently Honeywell). The numerous buildings on the site were demolished in 1991. Potential contaminants of concern include methylene chloride, acids, alcohols, xylenes, toluene, and oils. The primary contaminants of concern are methylene chloride and phthalates.

Honeywell submitted documents to Ohio EPA detailing corrective actions that have occurred. This site is scheduled for retail development.

Site Investigation (1986)
In April 1986 Geraghty & Miller, Inc. did a Hydrogeologic Assessment of Plaskon Electronic Materials, Inc. for Plaskon. Fourteen monitoring wells were installed. Ground water flow in the shallow glacial till aquifer was found to be both downward and lateral toward surface streams. Three areas within the plant site were found to have ground water quality changes from past plant activities. The Focused Feasibility Study which was a part of this report recommended remediation involving containment of the NAPL that was on the property and collection of the NAPL floating on the ground water.

(1998)
In August 1998 a Phase II Field Investigation was conducted on the property for Allied Signal, Inc. by Parsons Engineering Science, Inc. to obtain additional information on the presence and magnitude of chemicals of concern and to determine the extent of impacted groundwater and soils at this site.

(2000)
In January 2000, Parsons Engineering Science, Inc. prepared a Remediation System Closure Report on the former Plaskon facility for Honeywell, Inc.

(2002)
A Work Plan for Monitoring Well Installation (Following Site Redevelopment) was submitted by Parsons for Honeywell in January 2002.

Remediation (1991-1999)
The former owner/operator of the facility implemented a voluntary groundwater remediation system (i.e. pump and treat) in addition to the removal of product storage tanks. The contaminated water contained phthalate at a dischargeable concentration of 15 ppm or less. The collected groundwater was tested every two weeks before it was discharged into the sanitary sewer system. This groundwater remediation system was decommissioned in 1999.

Lead Organization: Rohm and Haas, Allied Signal, Honeywell

(2000)
In January 2000 a remediation closure report was filed with Ohio EPA by Parsons Engineering Science, Inc. for Honeywell, Inc. This report summarized the results of the remediation that had taken place since 1991. This included the fact that more than 70,000 gallons of water were recovered from the Methylene Chloride Tank , more than 400 gallons of liquid phthalate was recovered from the Plasiticizer Tank Area, and more than 1,200 pounds of dissolved phthalate was removed.

Lead Organization: Honeywell

South Avenue Dump *(103 South St., Toledo)*
(a.k.a. South and Western Dump, Toledo Municipal Sanitary Landfill, S/W Dump)

Site History: This is an 50-acre site active from 1950 to1957. It was found to contain demolition wastes and reportedly contains municipal and industrial wastes with heavy metals and organics. An Ameritech (Ohio Bell) building is currently located on the former landfill site.

Site Investigation (1975)
A Potential Hazardous Waste Site Preliminary Assessment was conducted by US EPA. They found mixed municipal and industrial wastes contaminated with heavy metals, trace metals and organics.

(1998)
A soil exploration and environmental study was conducted by Bowser-Morner. It indicated that fill material extended 33-35 feet below grade. Ground water sampling was completed and low levels of lead were found.

(1999)
In 1999 CDL Engineering completed a Phase 1 Environmental Site Assessment.

(2001)
A Phase 1 Property Assessment was conducted by Hull & Associates, Inc. for the City of Toledo in 2001.

Sun Oil Company *(1819 Woodville Rd., Oregon)* – See Otter Creek Watershed

TAG Chemicals, Inc. *(100 Edwin Dr., Toledo)*

Site History:

Adjacent to a Norfolk and Southern rail line and located on a 8.6 acre site on the Maumee River in downtown Toledo just west of the I 75 crossing, TAG Chemicals is a distributor of chemical products. TAG Chemicals acquired the property from Norfolk and Southern Railways and is surrounded by railway property. Bulk chemicals are blended and packaged to meet customer requirements. Alcohol and Toluene waste (D001) is generated from draining product transfer lines. It routinely operates as a large or small quantity generator of hazardous waste and has had repeated, numerous violations of RCRA regulations. Runoff from the site is diverted to a basin/spill control impoundment which discharges to Toledo's sanitary sewer. In 1983 TAG Chemicals leased some above ground storage tanks to Maumee Refining for the storage of waste oil. When TAG Chemical realized that Maumee Refining was involved in illegal waste activities, they notified Ohio EPA and requested assistance.

During Ohio EPA's investigation of Maumee Refining, two tanks (#37 and #39) were sampled and were ignitable resulting in TAG being identified as a hazardous waste storage facility. TAG sold the oil left by Maumee Refining and closed (decontaminated) the two tanks.

Site investigation (1989)
A hazardous waste interim status inspection was conducted by Ohio EPA in August 1989 to assess compliance with state and federal regulations applicable to a generator, and treatment, storage and disposal facility of hazardous waste. Violations were found.

(1990)
In August 1990 Ohio EPA (representing US EPA) conducted a RCRA inspection of the TAG to determine the RCRA compliance status of the facility and noted that land disposal requirements were being violated.

(1991)
In April 1991 US EPA conducted a Visual Site Inspection to determine whether or not releases of hazardous materials had occurred or were occurring.

(2000)
In March 2000 Ohio EPA visited TAG and found Tag to be receiving and storing hazardous waste.

Remediation (1990)
As a prerequisite for RCRA permit withdrawal, TAG Chemicals submitted a Closure Plan for the container storage area of the site. The plan called for the decontamination of Tanks # 37 and 39 by rinsing until contaminant levels did not exceed 1 mg/l but it did not sample the soil for contamination. The closure was completed and approved by Ohio EPA in 1990. In September 1990 TAG requested change of classification from generator and storer to just generator.

Unitcast *(1440 East Broadway, Toledo)*

Site History: Unitcast is a 25 acre property that was once used as a cast iron foundry. During its course of operation, the company operated a residual landfill for the disposal of foundry sand. The landfill was located on the western 6 acres of the property. Piles of soil of unknown origin, piles of spent foundry sand, and an abandoned underground storage tank (UST) were located on the site. In 1993 Unitcast filed for Chapter 11 bankruptcy protection, and in 1995 Chapter 7 liquidation proceedings began. The company ceased disposal of foundry sand in 1995.

A closure/post closure plan for the landfill was approved by Ohio EPA in 1995 and shortly thereafter Fisher Acquisition & Development Corporation took over the property. This closure has not been completed. Enforcement actions against Fisher by the Ohio Attorney General's Office are pending.

A preliminary design has been created to convert portions of a railroad corridor that is adjacent to the property into a roadway. This road would connect many landlocked industrial properties in East Toledo. The successful development of this road is contingent upon the completion of the Unitcast property assessments and eventual redevelopment of this site.

Site Investigation (1995)
In June 1995 Ohio EPA Division of Hazardous Waste investigated a report of some abandoned chemical waste in the building on this site. They found approximately 100+ drums that appeared to be oily material. Samples from the drums were taken and analytical results found that the materials were not hazardous.

(1996)
In August 1996 TolTest completed sampling of several sand, slag and foundry sand piles on this property. Samples were analyzed for RCRA metals and benzene, toluene, ethylbenzene and xylene. Several samples contained elevated lead and chromium. One sample reported the highest levels for lead (315 mg/kg) and chromium (75.8 mg/kg).

In October 1996, a follow up TCLP analysis was conducted on the sample that reported high in August. It was found that TCLP metal concentrations were less than regulatory level and therefore not characteristically hazardous.

Lead Organization: Erie Environmental (contractor: TolTest, Inc.)

On September 21, 1996 Ohio EPA DERR responded to a request for technical assistance from the Toledo Fire Department regarding securing the site from the public. When walking through the building, approximately 200-300 drums of waste were discovered.

On September 26, 1996 Ohio EPA determined that no additional material had been added to the site since the 1995 investigation. The formerly spread out drums had been consolidated and better quantified.

(2001)
Hull & Associates, Inc. conducted a Phase I Site Assessment of this property for the River East Economic Revitalization Corporation. RiverEast plans to purchase the property and seek a private developer or long-term tenant that will participate in the

remediation and redevelopment of the property.

Remediation (1997)
The buildings on the site were demolished in 1997 by Fisher Acquisition & Development Corporation, however the concrete slabs and other likely underground structures (docks, pits, utility tunnels, sewer, etc.) still remain.

Lead Organization: Fisher Acquisition & Development Corporation

Ottawa River Watershed

Cleveland Metals *(2351 Hill Ave., Toledo)*
(a.k.a. New York Central Railroad, Fanner Manufacturing, HLR Enterprises)

Site History: Prior to 1954 this property was owned by New York Central Railroad. It was purchased by the Cleveland Metal Abrasive Company (Fanner Manufacturing) in 1954. They operated on the site until 1980. During this period of time molten steel was stored in a holding reservoir. This 8 acre site had a one acre impoundment for the storage of waste generated from the manufacturing of metal steel abrasives. This impoundment discharged to Fleig Ditch through a storm sewer. HLR Enterprises has owned the property since 1982.

Site Investigation (1993)
This site was investigated as part of the Ohio EPA Maumee Area of Concern Project Phase I Site Assessments. Acetone was found in all samples near the former impoundment and Fleig Ditch. Phenanthrene, floranthrene, and pryene were found in all samples with the highest levels closest to the train tracks. Metals, particularly arsenic, cadmium, copper, magnesium, lead, and zinc were found with the highest concentration in Fleig Ditch upstream of the site. It is possible that chlorinated solvents were deposited in the impoundment, since dichloroethene was detected at two soil sample locations. Demolition debris prevented getting deeper samples which would have been beneficial for assessing the former impoundment. It was undetermined whether or not the source of the contamination was this site or the adjacent railroads. Since metals are rather immobile, this site did not appear to be impacting the Ottawa River and thus No Further Action was recommended.

Lead Organization: Ohio EPA (funded in part by a grant from US EPA)

Dura Avenue Landfill *(Dura Ave., Toledo)*

Site History: The Dura Ave. Landfill is a 70-acre site bordered to the north and west by industrial/commercial property and to the south and east by Sibley Creek and the Ottawa River, respectively. The landfill was operated by the City of Toledo for 28 years from December 1952 to June 1980. It accepted municipal waste throughout the years. Commercial and industrial wastes were accepted for 16 years from 1952 to 1968. The landfill stopped accepting commercial waste in July 1968 after the passage of City of Toledo ordinance 554-68. The facility has a total estimated fill volume of 4.65 million cubic yards of waste, which may include 750,000 gallons of potentially hazardous liquid waste and 13,000 cubic yards of potentially non-liquid hazardous waste.

Site Investigation (1989-1995)
The Remedial Investigation/Feasibility Study report for the Dura Landfill was finished in October 1989. The Feasibility Study was revised in 1990 and 1992 and then completed in 1995. During site investigations groundwater, leachate and soil monitoring had shown PCBs, volatile and semi-volatile organic compounds and heavy metals.

Lead Organization: City of Toledo

Collaborator(s): Ohio EPA and numerous industrial and commercial PRPs

Remediation (1993-1994)
Since the Dura Landfill was believed to be a major source of PCB contamination in the Ottawa River and Lake Erie, a containment wall and a leachate collection and pretreatment system was constructed in 1993 –1994. This wall along the banks of the Ottawa River is 780 feet long and 40 feet high, with another 40 feet extending below ground level. The plan for the wall was finished in June 1993. Construction for the wall started in November 1993 and it was completed January 1994. This Interim Remedial Measure was completed June 1994 at a total of five million dollars. It has collected and treated an average of over 160,000 gallons of leachate per month for a total of over 8 million gallons as of October 2000.

Lead Organization: City of Toledo (contractor: Cousins Waste Control)

Collaborator(s): Ohio EPA, Ohio Attorney General's Office, consulting firms

(1999-2001)
In the spring of 1999, final remedial activities began under a Consent Order agreed to by the City of Toledo, a group of industrial parties and Ohio EPA. A landfill cover system consisting of various layers of soil and geosynthetic materials was installed after grading and filling. The majority of the grading and filling materials came from the adjacent Royster property. (see – Royster Property for more details) This was completed in 2001 at a total cost of about 8.5 million dollars. Toledo financed the capital costs through a loan from the Ohio Water Pollution Control Loan Fund and PRP funds are to be placed in a dedicated fund to cover any remaining capital costs and 30 years of operation and maintenance.

Lead Organization: City of Toledo

Collaborator(s): Ohio EPA and numerous industrial and commercial PRPs

Harrison Junk Yard *(10259 ½ Dorr Street, Spencer Township)*
(a.k.a. Reneger)

Site History

This 2.9-acre site is an alleged illegal dump. The Lucas County Health Department referred this site to the Lucas County Prosecutor's Office in 1995. Ownership changed in December 2001, however the new owner has been unable to secure a clear title because of pending legal action by the Prosecutor. Although waste has been removed, there are still concerns about waste that was buried there.

Site Investigation (1994)
Ohio EPA investigated this site because of allegations it was being used for illegal

dumping. A strong chemical odor was detected, however no drums were seen. The site contained no vegetation. On a return trip Ohio EPA noted several sink holes and an oily sheen on the soil.

(1995)
The Lucas County Health Department investigated the site and noted new waste material and referred the case to the Prosecutor's Office.

Herbert E. Orr Company *(3863 Lagrange Street, Toledo)*
(a.k.a. Devilbiss Manufacturing)

Site History: This 8 acre site was originally occupied by Devilbiss Manufacturing which manufactured paint and material application equipment. It was purchased by Herbert E. Orr Company in 1985 and operated as an electrophoretic paint deposition facility, mainly processing metal stampings and forgings for the auto industry. Herbert E. Orr Company sold the property in 1993 to IBC, Inc. Precision Cut-off of Toledo now occupies the building.

Site Investigation (1990)
Ohio EPA investigated this site in 1990 and found gross lead contamination of the soil in a relatively small area.

Lead Organization: Ohio EPA

(1991)
In August 1991 Cousins Environmental Services collected soil samples in preparation for the regulatory closure plan.

Lead Organization: Herbert E. Orr Co.

(1993)
This site was investigated in 1993 as a part of the Ohio EPA Maumee Area of Concern Project Phase I Site Assessments and was recommended for no further action.

Lead Organization: Ohio EPA (funded in part by a grant from US EPA)

Remediation (1991-1992)
Remediation included removal of a storage tank and 180 cubic yards of the surrounding contaminated soils.

Lead Organization: Herbert E. Orr Co.

Jeep/DaimlerChrysler *(1000 Jeep Parkway, 4000 Stickney Ave., and 4400 Chrysler Drive)*
(a.k.a. Overland, American Motors Company, Chrysler Corporation)

Site History: The automotive industry has been strongly tied to Toledo for nearly a century. Although the companies have changed, their commitment to Toledo has not. The original Parkway plant dates back to 1910 as a part of Willys-Overland. The plant became the Toledo Assembly Plant when Chrysler acquired the property from

American Motors Company in 1987. The Jeep celebrated its 50th anniversary in 1991 and the Cherokee was discontinued in 2001.

The Stickney Ave. plant was built in 1941. It was acquired from Autolite in 1964 for use as a machining and engine plant. In 1981 it was converted for vehicle production of the Jeep Grand Wagoneer until the summer of 1991. Presently the Jeep Wrangler is built at the Parkway Plant and then trucked to the Stickney plant for finishing.

Chrysler decided to expand the Stickney Ave. plant and reclaimed a adjacent brownfield site for the construction of a new assembly plant to build the Jeep Liberty, a new sport utility vehicle. Production of the new vehicle at the new assembly plant began April 2001. The $1.2 billion investment by DaimlerChrysler reinforces their loyalty to Toledo and showcases the company's state-of-the-art Design for Environment (DFE) standards. The objective of DFE is to minimize or eliminate, during the design stage, the anticipated waste generation and resource consumption of the facility.

Prior to developing the 300-acre site the City of Toledo and DaimlerChrysler entered into an agreement, which included a "Brownfield Redevelopment" provision. As part of this agreement, the development site and the surrounding neighborhood were cleaned up as part of a $20 million remediation project. The results of this project will help preserve and enhance the Ottawa River wetlands for years to come.

DaimlerChrysler as part of their Design for Environment initiatives, invested $4.5 million in support of their environmental vision. The initiatives at the Toledo Stickney Ave. site included:

- Double wall containment of tanks and pits
- Secondary containment of chemical storage areas
- Secondary containment of liquid bulk unloading stations
- Automatic leak detection
- Retention ponds designed to collect the "first five" minutes of storm water deposited on the site property
- Parking lot residues are separated from the "first five" and sent to an on-site waste water treatment plant
- Environmentally responsible building specifications

All this and a new Jeep product built with environmentally preferred materials and fuel-efficient as well.

Lead Organization: DaimlerChrysler, City of Toledo
(contractor: Hull & Associates, Inc.)

Joe E. Brown Park Landfill *(Manhattan Blvd., west of Lagrange, Toledo)*

Site History: This site is located one-quarter mile south of I-75 and the Ottawa River in a residential area of Toledo. Historical information on waste materials placed in this site is unavailable. Soil samples have indicated low level VOCs and SVOCs in the soil. The site is now a base ball complex.

Site Investigation (1993)
This site was investigated in August 1993 as a part of the Ohio EPA Maumee Area of Concern Project Phase I Site Investigations. No substantial basis to indicate any

immediately threatening environmental conditions was found.

Lead Organization: Ohio EPA (funded in part by a grant from US EPA)

King Road Landfill *(3535 King Rd., Sylvania Township)*

Site History: The King Road Landfill is a 104 acre site that was owned and operated by Lucas County and was used as the county solid waste disposal facility from 1954 to the mid 1960s. Park Forest Development operated the site from the mid 1960s to 1969, when Lucas County again operated the facility until 1976. The landfill ceased operation in 1976, however the property is still owned by Lucas County.

This site accepted waste from several private industrial haulers. It reportedly accepted lead, cadmium, chromium, and arsenic latent industrial waste. During the years that the landfill was operated by Park Forest Development (a private contractor for the county) waste disposal records are not available.

A solid waste transfer station was in operation from May 1980 through July 1991. On the western portion of the property is a shallow 25-acre pond known as the Borrow Pit Pond. The central area of the site was seeded with grass and used for recreational purposes until October 1991. This site is now fenced and access is restricted.

The landfill was determined to be poorly located and has contributed to local groundwater quality degradation. At one time it was estimated that the landfill was discharging up to 30,000 gallons of leachate per day. In the fall of 2001 Ohio EPA reported that it was drafting recommendations for a preferred remedial plan.

Site Investigation (1992-1995)
Midwest Environmental Consultants were hired by Lucas County to perform a Remedial Investigation/Feasibility Study of the landfill in 1992 and began fieldwork in April of 1993. The results of surface water monitoring, soil borings and confined aquifer background show that by limiting access to the property and limiting use of the confined and unconfined aquifers in the vicinity of the landfill, acceptable risk levels would be maintained. Surface water studies of Ten Mile Creek conclude that the landfill does not necessarily contribute pollutants, as the two parameters showing exceedances in Ten Mile Creek, cyanide and total recoverable iron, are in exceedance both upstream and downstream of the landfill. The contaminants (mainly ammonia) present in the Borrow Pit Pond are primarily limited to the direct vicinity of the leachate seeps. According to the studies performed, the greatest threat to human health and the environment is an unconfined aquifer that is in contact with leachate.

Lead Organization: Lucas County(contractor: Midwest Environmental Consultants)

Collaborator(s): Ohio EPA

(1993-1994)
This site was investigated as part of the Ohio EPA Maumee Area of Concern Project Phase I Site Investigations and it was not recommended for further action because remediation under CERCLA was in progress.

Remediation (1993-1994)

An interim leachate collection system was installed which included catch basins and a pump station on the western side of the site to address leachate containing ammonia. A force-main interceptor sewer was also installed along the former Toledo, Angola and Western Railroad right-of-way to collect and transfer the landfill derived leachate to the Maumee River Wastewater Treatment Plant. The system began operation in June 1994.

Lead Organization: Lucas County (contractor: Midwest Environment Consultants)

Manhattan Dump *(2020 Manhattan Blvd., Toledo)* - see Treasure Island Landfill
(a.k.a. Miracle Park, Manhattan Park)

North American Car Corporation *(3648 Hoffman Road, Toledo)*

Site History: This 15 acre property is located at the corner of Hoffman Road and Manhattan Blvd. It is a former rail yard, leased by the Chessie System Railroad Company to NACC. NACC used the property to service and clean their freight cars from December 1978 until December 1984 at which time the company declared bankruptcy. In 1980 they filed a RCRA Part A Permit for Hazardous Waste generation. They withdrew the application in 1982 claiming to be a "protective filer" which did not meet filing requirements. Flash Realty, Inc. purchased the property in 1999.

Site Investigation (1985)
A hazardous waste preliminary assessment was completed by Ohio EPA for US EPA. The study determined that "site evaluation accomplished" status was designated. Therefore, no further action was recommended for the site.

(1993)
A site investigation was conducted by PRC Environmental for US EPA and no further action was recommended.

North Cove Landfill *(Foot of Drexel Dr., I-75 and North Cove Blvd., Toledo)*

Site History: The former North Cove Landfill is located on property extending from the east end of Hillcrest Ave. near Willys Park eastward under Interstate 75 and from the Ottawa River to the Jeep plant parking lot. The owners of American Car Corporation operated it from 1941 to1970. Part of this site is the Willy's Park Landfill, a large paint waste disposal area, adjacent to the Ottawa River. It was operated by Willy's Overland-Jeep and later used as an automotive test track.

Part of the area referred to as the South Cove Landfill (northeast of Beatty Park and Jermain Park and bounded on the north by the Ottawa River and the south by S. Cove Blvd.) is also considered part of this site for remediation purposes. Industrial residues, paint wastes, solvents and sludges and hydrocarbon vapors were discovered in 1979 during installation of a sanitary sewer west of the site. The City of Toledo owns the parts of the landfill that are not part of the Interstate-75 system.

Site Investigation (1993)
This site was investigated as a part of the Ohio EPA Maumee Area of Concern Project Phase I Site Investigations and it was not recommended for further review because remediation was being negotiated.

Lead Organization: Ohio EPA (funded in part by a grant from US EPA)

(1995-1998)
In 1995 DaimlerChrysler Corp., the City of Toledo, and the Ohio Department of Transportation began a cooperative effort to study the former North Cove Landfill. DaimlerChrysler, Toledo and ODOT submitted a Final Remedial Investigation Report to Ohio EPA in November 1997 and a Final Feasibility Study in January 1998**.** These included sampling the Ottawa River for VOCs, total organic carbon, metals, PCB's, and dissolved oxygen. Monitoring wells were installed.

Remediation (1999-Present)
In January 1999 the three parties agreed to work with Ohio EPA to develop a remedy for the North Cove Landfill. Negotiation of a Consent Order with Ohio EPA was occurring in late 2001. The remedy will prevent dermal contact by installation of additional soil cover on the part owned by the City of Toledo west of I-75 (former Willy's test track), armoring of the banks of Bowen Ditch and the Ottawa River, and planting of trees on the Ottawa River slope to enhance evapotranspiration of ground water.

In October 2001 Ohio EPA tentatively approved a decision document but planned reuse of the property (risk) is being negotiated, therefore the RD/RA is not finished. The plan calls for the reuse of the site as recreational. Construction of the remedy is expected to take place in 2002

Lead Organization: Ohio EPA, DaimlerChrysler, ODOT, City of Toledo

Northern Ohio Asphalt Paving Company *(7950 Sylvania Avenue, Sylvania)*

Site History: This 24 acre site is located adjacent to Ten Mile Creek. In 1977 it was known to be

leaching hydrocarbons into the creek. This facility historically extracted water from the creek and discharged 144,000 gpd to an unlined wastewater treatment settling pond that was approximately .25 acres. This property is owned by Miller Brothers Paving.

Site Investigation (1994)
This site was investigated as a part of the Ohio EPA Maumee Area of Concern Project Phase I Site Assessments. Laboratory analysis indicated the presence of significant polyaromatic hydrocarbon (PAHs) and metal contamination in surficial soils as well as in the sediments of the settling pond and adjacent ditch. It was recommended for "No Further Action".

Lead Organization: Ohio EPA (funded in part by a grant from US EPA)

Remediation (1977)
In June 1977 a self-contained, closed-loop leachate collection system was installed and settling pond outlet to the creek was eliminated. The settled water was pumped back into the plant for reuse.

Lead Organization: Northern Ohio Asphalt Paving Co.

Owens Illinois-Hilfinger *(1800 N. Westwood Avenue, Toledo)*

Site History: This 10 acre site is approximately 1000 yards south of the Ottawa River. The Hilfinger Corporation (a subsidiary of LeHigh Valley Industries, Inc.) engaged in foundry operations, electroplating and metal finishing on this site until it was closed in 1970. Electroplating sludge and other foundry waste were disposed of on the site without proper containment. On-site soils were contaminated by heavy metals, chromium, arsenic, cadmium, nickel and zinc. In 1971, Owens Illinois, Inc. purchased the site and used the buildings for furniture and equipment storage. In 1983 all of the buildings were demolished by Owens Illinois except one which was used as a maintenance facility. Shortly thereafter, a greenish tint was noticed in the rain water runoff and snow on the site. Following remediation by Owens Illinois, the property was purchased by the University of Toledo in 1988. The site has been used as a parking lot since the 1988.

Site Investigation (1984-1985)
In January and May 1984, 72 soil samples were collected and analyzed by Jones and Henry Laboratories. High levels of arsenic, cadmium, nickel, and zinc were found. Samples were not analyzed for organic compounds, although an oily sheen appeared on several groundwater samples and an extremely strong odor of petroleum was evident during soil sampling.

In September and November 1984, 250 additional surface and subsurface soil samples were taken by Jones and Henry and in December 1984 Fred C. Hart Associates was contracted to determine the concentration and distribution of chromium. The concentrations of total, hexavalent, and EP chromium were delineated both vertically and horizontally. The areas of highest concentration were the south-central and south-west portions of the property with concentrations up to 14,000 ppm in the south-central area. A Site Characterization and Analysis of the Hilfinger Property was prepared by Hart in February 1985.

Lead Organization: Owens Illinois (contractors: Jones and Henry Laboratories and

Fred C. Hart Associates)

(1985)
In 1985 Ohio EPA did a Potential Hazardous Waste Site Preliminary Assessment and recommended that this site be designated medium priority for FIT/State activity.

(1986)
In December 1986 Fred C. Hart, Inc. recommended a remediation for this site to Owens Illinois.

(1987)
In June 1987 a Site Inspection Report was done by Ecology and Environment, Inc. for US EPA. It noted that a two foot high dike surrounded the site and it appeared to be secure. It also noted that Owens Illinois was working with Ohio EPA to remedy the soil contamination.

Lead Organization: US EPA (contractor: Ecology and Environment, Inc.)

(1993)
This site was investigated as a part of the Ohio EPA Maumee Area of Concern Project Phase I Site Investigations. Although there was significant groundwater and soil contamination on this site, it was not believed to be significantly contributing to poor water quality in the Ottawa River. Therefore, no further remedial action was recommended.

Lead Organization: Ohio EPA (funded in part by a grant from US EPA)

Remediation (1987-1988)
Owens Illinois conducted a remediation, with technical assistance from Ohio EPA, on this site. It consisted of relocating the chromium contaminated soils to the center of the property and capping them with two feet of compacted clay, a polyethylene liner, and sand. An asphalt parking lot was then installed on top of the remediation site. Four monitoring wells were installed around the perimeter of the parking lot and were to be monitored biannually for chromium.

Lead Organization: Owens Illinois

Owens Illinois-Tech Center *(1700 N. Westwood, Toledo)*

Site History: This 12.5 acre site is approximately one-half mile from the Ottawa River. It was operated from 1932 to 1986 as a Research and Development Center for the glass manufacturing process. There were three buildings on the site. The largest of which was the South Technical Center. It was equipped with chemistry laboratories and a large glass furnace. In the 1940s glass coloring ink waste may have been buried in the basement. Waste refractory bricks contaminated with chromium and lead were also buried in the basement of this building.

A second building, located near the South Technical Center, stored waste chemicals from research and development laboratories. Waste streams were not treated and were stored in barrels (60,000 pounds per year of spent solvents and 60,000 gallons per year of other organics)

A parcel of radioactive material was buried at the northeast corner of the site in the late 1950s. A 100,000 gallon and 3 smaller above-ground, diked fuel oil tanks were located on the property. These were later replaced with underground storage tanks. In 1981 a RCRA Part A notification permit form was filed for the South Technical Center, but was withdrawn in 1984.

The University of Toledo purchased the property in April 1988. According to the sale agreement, Owens Illinois committed to pay for any environmental clean up or removal needed on the site for 10 years after the date of sale, provided they had caused the contamination. This site is a part of the Engineering complex at the University of Toledo.

Site Investigation (1987)
Ohio EPA conducted a Potential Hazardous Waste Preliminary Site Assessment. It concluded that because the South Technical Center had been removed and there were zero drinking water population targets, the site was recommend as a low priority site for additional investigations.

(1991)
Phase I and Phase II Environmental Assessments were completed in March and April 1991 for the University of Toledo Foundation.

(1992)
In a report dated February 1992, ERM – Midwest Inc. for the University of Toledo conducted an investigation in the area of the proposed engineering building extension of the property. This report recommended that the most appropriate remediation method would be that any contaminated soils should be excavated and disposed of on-site as a solid waste, or as a hazardous waste.

MES International conducted a Phase II Environmental Site Assessment for the University of Toledo Foundation that was released in April 1992. It concluded that soil within the boundary of the study does appear to be contaminated with BTEX and metals at least to a depth of 5.5 feet. Therefore at least 4000 cubic yards of soil might require remediation to some degree.

(1993)
This site was investigated as a part of the Ohio EPA Maumee Area of Concern Project Phase I Site Investigations and it was recommended for no further action because it is no longer a threat.

Lead Organization: Ohio EPA (funded in part by a grant from US EPA)

Remediation (1970)
The radioactive material was excavated and removed from the property in June 1970.

(date unknown – after 1979)
Waste water from the glass furnace cooling towers was discharged to the Ottawa River by storm sewers until the closure and removal of the furnace and cooling tower.

(1992)
The underground storage tanks were removed from the property in 1992.

Lead Organization: Owens Illinois (contractor: Bowser-Morner)

(1993)
A building that contained buried waste refractory bricks contaminated with chromium and lead was demolished and the basement was filled in. The area was paved over.

Lead Organization: Owens Illinois

Perstorp Polyols *(622 Matzinger Road, Toledo)*
(a.k.a. Pan American, Dupont E.I. DeNemours & Co., Inc.)

Site History: This 36 acre facility, formerly the Dupont facility, is located on the Ottawa River. An old waste water lagoon, approximately 180' by 75' was located on the eastern portion of the property within 50 yards of the Ottawa River. It is now filled, but discharge to the river has been detected. It is believed that portions of the Dura Ave. Landfill extend on to this property. (see Issue 10 - Industrial Dischargers for more information on this site.)

Site Investigation (1993-1994)
This site was investigated as a part of the Ohio EPA Maumee Area of Concern Project Phase I Site Investigations and formaldehyde was found in analysis of surficial soils. However, this was not considered a threat to the Ottawa River, and no further action has been planned.

Lead Organization: Ohio EPA (funded in part by a grant from US EPA)

Royster Property *(4401 Creekside Ave., Toledo)*
(a.k.a. Stickney West Industrial Park)

Site History: A fertilizer manufacturing facility operated on this site from the early 1900s until the early 1980s. It was used as a salvage yard in the 1980s and 1990s. This site has a 2 acre wastewater retention pond which discharged to Sibley Creek and had significant environmental, health and safety issues, including thousands of tires and railroad ties, asbestos containing materials, abandoned drums, automobile engines, fuel tanks, discarded pallets, degraded wetlands, contaminated soils, and fertilizer and pesticide piles.

Site Investigation (1993-1994)
This site was investigated as a part of the Ohio EPA Maumee Area of Concern Project Phase I Site Investigations and laboratory analysis of samples indicated the presence of significant volatile organic compounds, semi-volatile organic compounds, polyaromatic hydrocarbon, metal contamination, and pesticides. This site was recommended for further action, however based on current voluntary clean up activities, Ohio EPA would not recommend additional investigations.

Remediation (2000)
In 2000, Hemisphere, Ltd. agreed to purchase and cleanup this property provided the City of Toledo agreed to purchase excavated soil needed for filling and grading the Dura Ave. Landfill for closure and would support the development of a construction and demolition debris (CDD) landfill. The majority of these activities are largely done, with completion planned in 2005. The CDD landfill has been licensed and is currently in operation. Once the CDD landfill is full, it will be capped and possibly developed into an industrial park hosting support facilities for the nearby DaimlerChrysler Jeep

Plant.

Lead Organization: Hemisphere, Ltd. (contractor: Hull & Associates, Inc.)

Collaborator(s): City of Toledo, Ohio EPA, US EPA

Scott Park *(Hill Ave., Toledo)*

Site History: Information does not appear to exist with respect to the actual existence or operation of this suspected dump. The current status of the property is undetermined.

Sheller-Globe/Armored Plastics *(4510 Lint Ave. and 303 Dura Ave., Toledo)*
(a.k.a. City Auto Stamping, United Technologies Automotive Systems, Inc., Globe-Warnicke Industries, Inc)

Site History: The site is divided into two sections according to their use. The smaller section is one parcel that is approximately 3 acres. It has not been used for manufacturing purposes. It contains two seasonal ponds surrounded by dikes. This parcel is located at 303 Dura Ave. The larger section is multiple parcels that are located at 4510 Lint Ave. They total approximately 20 acres and are covered with buildings and parking lots. The two adjoining parcels are divided by a railroad track.

City Auto Stamping, Inc. (CAS) started operations on the larger section in 1929. They performing heavy metal stamping, parts assembly, and/or electroplating of automobile components. Globe-Warnicke Co. merged into CAS in 1957 and the name changed to Globe-Warnicke Industries, Inc. Sheller Manufacturing merged into Globe-Warnicke Industries, Inc in 1966 to form Sheller-Globe Corporation.

A subsidiary of Sheller-Globe, Corp., Armored Plastics (AP), made fiberglass containers on the site from 1952 to 1969. Waste from Armored Plastics' was dumped on the smaller parcel of property.

In 1985, Sheller-Globe sold the larger section of the property to Hepheastus Operating and Stamping Inc. Hepheastus painted trucks and because of the waste generated from that process, they filed for RCRA interim status in 1985. This was converted to a permit a 90-day storage facility in 1986. This permit allowed them to store toluene-solvent blend in drums on-site. In February 1989 a RCRA Closure Plan was submitted to Ohio EPA. The plan was revised and resubmitted in August 1991. Ohio EPA approved this revised plan in May 1992. During a post-closure inspection in October 1993, it was determined that the plan had been satisfactorily implemented and this site was no longer to be considered a RCRA treatment, storage and disposal facility. In 1993 JYF Properties acquired this larger section of property from Hepheastus (which no longer exists).

The smaller section of this property, which was not sold to Hepheastus in 1985, is still titled to Sheller-Globe/City Auto Stamping. United Technologies Automotive Systems, Inc. (as the liability successor to Sheller-Globe when it purchased the company in 1989) has conducted site investigations and remediation on this smaller parcel of property.

(NOTE: There are several other Sheller-Globe facilities in the Maumee AOC. This only addresses the Lint Ave. /Dura Ave. site)

Site Investigation (1985)
In June 1985 Ohio EPA performed a RCRA Interim Status Inspection and identified a ½ acre area in which assorted waste were disposed. Also noted were rusty, empty drums on the surface. A CERCLA notification of hazardous waste 103 (c) was filed.

Ohio EPA conducted a Preliminary Site Assessment for US EPA in September 1985. Sampling results indicated acids (corrosives), heavy metals (chromium), and solvents (toluene) in the soil.

(1986)
A Potential Hazardous Waste Site Preliminary Assessment was conducted by Ohio EPA in 1986. It recommended further investigation of the site.

(1990)
While conducting an environmental assessment of the smaller parcel, United Technologies personnel found 231 drums containing waste and a large contaminated pond.

(1991)
United Technologies had a Sampling Site Investigation conducted by Heritage Remediation/Engineering, Inc. According to the report, the contents of most of the drums were visible and included metal shavings, oily sludge/liquids, solid resins, powdery resins and oily sawdust. Most of the drums and related contamination were concentrated in an area between the ponds called the “drum berm area”. The drum contents, ground water, debris piles, and soils were sampled and analyzed. Low levels of PCBs, PAHs, and VOCs; and high levels of light hydrocarbons were detected.

Lead Organization: United Technologies
(contractor: Heritage Remediation/Engineering, Inc.)

(1993)
This site was investigated as a part of the Ohio EPA Maumee Area of Concern Project Phase I Site Assessments. Heavy metals, volatile organic compound (VOCs), and polynuclear aromatic hydrocarbons (PAHs) were found in surficial soils. Off-site migration of the contaminates is unlikely due to the lack of migration pathways. Therefore, this site was recommended for no further action.

Lead Organization: Ohio EPA (funded in part by a grant from US EPA)

Remediation (1991-1992)
United Technologies, Inc. voluntarily removed the drums and related contaminated soils near the pond area from December 1991 to January 1992. The drum contents with PCBs (near or above 50 ppm) and associated wastes were voluntarily removed in 1991. They were sent to a TSCA permitted landfill. The remainder of the drums and wastes were sent to a RCRA permitted landfill.

Lead Organization: United Technologies Automotive Systems, Inc.
(contractor: Heritage Environmental Corp.)

South Cove Landfill *(South Cove Blvd. near Beatty Park, Toledo)*

Site History: Northeast of Beatty Park and Jermain Park and bounded on the north by the Ottawa River and the south by S. Cove Blvd., this was a suspected paint waste disposal area for Willy's Overland-Jeep, however there is little evidence to verify the existence of this site. (see - North Cove Landfill for more information)

Site Investigation (1992)
This site was investigated as a part of the Ohio EPA Maumee Area of Concern Project Phase I Site Investigations and no further action was recommended.

Lead Organization: Ohio EPA (funded in part by a grant from US EPA)

Stickney Avenue Landfill (3900 *Stickney Ave, Toledo)*

Site History: The Stickney Ave. Landfill is 55 acres. The Ottawa River is to the west and north with over 2500 feet of frontage. It was operated by the City of Toledo as a municipal, commercial and industrial waste landfill from 1958 to 1966. Waste was dumped into a former clay borrowing pit. Excessive soil erosion and leachate outbreaks existed along the entire landfill streambank perimeter. After the landfill stopped accepting waste is was covered with 0 to 3 feet of clay and was overgrown with vegetation. Prior to remediation the principle owners of Stickney were DaimlerChrysler (owning 33 acres) and the City of Toledo (owning the remainder).

Site Investigation (1984-1986)
Sampling studies done in 1984 and 1986 by the Ohio EPA and the City of Toledo documented contaminant levels in the landfill soils and leachate high enough to warrant further action under the Superfund program.

(1993)
In February 1993, US EPA conducted a Removal Site Evaluation and found the contaminant levels did not meet the Removal Action Levels. Therefore time-critical removal actions were deemed not necessary.

In the spring of 1993 a Screening Site Inspection (SSI) by US EPA was done for Stickney which documented the existence of as many as 40 leachate seeps along the river bank. Sampling of groundwater, leachate and soil substantiated the presence of many compounds at levels above background, including heptachlor, heavy metals and volatile and semi-volatile organic compounds.

In June 1993 US EPA completed an ecological review of the available data on the Stickney Landfill and concluded that it contributed to the ecological risks of the Ottawa River and recommended steps be taken to stop the flow of leachate.

In July 1993 the Ohio Department of Health (ODH) finished a Qualitative Health Risk Evaluation (QHRE) concluding that surface soils and leachate from Stickney contributed to the contamination of the river and wading poses an unacceptable risk to human health.

(1993-1994)
These sites were investigated as a part of the Ohio EPA Maumee Area of Concern Project Phase I site investigations and further investigation was recommended with the potential for remediation of the site.

Lead Organization: Ohio EPA (funded in part by a grant from US EPA)

(1995)
August 1995 an Engineering Evaluation/Cost Analysis (EE/CA) was begun by certain PRPs for the Stickney Ave. Landfill and was approved by US EPA in September 1995.

Remediation (1998-Present)
The US EPA selected the Stickney Avenue Landfill for remediation under the Superfund's Accelerated Cleanup Model (SACM) program. An evaluation of possible remedies and their costs (EE/CA) was conducted by the PRPs. The EE/CA recommended capping the landfill with a multi-layer cover system to contain the wastes and leachate and to prevent future infiltration of rainwater, thereby allowing the landfill to dewater (drain existing leachate). The Stickney/Tyler Administrative Group (STAG), a group of 20 PRPs including the City of Toledo, under an agreement with US EPA, finished the design and began construction in 1997 and completed the 16-month capping project in 1998. In conjunction with this capping effort, a leachate extraction system was installed and the waste lagoons were capped on the XXKem property. (see XXKem for more information) The Stickney Landfill is currently undergoing a 5-year performance-monitoring period. Following successful completion of site monitoring, it may be incorporated into developable lands for the Stickney West Industrial Park. (see Royster/SWIP for more information) Total costs at the combined Stickney and Tyler Landfill sites was approximately $24 million.

Lead Organization: US EPA, Stickney Tyler Administrative Group (STAG) including the City of Toledo (Toledo received loan through the Ohio Water Development Authority)

Collaborator(s): Ohio EPA

Textileather Corporation *(3729 Twining, Toledo)*
(a.k.a. Gencorp Maunfacturing)

Site History: Textileather is a 40-acre RCRA industrial facility where plastic coated fabrics, such as vinyl upholstery fabric (used for auto interiors and furniture covers) are currently being manufactured. GenCorp, Inc., the former owner, manufactured similar products. From 1967 to 1972 GenCorp used PCB -laden oil as an internal heat exchange fluid in its processes. The company was bought and operated by the employees from 1990 to 1995. It was then sold to Canadian General Tower in 1996. Canadian General Tower still owns this site.

Site Investigation (1993-1994)
This site was investigated as a part of the Ohio EPA Maumee Area of Concern Project Phase I Site Investigations and was recommended for further investigation due to elevated levels of PCBs in the adjacent Unnamed Tributary and the storm sewer connecting the properties.

Lead Organization: Ohio EPA (funded in part by a grant from US EPA)

Remediation (1992-1994)

Under a cooperative agreement with Ohio EPA, a remedial investigation and feasibility study was conducted by Gencorp. The resulting remedial action was a PCB remediation on the northwest corner of the Textileather property. 114 rail cars of contaminated sediment were excavated and transported off-site for disposal under TSCA (Toxic Substance Control Act) regulations. A storm sewer located between the facility and the nearby Unnamed Tributary was power washed to remove sediment containing PCBs. 123,000 gallons of wastewater were collected and treated. (see - Fraleigh Creek Remediation for additional information on a related cleanup)

Lead Organization: GenCorp, Inc.

(1997)
Four monitoring wells were installed on the northern edge of the property to track any contamination potentially migrating from the adjacent XXKem property. Some migration has been noted in these wells.

Lead Organization: Canadian General Tower

Toledo Tie Treatment Facility *(Arco Industrial Park, S. Frenchmens Rd., Toledo)*

Site History: This site (21 acres) was part of a larger 50-acre railroad tie coal tar creosote facility where railroad ties were creosote treated, drip-dried, and stored. It had several above ground storage tanks (two 500,000 gallon, three 30,000 gallon, and four 150,000 gallon creosote tanks and one 150,000 gallon zinc chloride tank) and lagoons containing hazardous substances. 5 to 10 acres were used for drying and storing creosote-treated railroad ties. It was owned by Federal Creosoting Co. from 1923 until 1959 and from 1959 to 1962 by American Creosoting Corp. Kerr-McGee Chemical LLC is a successor to these creosoting companies. The City of Toledo acquired the site in 1962 and sold much of it to a developer, Arco Realty, in 1969 for creation of an industrial park. It is now comprised of 6 individually owned lots (Arco Industrial Park). Williams Ditch, a tributary of the Ottawa River, runs adjacent to this site. US EPA is in negotiation with Kerr-McGee Chemical LLC on further remedial actions needed for this site.

Site Investigation (1987)
In 1987, Ohio EPA began testing and monitoring the adjacent Williams ditch. Ohio EPA analysis confirmed coal tar creosote-related chemicals in the soil, sediments and wastes.

Lead Organization: Ohio EPA

(1987-1988)
In 1987 Bowser-Morner conducted a foundation soil exploration for Doral Steel (315 Arco Dr.) and found chemical odors from depths of 4 to 9 feet. In 1988 they took samples from a soil boring and analysis demonstrated creosote contamination.

(1989)
In February 1989 an Environmental Site Assessment of LBA Custom Printing (207 Arco Dr.) was done by Environmental Consultants Inc. In May 1989 ECI also did an Assessment of Cook United Warehouse Property (now National Super Service –3115 Frenchmens Rd.)

(1990)
In April 1990 Midwest Environmental Consultants performed an investigation and a Risk Assessment of 367 Arco Drive (lot 25). In October 1990 Geraghty and Miller, Inc. performed an investigation of a soil pile at Spartan Chemical Co. (3243 Frenchmens Rd.) which demonstrated PAH contamination.

(1993)
This site was investigated as a part of the Ohio EPA Maumee Area of Concern Project Phase I Site Investigations and laboratory analysis indicated the presence of significant volatile organic compound, polyaromatic hydrocarbon, pesticide and metal contamination in the surficial soils. PAH and metal contamination were also identified in soil from Williams Ditch and PAH and metal contamination were confirmed in the surface water of Williams Ditch. It was recommended for additional investigation and remediation.

Lead Organization: Ohio EPA (funded in part by a grant from US EPA)

Remediation (1997-1998)
During storm events in late 1997, an unidentified oily material was observed on the surface waters of Williams Ditch and was believed to be leaking from the buried Toledo Tie lagoons. Emergency measures were taken in October 1997 to contain the materials and signs warning against human contact were installed. In January 1998, US EPA issued unilateral orders for a Time-Critical Removal Action to clean up the site. The contaminated sediment was removed and a barrier installed to minimize future creosote migration to Williams Ditch.

Lead Organization: US EPA, Kerr-McGee Chemical LLC
(contractor: Hull & Associates, Inc.)

Collaborator(s): Ohio EPA

Treasure Island Landfill *(between New York and Counter Streets, south of Manhattan St.)*
(a.k.a. Miracle Park, Manhattan Park)

Site History: This 150 acre triangle-shaped site is composed of three smaller landfills (Manhattan Dump, Treasure Island Landfill and Tuber Dump), which contain industrial and/or municipal wastes. Manhattan Dump was on the northern part of the site. Treasure Island Landfill was on the southern side. Tuber Dump was a privately owned illegal dump located at the southeast corner of the site. All three dumps were closed by 1976. Chemical and underground fires occurred in the past, explained by the presence of magnesium. A 56" storm sewer separates Manhattan Dump and Treasure Island Landfill. A state prison and Hoops Basketball facility now exist on part of these properties.

Site Investigation (1972) (1989)
Inspections by Toledo Pollution Control in 1972 and Ohio EPA in 1989 both showed significant leachate associated with the site. The 1972 samples found the leachate to be black with a strong chemical odor.

(1993)
In January of 1993, sampling was conducted on behalf of US EPA to assess the potential health hazards of the site. Identified were semi-volatile organics, heavy metals and pesticides including chlordane and DDT.

Lead Organization: US EPA

Remediation (1997-Present)
(1997-1998)
The City of Toledo has done a VAP (voluntary cleanup) of the Treasure Island Landfill site (40 acres), in preparation for the construction of a state prison. The prison was constructed from 1997 to1998. A Covenant Not to Sue from the State of Ohio is pending. Ownership of the prison property will eventually be transferred to the Ohio Dept. of Corrections.

Lead Organization: City of Toledo, Ohio Department of Correction

(1998-1999)
Waste formerly protruded from the northern Manhattan Dump area. It has been regraded for drainage (not an engineered cover) with soils from the new DaimlerChrysler Assembly Plant construction project and grassed. Waste was removed from existing wetlands and they were reengineered to enable then to function properly. In 2001 the City of Toledo contracted to have a Master Plan completed for the City of Toledo's Miracle Park that is located at this site.

Lead Organization: City of Toledo, DaimlerChrysler

Tuber Dump *(north of the intersection of Columbus and Ontario Streets)* - see Treasure Island Landfill
(a.k.a. Miracle Park, Manhattan Park)

Tyler Street Landfill *(east end of Tyler St. near Creekside Ave., Toledo)*

Site History:

The 77 acre Tyler St. Landfill was operated by the City of Toledo from the early 1950s to 1968. The City of Toledo used the site to dispose of up to 2200 cubic yards of municipal waste daily. Private parties also disposed of approximately 400 cubic yards of industrial/commercial waste daily. Wastes such as grease, oil, sewage organic materials, solvents, heavy metals, corrosives, paint wastes, municipal garbage, street sweepings and more were disposed in this landfill.

The Ottawa River was rerouted to its present location and the original channel was filled with waste as the Tyler St. Landfill. After the landfill stopped accepting waste and was covered, the western portion of the property was used by Creekside Auto Parts as an automobile junkyard which was covered by soil and demolition debris. During this operation the land was leveled, cutting off part of the cap and exposing waste. The east side of the landfill was vegetated with several small ponds/marshes due to differential settling of the landfill waste materials. Leachate was discharging from the landfill into the river in several places and the landfill had severely eroded along the riverbanks until remediation.

Site Investigation (1984-1986)
Sampling studies done in 1984 and 1986 by the Ohio EPA and the City of Toledo documented contaminant levels in the landfill soils and leachate high enough to warrant further action under the Superfund program.

(1993-1995)
In 1993 an Expanded Site Inspection (ESI) at Tyler by US EPA documented the existence of drainage pipes from within the landfill discharging directly into the riverbank and into the river. Samples of the leachate and soil showed elevated levels of heavy metals, volatile and semi-volatile organic compounds, and PCBs.

In February 1993, US EPA conducted a Removal Site Evaluation and found the contaminant levels did not meet the Removal Action Levels. Therefore time-critical removal actions were deemed not necessary.

In June 1993 US EPA completed an ecological review of the available information for the site and concluded that the landfill is contributing to the ecological risks posed to the Ottawa River and measures to stop the flow should be taken.

In July 1993 the Ohio Dept. of Health (ODH) completed a Qualitative Health Risk Evaluation (QHRE) concluding that Tyler contributes to the overall contamination of the Ottawa River and swimming and wading pose an unacceptable risk.

(1993-1994)
These sites were investigated as a part of the Ohio EPA Maumee Area of Concern Project Phase I site investigations and further investigation was recommended with the potential for remediation of the site.

Lead Organization: Ohio EPA (funded in part by a grant from US EPA)

(1994-1995)
In August 1994 the Potentially Responsible Parties (PRPs) began work on an Engineering Evaluation/Cost Analysis (EE/CA) on Tyler that was completed and

approved on September 14, 1995.

Remediation (1998-Present)
The US EPA selected the Tyler Street Landfill for remediation under the Superfund's Accelerated Cleanup Model (SACM) program. An evaluation of possible remedies and their costs (EE/CA) was conducted by the PRPs. The EE/CA recommended capping the landfill with a multi-layer cover system to contain the wastes and leachate and to prevent future infiltration of rainwater, thereby allowing the landfill to dewater (drain existing leachate). The Stickney/Tyler Administrative Group (STAG), a group of 20 PRPs including the City of Toledo, under an agreement with US EPA, finished the design and began construction in 1997 and completed the 16-month capping project in 1998. The Tyler Landfill is currently undergoing a 5-year performance-monitoring period. Following successful completion of site monitoring, the site may be incorporated into developable lands for the Stickney West Industrial Park. (see - Royster/SWIP for more information) Total costs at the combined Stickney and Tyler Landfill sites was approximately $24 million.

Lead Organization: US EPA, Stickney Tyler Administrative Group (STAG) including the City of Toledo (Toledo received loan through the Ohio Water Development Authority)

Collaborator(s): Ohio EPA

Willy's Park Landfill *(Drexel Dr., Toledo)*
(a.k.a. Willy-Jeep Test Track)

Site History: Used as an automobile test track, this site was believed to be a paint waste disposal area operated by Willy's Overland-Jeep. (see – North Cove Landfill for related information)

Site Investigation (1993-1994)
This site was investigated as a part of the Ohio EPA Maumee Area of Concern Project Phase I Site Investigations and was recommended for no further action because the site is in the RI/FS review process.

Lead Organization: Ohio EPA (funded in part by a grant from US EPA)

XXKem Company *(3903-3905 Stickney Ave., Toledo)*
(a.k.a. Incorporated Crafts, Robert Oberly)

Site History: Several companies successively operated the XXKem site as an illegal hazardous waste treatment, storage, and disposal facility, involved in reclaiming and recycling chlorinated solvents, using distillation as a reclamation process. Waste disposal activities began on this 13 acre site in 1959 with the disposal of wastes related to the manufacture of printing ink (1959-1969) and in the early 1970s sewage sludge was deposited. Incorporated Crafts operated from 1974 to 1981. S.M. Allen operated here from 1981 to 1986 and XXKem/Lion Land Procurement purchased the site in 1986.

Sludges and waste oil from various industrial processes and possibly waste solvent washes from printing industries were dumped into an impoundment area in the back

(west) 7 acres of the property. Blending and storage operations took place on the front (east) 6 acres. As much as 2.5 million gallons of waste may have been stored in this impoundment with no liner. A Consent Decree between the state of Ohio and Incorporated Crafts was signed in 1981 ordering the removal of all wastes and the drainage and removal of the lagoon from the facility. In March 1991 Ohio EPA ordered all operations to stop due to criminal negligence and illegal handling and storage of wastes without a proper permit. In 1993 the owner of XXKem was convicted and sentenced for violating several state laws governing the storage and treatment of hazardous waste.

Site Investigation (date unknown)
The Ohio Department of Health took oil and water samples from the lagoon and found significant concentrations of PCB's in the oil.

Lead Organization: Ohio Department of Health

(1987)
A Preliminary Assessment done in 1987 by Ohio EPA indicated the sludge from the lagoon and associated contaminated soil were not removed during the prior remediation.

Lead Organization: Ohio EPA

(1993)
This site was investigated as part of the Ohio EPA Maumee Area of Concern Project Phase I Site Assessments and significant concentrations of contaminants were found. It was concluded that the risk to human health and the environment posed by surface waters adjacent to the site is high. Therefore, it was recommend for further investigation.

Lead Organization: Ohio EPA (funded in part by a grant from the US EPA)

(1994)
In 1994 US EPA conducted an Expanded Site Inspection (ESI) at XXKem and identified numerous surficial contaminants in the central lagoon area, including volatile organic compounds, semi-volatile organic compounds, and heavy metals.

(1995)
In September 1995 US EPA began a Supplemental ESI for XXKem to investigate the current environmental conditions in the lagoon and their possible impact on the proposed remediation of Stickney Landfill.

In October and November of 1995 Ohio EPA collected groundwater and soil samples from the central portion of the site. The sample results revealed extremely elevated levels of VOCs, SVOCs, PCBs and metals.

(1996)
In March 1996 Ohio EPA completed a Supplemental Expanded Site Inspection since this site was to be capped as part of the Stickney Ave. Landfill remediation project. This report included an evaluation of ground water flow on the site indicating that contaminated ground water was expected to flow into the Ottawa River from the site.

In May 1996 Ohio EPA observed red leachate and stained soils, with visible migration paths of the leachate toward the adjoining Conrail property. The leachate and surficial

soils were sampled and found to include volatile and semi-volatile organic compounds as well as PCBs.

Remediation (1983)
PCB contaminated oil was removed by Inland Chemicals of Kentucky. Closure (filling lagoon with non-metallic auto fluff material and capping with clay, topsoil and seeding) was done in 1983.

(1992-1993)
In 1992-1993 an emergency removal action packaged and removed approximately 1,200 drums and 5 above ground blending tanks under funding from CERCLA, on the eastern part of the site. Waste materials included spent solvents mixed with other wastes creating an incompatible storage situation.

Lead Organization: US EPA

Collaborator(s): Ohio EPA

(1998-Present)
In 1998, the western portion of the site was included in the remediation of the Stickney Landfill to help prevent leachate from leaving the XXKem site and entering the Stickney Landfill site. This design included grading and capping the western (rear) portion of the site consistent with the capping design for the landfill. A pump and treat groundwater remediation system was installed by the City of Toledo ($300,000) at this time and continues to be in operation. Safety-Kleen Envirosystems Company assumed the ongoing operations and maintenance of the system that as of December 2000 removed 3000 gallons of leachate per week.

Lead Organization: US EPA, City of Toledo

Collaborator(s): Safety-Kleen Envirosystems Co.

Otter Creek Watershed

Bill's Road Oil Services *(3500 York St., Oregon)*

Site History: Bill's Road Oil Services operated as an oil recycling facility for 9 years on this .25 acre site. It included 2 waste oil impoundments (lagoons) and five tanks which were used for storage. The impoundments were located in the southeast corner of the property. This property was acquired by Fondessy Enterprises, Inc. in 1982. Envirosafe Services of Ohio, Inc. (ESOI) took ownership of all the Fondessy Family properties located in this area in 1983. By 1984 the liquid from both lagoons was removed. Envirosafe did remediation of the site and they used the tanks on the south part of the property for vehicle storage/maintenance sheds.

When Cell M of the Envirosafe hazardous waste disposal facility was initiated in 1992 the Bill's Road Oil area was used to stockpile and condition the clay for the cell liner. In June 1992 the Envirosafe Stabilization/Containment Building construction began on the former Bill's Road Oil property. This area was excavated during construction and oil stained soils with traces of gray material were found. Ohio EPA required Envirosafe to conducted analytical studies of the soils and to prepare a sampling and analysis plan for clean up. This site is identified as a solid waste management unit

and is subject to RCRA corrective action under RCRA rules by Ohio EPA if necessary. (see – Envirosafe for additional information on this site)

Site Investigation (1983)
The Fred C. Hart Associates for Envirosafe conducted an Environmental and Engineering Assessment Report of July 1983 which indicated contaminated liquid in the two impoundments but noted the 5 tanks were empty. The slightly larger "west" lagoon held a total estimated volume of 345,000 gallons.

Remediation (1987-1988)
From 1987 to 1988 a clean up of the two lagoons, the storage tanks, and the adjacent areas was conducted by Envirosafe and two tanks were disassembled.

(1992-1993)
Prior to the construction of the Stabilization Building, Envirosafe identified contamination in the former Bill's Road Oil area (1992). Plans for remediation were submitted to Ohio EPA and were approved in 1993. Excavation and cleanup of this area was completed in 1993 and petroleum contaminated soils (750 cubic yards) were disposed of in Cell M of the Envirosafe Facility and at the Michigan BFI Hagman Road Landfill.

BP Oil Company- Toledo Refinery *(4001 Cedar Point Road, Oregon)*
(a.k.a. Standard Oil)

Site History: This site is a 515-acre refinery operation, located east of Otter Creek. (See Issue 10 - Industrial Dischargers for more information on this site.)

Remediation (1988)
Sludge ponds were removed to eliminate any potential for migration of sludge contaminants.

Lead Organization: BP Oil Company

Buckeye Pipeline Company *(3321 York Street, Oregon)* - See Duck Creek Watershed

Gulf Oil Refinery and Terminal *(2935 Front St., Toledo)* - See Duck Creek Watershed
(a.k.a. Chevron)

Commercial Oil *(3600 Cedar Point Road, Oregon)*

Site History: Commercial Oil Services operated a waste oil recycling facility from 1969 to 1985. Hazardous materials including waste oils, sludges, and solvents were stored in lagoons, tanks, and containers at the site. The site was abandoned in 1985, as the owner had received a prison term for illegal hazardous waste disposal practices. In 1986 the lagoons overflowed and 30,000 gallons were released.

Remediation (1988-89)
In an emergency removal action more than 1,200 drums of hazardous materials were removed.

Lead Organization: US EPA

Collaborator(s): Ohio EPA

(1995-1999)
The Commercial Oil Trust (a potentially responsible parties (PRP) group) funded a two-phased, $30 million, non-time critical removal action. In 1995, under the first phase of the clean up, approximately 30 above and below-ground storage tanks, a maintenance garage, and 65,000 gallons of waste oil and 23,000 gallons of contaminated water were removed. Additionally, Phase I included demolition of the boiler and process buildings, the loading rack, and a radio tower.

Phase II began in 1997 and involved the treatment and discharge of water and leachate, construction of on-site Toxic Substances Control Act (TSCA) approved containment cells for PCB contaminated dewatered sludges and soils, stabilization of about 200,000 cubic yards of contaminated sludges and soils that were placed in landfill cells covered by a RCRA hazardous waste landfill cap, and finally placement of clean fill and regrading, seeding and fencing of landfill areas. Institutional controls and groundwater monitoring programs were established.

In December 1999, USEPA conducted the final site inspection at the Commercial Oil Services site.

Lead Organization: Commercial Oil Trust (PRP group), US EPA

Envirosafe Services of Ohio, Inc. *(876 Otter Creek Road, Oregon)*
(a.k.a. Fondessy Enterprises, Inc.)

Site History: This 135-acre site is located on Otter Creek Road at York Road. The adjacent Johlin property is 33 acres and is also owned by Envirosafe. Previously operated as a landfill by Fondessy Enterprises, Inc., this site is now a licensed RCRA hazardous waste disposal facility. Envirosafe Services of Ohio, Inc. (ESOI) took ownership of all the Fondessy Family properties located in this area in 1983.

Two drinking water supply lines from the City of Toledo (73 million gallons per day) traverse the site. Disposal Cells G, H, and I were used for hazardous waste disposal and Cell F accepted hazardous as well as municipal waste. These cells and the 3 cells which accepted only municipal waste have all been closed. The only cell currently accepting hazardous waste at Envirosafe is Cell M, which is located south of

York Road. This site is subject to RCRA closure rules and/or correction action under RCRA rules by Ohio EPA as necessary. (see - Bill's Road Oil and Fondessy Landfill #1 for more information)

Site Investigation
This site has been subject to many investigations by Envirosafe, the City of Oregon and Ohio EPA.

Fondessy Landfill #1 *(southwest corner of Otter Creek Road and Millard Ave. Overpass, Oregon)*
(a.k.a. Millard Ave. Landfill)

Site History: This site is located in the triangle formed between the old Millard Ave., the new Millard Ave. Overpass and Otter Creek Road. This cell is one of three cells that were part of the landfill operated by Fondessy Enterprises, Inc. starting in 1954. Envirosafe Services of Ohio, Inc. (ESOI) took ownership of all the Fondessy Family properties located in this area in 1983.

Cell #1 accepted solid waste from municipal sources as well as construction and demolition debris. The waste volume is estimated to be 224,600 cubic yards. It operated from 1976 to 1981 and is capped and unlined with no leachate collection system. Routine groundwater monitoring is done by the current owner Envirosafe of Northwest Ohio. The site is subject to RCRA corrective action by Ohio EPA under RCRA rules if necessary. (see – Envirosafe for more information)

Site Investigation (1983)
In 1983 Fred C. Hart Associates conducted an investigation that included 2 test borings to depths of 31.5 and 51.5 feet below ground level. No leachate was found in one of the borings, although an oily fluid was detected in the second boring at 35 feet and below this depth was dry.

Remediation (estimated 1981)
Following the end of filling, this cell was capped with a soil cover ranging from 2 to 7 feet.

Gradel Landfill *(1150 Otter Creek Road, Oregon)*
(a.k.a. Old Westover Landfill)

Site History: This site accepted municipal, industrial and commercial waste from 1969-1975. After operations ended, Commercial Oil Services, Inc. purchased the site.

Site Investigation (1987)
Ohio EPA took samples in June 1987 and found leachate in a field north of what is now the Envirosafe Hazardous Waste Landfill. Further investigations are needed to determine if the contamination on this site is from the adjacent Envirosafe hazardous waste landfill.

Lead Organization: Ohio EPA

Libbey-Owens-Ford, Inc. *(1769 East Broadway, Toledo*)
(a.k.a. Pilkington)

Site History: At one time tributaries of Otter Creek entered this site at three locations and ran through concrete structures under several impoundments, which were used for wastewater treatment. Chemicals of concern identified at this site were arsenic, phthalates, dienoctyl phthalate, and other unknown chemicals. In addition to the site improvements, Pilkington continues to monitor the site and to identify and implement improvements, as necessary, to meet environmental objectives. (see Issue 10 - Industrial Dischargers for more information on this site.)

Site Investigation (1992, 1997, 1998, 1999)
Libbey-Owens-Ford did site investigations in 1992, 1997, 1998, and 1999.

(1997-1998)
Pilkington did a wastewater treatment study.

Remediation (1985-1994)
In 1985, 1986 and 1989 new clay caps were installed. In 1988 through 1994 an extensive wastewater collection system incorporating underdrains, well points, horizontal wells, and pump stations was installed. In 1988 through 1989 Otter Creek was rerouted around this site. The total cost for all the remediation and site investigations done by Libbey-Owens-Ford from 1985-1994 was $ 3.6 million dollars.

Lead Organization: Libbey-Owens-Ford, Inc. (now Pilkington)

Matlack Trucking *(1728 Drouillard Road, Toledo)*

Site History: The concern on this abandoned site is solvent contaminated soils. Matlack Trucking is now bankrupt and estimated costs for cleaning up this site have been included as part of a potential claim by the State of Ohio against Matlack. The site has abandoned truck trailers labeled hazardous and there is a questionable soil pile on site. This site discharged during its operation to the Toledo sewer system from an above ground oil separator.

Site Investigation (2001)
In 2001 Ohio EPA did two site inspections to make estimates of possible clean up costs at the site.

Millard Ave. Overpass *(Millard Ave. between Front St. and Otter Creek Rd.)* – see Duck Creek Watershed

Sun Oil Company *(1819 Woodville Rd., Oregon)*

Site History: The 400-acre Sun Oil Refinery has been in operation since the early 1900s. Their Toledo operations consist of the refinery proper, a tank farm and a marine loading facility (located 1 ½ miles from the refinery, on the Maumee River). It primarily processes light crude oil into gasoline but other products include propane, mineral spirits, kerosene, fuel oils, carbon black oil and asphalt. Sun Oil had a large number of violations of their NPDES (National Pollutant Discharge Elimination System) permit until a new wastewater treatment system was installed and process water discharge to Otter Creek was eliminated in 1993. Ohio EPA Emergency Response Records from 1978 to 1988 contained 34 reported spills at this site. (See Issue 10 - Industrial

Dischargers for more information on this site.)

Site Investigation (1982, 1986, 1987)
Bioassays were done in 1982 and 1986. The 1986 bioassay demonstrated toxicity. In 1987 Ohio EPA's Division of Water Quality Monitoring and Assessment did screening bioassays of two grab samples and a composite sample from the Sun outfall #001 in conjunction with permit re-issuance. Samples, which all had a petroleum odor, demonstrated toxicity. Further testing of effluents to verify toxicity was recommended.

(1991)
In 1991 Ohio EPA Division of Ground Water reviewed reports prepared by Groundwater and Environmental Services, Inc. and concurred with the findings that oil product was found in eight of nine monitoring wells in the area of the former impoundment basin. The amounts ranged from 1.46 feet thick to 7.2 feet thick. Sun Oil is currently recovering this product from the ground water. It is pumped from the wells and routed through an oil/water separator and returned to the refining process.

Lead Organization: Sun Oil, Ohio EPA

(1995-1996)
This site was investigated as a part of the Ohio EPA Maumee Area of Concern Project Phase II Site Assessments. Three areas of concern were identified - groundwater contamination beneath Lake Charles (the former wastewater impoundment), the leaded tank bottom disposal area, and contamination of Otter Creek at the Sun Oil outfalls (NPDES permit). Further remedial investigation was recommended.

Lead Organization: Ohio EPA (funded in part by a grant from US EPA)

Remediation (1990-1993)
In 1993 Sun Oil completed construction of a new wastewater treatment facility which began discharging to the city of Toledo's sewer system. It Included an additional air floatation unit, new equalization tanks and a new bio-treatment system. This eliminated the discharge of process wastewater to Otter Creek.

Toledo Powdered Metals *(1700 Landis Ave., Oregon)*
(a.k.a. Republic Steel Corp., Metal Deck, Inc., Epic Metals Corp., Co-Bar Corp.)

Site History: In 1953 this 20-acre property was purchased by the Republic Steel Corp (a.k.a. Toledo Powdered Metals) and operated as a powdered metal fabricator until it was sold in 1968. The next owner, Metal Deck, Inc., operated on the site from 1968 to 1976. Epic Metals Corp owned the property from 1976 until 1985. The current operator is Co-Bar Corporation, which straightens coiled steel rods into rolled steel.

Site Investigation (1990, 1994, 1996)
In 1990 Bowser-Morner conducted a Phase I Site Assessment to determine the current environmental conditions of the property. This study was updated in 1994. Their 1990 assessment identified 4 areas of concern at the site: 1) cooling lubricants waste, 2) waste drums, 3) underground storage tanks (USTs), and 4) transformers. In the 1994 update it was noted that the waste drums and USTs were removed and the transformers were drained and one was refilled with non-PCB fluids. Concern #1 appeared not to have been addressed. The 1994 update concluded that there was no

evidence of significant contamination at the site.

Lead Organization: Co-Bar Corporation (contractor: Bowser-Morner)

(1996)
The site was investigated as part of the Ohio EPA Maumee Area of Concern Project Phase II Site Assessments in 1996. The site was designated as no further remedial action planned.

Lead Organization: Ohio EPA (funded in part by a grant from US EPA)

Remediation (1991-1993)
Waste drums and underground storage tanks were removed. Transformers were drained and one was refilled with non-PCB fluids. (see Site Investigation above)

Union Oil Company *(1840 Otter Creek Rd., Oregon)*
(a.k.a. UNO-VEN Corp., UNOCA, Pure Oil Co.)

Site History: The Pure Oil Company operated on this site from the 1930s to mid 1960s. The Pure property (about 110 acres) was purchased and leased from the Standard Oil Co. (now BP Oil Co.). Operations included refinery operations, storage and distribution. Tank bottom wastes were buried on site in the 40's and 50's. The refinery operations were sold to Standard Oil in 1967 and dismantled. BP acquired the refinery part of the property and conducted required corrective action on the refinery property as a result of the issuance of a RCRA permit to BP on Jan. 30, 1989. In 1989 the remaining 69 acres were transferred from the Pure Oil Co. to UNO-VEN. Spills occurred in June of 1994 (13,000 gallons from a ruptured pipeline, remediated without regulatory oversight) and in Feb. of 1994 (between 25 gallons and 120 barrels of gasoline from a tank). During a 1992 closure of two underground storage tanks, detectable levels of TPH concentrations and BTEX compounds were found. This site currently operates as a bulk storage and distribution terminal and has a NPDES permit for discharge to Driftmeyer Ditch.

Site Investigation (1996)
In 1996 this site was investigated as part of the Ohio EPA Maumee Area of Concern Project Phase II Site Assessments. This site was not recommended for further action.

Lead Organization: Ohio EPA (funded in part by a grant from US EPA)

Westover Corporation Sanitary Landfill *(815 Otter Creek Road, Oregon)*

Site History: Owned by George Gradel Company, this 10-acre parcel of land is in a flood plain of Otter Creek. The Westover Corporation operated it as a landfill from 1972 until 1987. It contains municipal waste from residents of Oregon (40%), commercial waste (30%), industrial sludges, solvents, and paint waste from Dana, Manville, Sun Oil and BP (30%). Baghouse dust, chromium contaminated soil, polyurethane sawdust and barreled polyester resins were also taken. A report from the early 1970s indicated aluminum oxide was a major contaminant at the site. Analysis of the leachate performed in 1990 showed high levels of ammonia, nitrogen, aluminum, lead and zinc. Solvents, pesticides and other organic pollutants were found.

Site Investigation (1987)
A Potential Hazardous Waste Site Preliminary Assessment was completed for this site by Ohio EPA on July 22, 1987. It recommended additional monitoring of the leachate and evaluation of the water quality of Otter Creek.

(1994, 1995)
Site reconnaissance visits were conducted by Ohio EPA in August 1994 and March 1995. The 1994 visit revealed leachate seeps and waste erosion problems.

(1996)
In 1996 this site was investigated as a part of the Ohio EPA Maumee Area of Concern Project Phase II Site Investigations. Two site visits in 1996 confirmed leachate releases. Analysis of on-site soil samples, sediment samples from Otter Creek and water samples demonstrated contamination, which may be associated with the site. It was recommended that further investigation/evaluation be done to more accurately characterize its impact.

Lead Organization: Ohio EPA (funded in part by a grant from US EPA)

Remediation (1987)
George Gradel Co. hired Hull & Associates, Inc. to close this site as ordered by Ohio EPA. Hull & Associates, Inc. identified methane as the primarily driver of leachate seeps in the perimeter dike. Methane venting controlled the methane concern. The cutoff of flow from a leaking City of Toledo drinking water line reduced the leachate seeps. The removal of recharge and capping of the landfill resulted in a significant drop in the leachate. A compacted clay cap, along with the leachate control system and methane venting, were designed and installed at the time of closure.

Lead Organization: George Gradel Co. (contractor: Hull & Associates, Inc.)

Swan Creek Watershed

Allied Automotive Toledo Stamping *(43 S. Fearing Blvd., Toledo)*
(a.k.a. Toledo Stamping and Manufacturing, Co.)

Site History: This 2.66 acre site is located at the corner of Hill Ave. and Fearing Blvd. adjacent to the Conrail property and railroad tracks. Stamping activities have been in operation at this site since 1934. The plant produced engine rocker arms, disc brake shoes, trailer brake actuators and other heavy gauge stampings. Oils and solvents have been used in the manufacturing process. Waste oils and/or waste solvents were stored, spilled or disposed of at this site. The primary area of concern on this property is along the Conrail tracks where every month approximately three 55-gallon drums of waste oil were used to control weed growth from 1958 to 1978.

Site Investigation (1985-1986)
Initial site investigations were performed by T.A. Gleason Associates in October and November 1985. Additional groundwater sampling and analysis was done in December 1985, February 1986 and March 1986. A site assessment was completed in 1986 by T.A. Gleason. Test borings, soil sampling, construction of monitoring wells, and hydraulic testing took place. Hydraulic testing indicated shallow ground water flowing laterally through sandy soil over a less permeable layer. It was

expected to flow towards Swan Creek. Oil, grease, alkanes, alkylbenzenes, and trace levels of VOCs were detected in the upper 1.5 feet of soil along the Conrail tracks. Two underground fuel tanks were sampled. Further analysis in August 1986 indicated that soils in the rail siding area also had trace levels of heavy metals.

Remediation (1987)
A Soil Removal and Disposal Plan was submitted to Ohio EPA for this property.

Lead Organization: Allied Automotive (contractor: T.A. Gleason Associates)

(1988)
A voluntary remediation was conducted on this site from April to July 1988. Railroad tracks and ties were removed and contaminated soil was excavated to a depth of 2 to 2.5 feet along the rail siding were waste oil had been applied. Approximately 540 cubic yards of soil were excavated and disposed of at Evergreen Landfill. The excavation was backfilled with clean sand and covered with topsoil.

Lead Organization: Allied Automotive (contractor: T.A. Gleason Associates)

American National Can Company *(10444 Waterville-Swanton Road, Whitehouse)*

Site History: The American National Can Company manufactures two-piece aluminum and steel cans at the 48 acre site. The facility utilized a lagoon as a holding basin for effluent generated during the manufacturing process. The effluent was pretreated in the plant. The lagoon was used for a period of approximately one year (1974-1975) and permanently removed in 1992. The potential contaminant of concern appears to be metals. The current owner is American Can Packaging, Inc.

Site Investigation (1997)
The site was investigated as part of the Ohio EPA Maumee Area of Concern Project Phase III Site Assessments in 1997. The site was designated as no further remedial action planned.

Lead Organization: Ohio EPA (funded in part by a grant from US EPA)

Remediation (1989-1993)
In 1989 the original pretreatment system was replaced with a single stage lime and settle wastewater treatment system. On July 10, 1992 Ohio EPA approved plans for the closure of the lagoon and the closure was completed by May 1993. Cousins Waste Control removed the sludge, which was solidified with kiln dust and disposed at Evergreen Landfill.

Lead Organization: American National Can Company
(contractor: Cousins Waste Control)

Angola Road Landfill *(7717 Angola Road, Holland)*

Site History: The Angola Road Landfill was an active repository for wastes from the 1950s until the early 1960s. The landfill accepted typical household/municipal refuse. Most of the waste was deposited in the southeast corner of the site. Ohio EPA found lead in the leachate in 1982. A mobile home park has been constructed on this site.

Site Investigation (1997)
The site was investigated as part of the Ohio EPA Maumee Area of Concern Project Phase III Site Assessments in 1997. The mobile home park's wastewater treatment package plant is in violation of its NPDES permit. Ohio EPA's Division of Surface Water has initiated enforcement actions. The DERR Site Assessment of 1997 recommends that the site be further investigated after the site is in compliance with the NPDES permit.

Lead Organization: Ohio EPA (funded in part by a grant from US EPA)

Arlington Ave. Dump *(Arlington Ave., southwest of Detroit and South Ave., Toledo)*

Site History: Information does not appear to exist with respect to the actual existence or operation of this suspected dump. Lucas County Solid Waste District Inventory lists this as a closed dump.

Bethel Lutheran Church *(1853 South Ave., Toledo)*

Site History: Prior to the construction of the Bethel Lutheran Church in 1953, this site was part of the extensive dumping that occurred on Swan Creek throughout much of the downstream area in Toledo (downstream from Detroit Ave.). The dump accepted typical industrial and municipal refuse and demolition debris. This site and the surrounding neighborhood was often subject to flooding. In 1994 the US Army Corps of Engineers constructed a levee, floodwall and ponding area to control this flooding problem.

Site Investigation (1993)
The site was investigated in conjunction with a flood control project proposed by the US Army Corps of Engineers. Medical waste was suspected in the area of the flood control project, however no significant medical waste was found. The investigation did confirm the existence of household waste and construction debris.

Lead Organization: US Army Corps of Engineers, City of Toledo, Ohio EPA

(1997)
The site was investigated as part of the Ohio EPA Maumee Area of Concern Project Phase III Site Assessments in 1997. The site was designated as no further remedial action planned.

Lead Organization: Ohio EPA (funded in part by a grant from US EPA)

Champion Spark Plug *(900 Upton Ave., Toledo)*
(a.k.a. Cooper Automotive Company)

Site History: Champion Spark Plug was an engineering facility where spark plugs for various engines were developed and tested. Contamination on the site was the result of historic leaks from underground storage tanks. The soil and groundwater was contaminated in 1986 by accidental releases of benzene, toluene, ethyl benzene, xylenes, and petroleum hydrocarbons and in 1987 by mineral spirits. The

contaminant pathway was identified as ground water. In 1988 Champion reported a suspected release of cutting oils from the southwest corner of the manufacturing building on Montrose Street. Free oil was found in a sewer that was exposed. When the oil was removed, it was replaced by oil flowing in from the gravel fill around the building. This site was sold in 1998 to Cooper Automotive Company. It is now owned by Industrial Recovery Capital Company of Ohio.

Site Investigation (1989)
Environmental Strategies Corporation was contracted by Champion Spark Plug to sample for petroleum hydrocarbons and develop a soil and groundwater remediation program.

Lead Organization: Champion Spark Plug (contractor: ESC)

Remediation (1987)
Champion Spark Plug conducted a voluntary remediation on this property that included removal and decontamination of four underground fuel storage tanks, removal of contaminated soils, and disposal of underground storage tank contents. At least one monitoring well was installed. Ohio EPA provided oversight for the remediation, without an Administrative Order, until 1990. Following this removal it was discovered that soils with elevated gasoline, benzene and hydrocarbons were not all removed.

(1988)
Following the investigations of a suspected cutting oil release, a dewatering sump, and down grout collar around the down gradient sewer line was installed.

(1989-1990)
Two underground mineral spirit tanks and associated contaminated soils were removed.

Lead Organization: Champion Spark Plug

Collaborator(s): Ohio EPA

Champion Street Dump *(Swan Creek at Champion Street, Toledo)*
(a.k.a. Swan Creek at Champion Street Dump)

Site History: Located northwest of the South Ave. and Champion St. intersection, the former Swan Creek at Champion Street Dump was operated, by the City of Toledo from 1945 until 1950. The Dump accepted typical household/municipal refuse only.

Site Investigation (1997)
The site was investigated as part of the Ohio EPA Maumee Area of Concern Project Phase III Site Assessments in 1997. The site was designated as no further remedial action planned.

Lead Organization: Ohio EPA (funded in part by a grant from US EPA)

Chester Street Dump *(Swan Creek at Chester Street, Toledo)*

Site History: This dump is reportedly located where Chester St. dead ends at Swan Creek. The Chester Street Dump operated from approximately 1948 until 1955 and accepted typical household/municipal refuse and commercial waste only. Suspected contaminants of concern included organic constituents and metals.

Site Investigation (1997)
The site was investigated as part of the Ohio EPA Maumee Area of Concern Project Phase III Site Assessments in 1997. The site was designated as no further remedial action planned.

Lead Organization: Ohio EPA (funded in part by a grant from US EPA)

Columbia Gas (*328 South Erie Street, Toledo)*
(a.k.a. Toledo Coal Gas Plant, Toledo Gas, Light, and Coke Company, Ohio Fuel Gas Co.)

Site History: The former Toledo Gas, Light, and Coke Company was a manufacturing facility for coal products from 1865 to 1947. The manufacturing processes ceased in 1947 when the Ohio Fuel Gas Co. purchased the property. They used it for offices and a garage from 1947 to 1964. In 1964 Columbia Gas Co. purchased the site. They presently have one building that is used as a garage.

Site Investigation (1993)
Seven soil borings were done to provide geotechnical information in order to install an erosion barrier.

(1995)
Three additional soil borings were done in 1995 for more information.

During the replacement of two underground storage tanks in 1995, suspicious odors prompted testing. The tanks were tested and did not leak. Five soil borings were taken around the tanks. Concentrations of benzene, toluene, ethylbenzene, and total xylenes (BTEX) were present.

(1996)

In February 1996 a site assessment was done in response to a suspected release from a 10,000 gallon gasoline UST. In March 1996 more soil borings were done and the soil was analyzed for BTEX and TPH. Four borings were converted into monitoring wells and ground water was analyzed for BTEX. In June 1996 four additional borings were done to characterize the extent of the soil and groundwater contamination. On July 1, 1996 ground water analysis demonstrated the presence of a dense, non-aqueous phase liquid (DNAPL) in one well. The contractor attributed this to historical practices.

Lead Organization: Columbia Gas (contractors - Geraghty & Miller, Inc., BEC)

(1997)
The site was investigated as part of the Ohio EPA Maumee Area of Concern Project Phase III Site Assessments in 1997. The site was recommended for additional investigative activities.

Lead Organization: Ohio EPA (funded in part by a grant from US EPA)

Remediation (date unknown)
Columbia Gas has removed a UST, installed a steel barrier, and participated in the BUSTR removal program. Columbia Gas has reportedly indicated their intent to enter the Voluntary Action Program (VAP).

Lead Organization: Columbia Gas

Detroit Lead Battery Recycler *(5715 Angola Road, Toledo)*

Site History: This 2.67 acre site was originally a brass foundry operation from the 1960s until December 1980, when the facility was purchased by Detroit Lead Recyclers. It was then operated as a battery (primarily automotive) recycling facility. The potential contaminants of concern appear to be metals, particularly lead. The facility has been inactive since 1983. Another company has expressed interest in purchasing this property after the clean up was completed.

Site Investigation (1996-1998)
In November 1996 Nova Pb entered a Consent Order with US EPA to perform an Engineering Evaluation/Cost Analysis (EE/CA) in preparation for final remediation. The EE/CA was completed in 1998.

Lead Organization: Nova Pb, US EPA

(1997)
The site was investigated as part of the Ohio EPA Maumee Area of Concern Project Phase III Site Assessments in 1997. The site was designated as no further remedial action planned because the remediation was in progress.

Lead Organization: Ohio EPA (funded in part by a grant from US EPA)

Remediation (1994)
A Time Critical Removal Action was conducted during the summer of 1994 by 13 PRPs pursuant to a US EPA Consent Order. Several stockpiles of waste containing lead (117.21 tons) were transported off-site for treatment and disposal. Nearly 500

tons of contaminated soil was excavated, treated and disposed off-site. The removal action also included construction of a berm to prevent off-site movement of surface water.

(1996-2000)
The site was remediated under an Administrative Order of Consent between the potentially responsible parties and US EPA using the SACM (Superfund Accelerated Cleanup Model). An EE/CA was completed in 1998. On-site soils exceeding 1,540 ppm of lead (industrial standard) were removed from the site and off-site soils, exceeding 400 ppm (residential standard), were removed from two locations. Site activities included delineation, excavation, staging, and treatment of lead-impacted soils. Following excavation the site was backfilled with soil and gravel. The remediation was completed in 2000 with a deed restriction on the future use of the property.

Lead Organization: US EPA, PRPs

Collaborator(s): Ohio EPA

Frankfort Auto Parts *(229 South Schwamberger Road, Holland)*
(a.k.a. Hudson Site)

Site History: A 3.7 acre site, the former Frankfort Auto Parts was discovered because of a citizen complaint regarding abandoned and deteriorating drums. The operational history of the auto parts junkyard is unknown. Organic solvents were determined as the potential constituent of concern. Wiregrass Ditch serves as a conduit to take contamination off site.

Site Investigation (1993)
In December 1993 Ohio EPA investigated this site and found 55-gallon drums beneath a pile of deteriorating tires. Some of the drums had released their contents and two of the drums had a placard saying ”dispose of in an EPA approved TSD facility.”

Lead Organization: Ohio EPA

Remediation (1995)
The former Frankfort Auto Parts site was the subject of US EPA removal action which began in April and concluded in November 1995. Approximately 150 55-gallon drums of various hazardous substances, etc., and contaminated surface soils were removed for appropriate disposal.

Lead Organization: US EPA

Griswold Landfill *(10745 Old State Line Road, Swanton)*

Site History: The Griswold site was used as a disposal site for household wastes, appliances, construction debris, tires, drums of various solvents, etc. for an undetermined number of years. The potential contaminants of concern appear to be metals and organic solvents.

Site Investigation (1993)
Following a US EPA Removal Action, the Ohio EPA performed a post removal Site Inspection Investigation in September 1993. It was determined that the site did not pose a significant threat to human health and the environment . Therefore, no further action was recommended.

Lead Organization: Ohio EPA

Remediation (1991-1992)
The former Griswold site was the subject of a US EPA removal action. Numerous drums of paint waste, etc. and piles of aluminum smelting (i.e. dross) were removed for appropriate disposal.

Lead Organization: US EPA

Collaborator(s): Ohio EPA

Holland Village Dump *(Northwest Corner of Front Street and Conrail Tracks)*

Site History: Minimal information exists with respect to the operational history of the former Holland Village Dump. The Dump accepted typical household/municipal refuse until 1958. It is currently covered by concrete, stone, rock, slabs, and soils that were dumped there starting in the 1980s.

Site Investigation (1997)
The site was investigated as part of the Ohio EPA Maumee Area of Concern Project Phase III Site Assessments in 1997. The site was designated as no further remedial action planned.

Lead Organization: Ohio EPA (funded in part by US EPA)

International Mineral and Chemical *(10401 Old State Line Road, Spencer Township)*

Site History: This 85 acre property is located on the corner of Old State Line Road and Eber Road. It was owned by International Mineral and Chemical (IMC) from 1946 to 1956. IMC allegedly excavated trenches and disposed of liquid waste and drums in the trenches. The waste was reportedly from a division of IMC, Amino Products, located in Rossford. Amino Products manufactured monosodium glutamate from sugar beet industry waste. Since then there have been several owners of this property. The current owner is Lucas County and it is within the Westwinds Industrial Park. Excavated trenches, 1100 feet in length, still remain on this site.

Site Investigation (1992-1995)
In 1992 Ohio EPA conducted interviews of residents near the IMC property. They also conducted sampling of residential wells and found several SVOCs and VOCs, including solvents and chlorinated organic compounds. Following these activities Ohio EPA sent a letter of inquiry to IMC Global, requesting specific information about any disposal activities that may have occurred on this site. A response was received from both IMC Global's legal counsel and the Mallinckrodt Group, Inc., stating they had no record of disposal on the property.

Lead Organization: Ohio EPA

(1996)
In 1996 a Phase I Environmental Site Assessment was conducted on the IMC property by Bowser-Morner for the Lucas County Board of Commissioners. Based on historical information, the report concluded that significant environmental contamination exists at this site.

(2000)
In October 2000 MEC conducted a Phase II Site Assessment for the Lucas County Board of Commissioners. They did not find any material that could be considered a characteristic hazardous waste, however surficial dumping had occurred and evidence of buried debris existed.

Remediation (2001)
Midwest Environmental Consultants managed voluntary waste removal activities on this site for Lucas County and issued a final report in April 2001. George Gradel Co. was contracted to remove waste and debris from this property and a second 10 acre property west of this site.

Irwin Road Dump *(809 South Irwin Road, Spencer Township)*

Site History: Minimal information exists with respect to the operational history of the former Irwin Road Dump. The 5-acre dump was active as a township dump and accepted typical household/municipal and commercial refuse for a period of time in the late 1960s and early 1970s. It is now owned by 360 Communications.

Site Investigation (1997)
The site was investigated as part of the Ohio EPA Maumee Area of Concern Project Phase III Site Assessments in 1997. The site was designated as no further remedial action planned.

Lead Organization: Ohio EPA (funded in part with a grant from US EPA)

Jennison-Wright Corporation *(2332 Broadway Avenue, Toledo - east of Toledo Zoo)*

Site History: The former Jennison-Wright facility operated as a creosote wood treatment facility manufacturing railroad ties until 1990. Potential contaminants of concern include polynuclear aromatic hydrocarbons, benzene, toluene, ethyl benzene and xylenes.

Site Investigation (1995)
In October 1995, Ohio EPA began working with the railroads regarding investigation of this property. The site was under Administrative Order of Consent between the potentially responsible parties and the State of Ohio to perform a Remedial Investigation/Feasibility Study. The Feasibility Study indicates contaminant impact of soils and groundwater and recommends measures to address contamination.

Lead Organization: Ohio EPA, Norfolk and Southern Railroad, Conrail, Penn Central

Remediation (1994-Present)

This site is under Administrative Order and the RI/FS has been approved. An Interim Remedial Action was performed by PRPs as a condition of the Administrative Order. From October 1994 through April 1995, 39,500 tons of tar/creosote impacted soils, 885 tons of sludge from tank bottoms, 129,118 gallons of wastewater collected from structures on the property, and 2100 tons of debris were removed from the site and disposed of in the appropriate facilities. 3350 tons of concrete were decontaminated, crushed and use as backfill in the soil excavation areas and 460 tons of steel were decontaminated and recycled. In the fall of 2001, the Preferred Plan for remediation was still under development by Ohio EPA. The completion of the final remedy is anticipated in 2003.

Lead Organization: Ohio EPA, Norfolk and Western Railroad, Conrail (successor of liability for former Penn Central), American Premier Underwriters

Louie Street Dump *(Louie Street at Swan Creek, Toledo)*

Site History: The former Louie Street at Swan Creek Dump was a municipal dump operated by the City of Toledo between 1920 and 1955. The Dump accepted typical household/municipal refuse.

Site Investigation (1997)
The site was investigated as part of the Ohio EPA Maumee Area of Concern Project Phase III Site Assessments in 1997. The site was designated as no further remedial action planned.

Lead Organization: Ohio EPA (funded in part by a grant from US EPA)

NL Industries Bearings Division *(715 Spencer Street, Toledo)*
(a.k.a. Bunting, Brass, and Bronze, Inc., Eagle-Picher Bearings Co.)

Site History: This is a 10-acre site that was owned and operated by NL Industries as a brass foundry. NL Industries manufactured brass and bronze machine parts from 1916 to 1980. During this time it was also known as the Bunting, Brass, and Bronze Company (Bunting is a subsidiary of NL Industries). Eagle-Picher Bearings Co. purchased the property in 1980 and manufactured bronze bearings and cast bars from 1981 to January 1985. Lead bearings were also manufactured. Chemicals of concern are solvents and heavy metals, possibly lead. There is a possibility that USTs may be present. Containers at the site may contain heavy metals. A fire occurred in 1993 and one building is almost completely destroyed.

Site Investigation (1985)
In September 1985 a Potential Hazardous Waste Preliminary Site Assessment was done by Ohio EPA for US EPA. This site was designated as a low priority for investigations due to zero drinking water population targets, the closure of the manufacturing operations and the off-site disposal of wastes.

Lead Organization: Ohio EPA, US EPA

Ohio Air National Guard *(at the Toledo Express Airport, Swanton)*

Site History: The Army Corps of Engineers has jurisdiction over this site, however Ohio EPA provides oversight to ensure compliance for them as per the Defense State Memorandum of Agreement . The site is subject to periodic ground water monitoring. Low level solvents in the soil are a contaminant of concern.

Providence Township Dump *(7349 and 7421 Manore Road, Providence Township)*

Site History: The Providence Township Dump reportedly operated from the early 1960s until 1970 as a privately owned dumpsite. The dump accepted typical household/municipal refuse but most of the wastes disposed were household appliances. Current use of the site is residential. It was closed in 1970 by order of the Lucas County Health Department.

Site Investigation (1997)
The site was investigated as part of the Ohio EPA Maumee Area of Concern Project Phase III Site Assessments in 1997. The site was designated as no further remedial action planned.

Lead Organization: Ohio EPA (funded in part by a grant from US EPA)

Providence Township Dump *(Between Schadel Road and Hertzfeld Road, Providence Township*)

Site History: Information does not appear to exist with respect to the actual existence or operation of this suspected landfill.

Spencer Township Dump *(340 Eber Rd. - between Frankfort Rd. and the Tributary, Spencer Township)* (a.k.a. Eber Road Dump)

Site History: Spencer Township Dump was privately owned and located along the east side of Eber Road just south of Frankfort Road. It was opened in the early 1950s and closed in the late 1960s. Evidence of buried debris exist throughout the 10 acre lot. The dump allegedly accepted any kind of waste for the right price, including such items as paint waste. Interviews of residents suggested that paint, tar and unknown drums might have been buried here along with residential waste.

Site Investigation (1993)
This site was brought to the attention of Ohio EPA and it was investigated. Thirty drums were found above ground with evidence of additional buried drums. The drums containing unknown substances were sampled. The site was referred to US EPA.

Lead Organization: Ohio EPA

(1994)
US EPA investigated the site and took samples from 3 drums. It was found that a Time Critical Removal was not necessary.

Lead Organization: US EPA

(1997)
In 1997 the Spencer Township Dump was investigated as part of the Ohio EPA Maumee Area of Concern Project Phase III Site Assessments. Surface water and sediment samples from an unnamed tributary as well as soil samples were taken. Fifteen drums were found along with drums, tires, and other debris in a "lifeless" pond. This site was recommended for no further action.

Lead Organization: Ohio EPA (funded in part by a grant from US EPA)

Springfield-Monclova Township Dump (*Reed Rd, Swanton)*
(a.k.a. Reed Road Landfill)

Site History: Operated by Lucas County and located on Reed Road 1/2 mile west of Berkey-Southern Road (State Route 295), the former Springfield-Monclova Township Dump operated as a solid waste landfill between 1950 and 1970, when it was converted into a transfer station. It currently has dense vegetation with some trails for all terrain vehicles.

Site Investigation (1997)
The site was investigated as part of the Ohio EPA Maumee Area of Concern Project Phase III Site Assessments in 1997. The site was designated as no further remedial action planned.

Lead Organization: Ohio EPA (funded in part by a grant from US EPA)

Swan Creek Landfill *(north side of Glendale Road near Reynolds Road, Toledo)*

Site History: Information does not appear to exist with respect to the existence or operation of this suspected landfill.

Site Investigation (1997)
The site was investigated as part of the Ohio EPA Maumee Area of Concern Project Phase III Site Assessments in 1997. The site was designated as no further remedial action planned.

Lead Organization: Ohio EPA (funded in part by a grant from US EPA)

Swanton Township Dump *(on Manore Rd, North of Neapolis-Waterville Rd., Swanton Township*)

Site History: The Swanton Township Dump was a municipal dump operating from the mid 1950s until the late 1960s. The Dump accepted typical household/municipal refuse. The site is currently owned by the Township of Swanton and used for the storage of road maintenance supplies.

Site Investigation (1997)
The site was investigated as part of the Ohio EPA Maumee Area of Concern Project Phase III Site Assessments in 1997. The site was designated as no further remedial action planned.

Lead Organization: Ohio EPA (funded in part by a grant from US EPA)

Swanton Township Dump *(North of Monclova Rd., East of Southern Rd., South of Route 295, and West of Spencer St., Swanton Township)*

Site History: Information does not appear to exist with respect to the actual existence or operation of this suspected landfill.

Webstrand Corporation *(525 Hamilton St., Toledo)*

Site History: The former Webstrand Corporation facility located at the corner of Hamilton St. and Collingwood Blvd. has been historically operated as an engineering and battery research facility, a manufacturer of automotive instruments, and a storage site for finished can inventory. The potential contaminants of concern include organic solvents and metals.

Site Investigation (1987)
The site was evaluated as a Preliminary Assessment and determined to be a low priority for additional investigation.

Lead Organization: Ohio EPA

Western Ave. Dump *(1401-1463 Western Ave., Toledo)*
a.k.a. Swan Creek at Western Ave. Dump

Site History: The Western Ave. Dump operated until approximately 1930. The Dump accepted typical household/municipal refuse and commercial wastes. Potential contaminants of concern include organic constituents and metals. The area is now residential.

Site Investigation (1997)
The site was investigated as part of the Ohio EPA Maumee Area of Concern Phase III Site Assessments in 1997. The site was designated as no further remedial action planned.

Lead Organization: Ohio EPA (funded in part by a grant from US EPA)

Other Area Watersheds

Dial Corporation *(6120 N. Detroit Ave., Toledo)*
(Shantee Creek Watershed)

Site History: This facility manufactured liquid detergents. After changing ownership several times, Dial Corporation purchased the property in 1985, then announced its closure in 1988. The area of concern is a wastewater retention pond which is equipped with an overflow drain. Low levels of grease and oils and high levels of PAHs were detected in the soil.

Site Investigation (mid 1990s)
In the mid-1990s US EPA did a Screening Site Investigation and recommended No Further Action.

Remediation (early 1990s)
In the early 1990s a voluntary remediation was conducted. The waste lagoons were removed and refilled with clean material.

General Motors Corp. *(1455 W. Alexis Rd., Toledo)*
(Silver & Shantee Creeks Watersheds)

Site History: The General Motors PowerTrain Plant manufactures automatic transmissions for automobiles.

Site Investigation (1994)
Ohio EPA conducted a Screening Site Investigation in 1994. Contaminants were found in the groundwater, surface soil, and sediment samples collected. However, it was concluded that no human or environmental populations were known to have been exposed to the contamination attributable to this site.

Lead Organization: Ohio EPA

Heist Corporation *(3804 Cedar Point Road, Oregon)*
(a.k.a. Colander, C.H. Heist Cleaning Services)
(Driftmeyer Ditch Watershed)

Site History: Heist Cleaning Services began operations on this 6 acre site in 1971. Heist conducts cleaning operations off-site. No hazardous wastes were generated or stored by Heist Cleaning Service. Most of the site is owned by Colander Associates.

The area of concern on this property is a sludge pit measuring one acre at the south end of the site. BP Oil was the former owner of the site and generated the waste (petroleum distillation residues) in the pit. Heist Cleaning Services later used the pit for non-hazardous debris disposal. Aerial photos demonstrate the existence of this pit as early as 1962. In 1983 oil seepage broke through the surface of the pit's clay cap. Oil is the contaminant of concern for this site.

Site Investigation (1981)
Lucas County investigated the site and issued a Public Health Order requiring Heist to

stop on-site debris dumping. Ohio EPA recommended that dirt or fly ash be used to fill the pit in 1981.

(1983)
Ohio EPA inspected the pit and observed a large oily sludge area remaining uncovered. Heist was instructed to properly close this area.

(1985)
A Preliminary Assessment by Ohio EPA recommended a low priority for US EPA Field Investigation Team (FIT) and a medium priority for an Ohio EPA inspection of the site. It also recommended leachate sampling in the pit, additional cover, and periodic monitoring for breakthrough.

(1986)
In July 1986 Ohio EPA did a RCRA hazardous waste inspection and confirmed that Heist Cleaning Services did not generate or transport waste to the site.

(1990)
In April 1990 Ecology & Environment, Inc. (contracted by US EPA) reported to Ohio EPA that the Heist site presented a possible hazard to groundwater in the site area, but due to lacks of targets, Ecology & Environment recommended no further action.

In October 1990 Heist contracted CTI Environmental Services, Inc. to determine the content of materials in the pit. Composite samples to 15 feet below surface contained components of petroleum products.

Also in October 1990 D.F. Stazy & Associates performed a geophysical survey to determine the depth and boundaries of the pit and to further characterize the contents. They found sludge materials to a depth of 15 feet.

(1993)
A Site Evaluation Report by PRC Environmental for US EPA concluded that no documented release to surface water has occurred.

(1994)
A Site Screening Investigation done by PRC Environmental for Ohio EPA concluded that the current potential for release to nearby ditches appears to be low because the former sludge pit is covered and no well-defined drainage routes from the pit to the surface water existed.

Remediation (1981)
In November 1981 Heist claimed that they covered the sludge pit according to Ohio EPA requirements.

(1983)
In response to Ohio EPA , Heist filled and capped the pit.

Jerusalem Township Dump *(11670 State Route 2, Jerusalem Township)*
(Ward Canal Watershed)

Site History: This site is located east of Bono and was operated by Jerusalem Township as a municipal dump and was closed in the 1960s. Waste was disposed of on a ½ acre site near the southwest corner of the property. Waste depth was 12 to 15 feet. No industrial or commercial wastes were accepted. The site has been owned by the Tank Family since 1938, however the residence burned and it is now unoccupied.

Site Investigation (1995-1996)
This site was investigated as a part of the Ohio EPA Maumee Area of Concern Project Phase II Site Assessments and laboratory analysis of the samples indicated the presence of elevated VOC (2-butanone, replicate sample only) as well as PAH contamination (replicate sample only) in the soils of the drainage ditch adjacent to the site. This site was found to not pose an immediate and/or substantial threat to the environment. Therefore, it was recommended for no further remedial action planned.

Lead Organization: Ohio EPA (funded in part by a grant from US EPA)

NL Industries/Doehler-Jarvis Farley/Farley Metals, Inc. *(5400 N. Detroit Avenue, Toledo)*
(Silver & Shantee Creeks Watersheds)

Site History: Located between Silver Creek and Shantee Creek, this site was an on-site storage facility for plating sludges and machine coolant.

Site Investigation (1985)
Ohio EPA performed a Preliminary Site Assessment in 1985 and recommended this site be listed as a low priority for further remedial actions.

Other Activities

Dumps and Landfills Walking Tour
June 1996

Description: Tour for local officials and RAP volunteers to view and hear presentations on XXKem, Stickney Ave. and Tyler St., Dura Ave. Landfill, and the Unnamed Tributary. This tour provided an update of the problems and cleanup activities needed in that area. A wide variety of people attended this informative event including elected officials and media personnel. Approximately 50 people attended the event.

Lead Organization: Maumee RAP Dumps and Landfills Action Group

Ohio EPA's Voluntary Action Program
1996-Present

Description: In June 1994, Governor Voinovich signed S.B. 221 into law, creating a program for voluntary real estate reuse and cleanup. This program is now called the Voluntary Action Program or VAP. Rules allowing property owners, lenders, and developers to investigate and clean up contaminated properties became effective in December

1996.

Prior to the Voluntary Action Program, no one could undertake a cleanup project and be assured it would meet environmental standards without direct oversight from Ohio EPA. Because Ohio EPA had to focus on the worst sites first, others had to wait. This new program minimizes governmental red-tape and maximizes resources and expertise in the private sector. If someone wants to clean up a piece of property, it may be done voluntarily. If the clean up is done according to standards set forth by the Voluntary Action Program rules, the director of Ohio EPA will issue a covenant not to sue, which releases the owner from state civil liability.

In the summer of 2001, US EPA and Ohio EPA signed a memorandum of agreement (MOA). US EPA will view the VAP through a two-track system. The first is the traditional VAP, whereby the volunteer will proceed through the existing program with no public involvement, yet the volunteer can still receive a "comfort letter" from US EPA. The second is the MOA track, where the volunteer will still follow the same VAP rules, however the volunteer will receive a letter of acknowledgement from US EPA that there will be no federal enforcement in the future for those identified areas of concern which were addressed under the VAP.

Lead Organization: Ohio EPA – DERR

Collaborator(s): US EPA

Ottawa River Remediation Bus Tour
1998

Description: A bus tour for local officials and RAP volunteers to view and hear presentations on the numerous cleanup activities completed or underway in the Ottawa River watershed including, Unnamed Tributary remediation, Textileather PCB remediation, Toledo Tie Cleanup, Stickney and Tyler landfill capping, and the Dura Landfill leachate collection and treatment. This tour was to highlight the progress being made toward removing the contaminant sources in this watershed.

Lead Organization: Maumee RAP Dumps and Landfills Action Group

Maumee AOC Uncontrolled Waste Site Database
1999

Description: The University of Toledo worked with the Maumee RAP Dumps and Landfills Action Group to create a database of the uncontrolled waste sites (dumps, abandoned industrial sites, etc.) in the Maumee AOC. The database has all of the currently available information, including site name, location, watershed, contaminants of concern, remediation and CERCLA actions and dates, and location of documents. This database will be used to create maps of the uncontrolled waste sites in the MAOC using GIS technology.

Lead Organization: University of Toledo (partially funded through a LEPF grant)

Collaborator(s): Ohio EPA, Maumee RAP Dumps and Landfills Action Group

Clean Ohio Fund
2001–2005

Description: In November 2000 election, Ohioans approved a $400 million bond. Winning by a comfortable margin, this Conservation and Revitalization Fund initiated by Governor Bob Taft will direct $200 million for preservation of green space and special farmland, bike trails and parks, and programs to clean up streams and polluted waterways. The other $200 million will be earmarked for brownfield redevelopment.

Lead Organization: Ohio Department of Agriculture – Office of Farmland Preservation, Ohio DNR, Ohio Public Works, Ohio Department of Development

Issue 3 - Wetlands and Open Space Preservation

Wetland Reserve Program
1985-Present

Description: The National Wetlands Reserve Program (WRP) began in 1985 as a voluntary program to restore and protect wetlands on private property. This program was initiated in Ohio in 1994. It is an opportunity for landowners to receive financial incentives to enhance wetlands in exchange for retiring marginal agricultural land.

This program improves water quality by filtering sediments and chemicals, reduces flooding, recharges groundwater, and protects biological diversity. It also furnishes educational, scientific, recreational, and aesthetic benefits.

Congress authorized WRP under the Food Security Act of 1985, as amended by the 1990 and 1996 Farm Bills. USDA NRCS administers the program in consultation with the Farm Service Agency (FSA) and other Federal agencies. Funding for WRP comes from the Commodity Credit Corporation.

Landowners who choose to participate in WRP may sell a conservation easement or enter into a cost-share restoration agreement with USDA to restore and protect wetlands. The landowner voluntarily limits future use of the land, yet retains private ownership. The landowner and NRCS develop a plan for the restoration and maintenance of the wetland.

The program offers landowners three options: permanent easements, 30-year easements, and restoration cost-share agreements of a minimum 10-year duration.

Acres Enrolled in WRP in 2001:

Lucas County	None
Wood County	83.2
Ottawa County	913.4

Lead Organization: USDA -NRCS

Wildlife Habitat Incentives Program (WHIP)
1996-Present

Description: This program provides financial incentives to develop habitat for fish and wildlife on private lands. Participants agree to implement a wildlife habitat development plan and USDA agrees to provide cost-share assistance for the implementation of wildlife habitat development practices.

Acres Enrolled in WHIP in 2001:

Lucas County	None
Wood Cunty	None
Ottawa County	40.3

Lead Organization: USDA, ODNR and SWCDs

Collaborator(s): Pheasants Forever

Waterbank Program
1992-1994

Description: Private landowners placed their wetlands and cropland buffer areas into 10-year easements to provide wildlife habitat. Approximately 50 landowners in Ottawa County participated, with 1,971 acres in easements. Lucas and Sandusky County cooperators were involved as well. Initially FSA managed the program and NRCS wrote the conservation plans, now NRCS manages all program facets.

Lead Organization: USDA-NRCS and FSA

Manhattan Marsh Nature Preserve / Detwiler Wetlands
1990-Present

Description: The largest remaining estuarine wetland system in the City of Toledo is now mostly preserved as "Manhattan Marsh Nature Preserve". The complex consists of a 50-acre cattail marsh and pocket prairie fringed by woods and three smaller wetlands. All are connected by Detwiler Creek. Historically the estuary to Swan Creek, and part of Maumee Bay, the area was included in the 1990s designation of the Ohio Coastal Zone. Threats to the marsh were featured in a 1989 article by local outdoor writer Steve Pollick. This lead to the formation of Citizens for Buckeye Basin Parks, Inc. (CBBP), a 501 (c)(3) nonprofit, to support preservation of the area.

CBBP purchased the first acre in 1990 at the corner of Manhattan Boulevard and Suder Avenue. The parcel was sold for $2,000 by Marathon Oil, which discounted the price to support the preserve effort. Acquisition targeted the perimeter, initially, to control access to the wetlands interior and prevent illegal dumping and incompatible developments. In 1997, Canadian National Railroad sold 30 acres, also at a discounted price to support the preserve. Additional parcels were purchased at tax auction, and others donated outright. The current preserve holdings exceed 54 acres.

A building at 720 Suder Avenue was purchased, along with the wetland behind it, for eventual conversion into an environmental education center and preserve visitor center. Considerable additional funding is needed for this endeavor.

In addition, volunteer clean up efforts since 1990 have removed over 180 tons of dumped debris from locations at the marsh and the surrounding area. Additional efforts are planned to remove the final dump area at the marsh.

Future efforts planned include the potential acquisition of an adjacent brownfield site at 600 Bassett Street to convert to green space as part of the preserve. The land would serve as a buffer area to the marsh. A small pond could also be constructed.

Lead Organization: Citizens for Buckeye Basin Parks, Inc.

Collaborator(s): Grants from the Great Lakes Aquatic Habitat Fund, waiver of fees by City of Toledo with assistance of Council member Edna Brown, resolution of support from Toledo City Council, corporate support in the form of discounted land sales, and private donations from Perstorp Polyols, N-Viro, ClearWater, Inc., and others.

Blue Creek Wetlands Demonstration Project
1993-1995

Description: The Blue Creek Wetlands were created to show the effectiveness of wetlands in removing agricultural pollutants, pesticides and sediments from storm water runoff while providing habitat enhancement. This 3-acre wetland was built at the Quarry Pond Farm, at that time owned by the City of Toledo at the former Work House Farm. The average depth of the wetland is 18-inches. The Blue Creek Management Team, a group of nine local government agencies and universities, developed and managed the wetlands. The property was officially dedicated in 1995. Several newsletters were written to keep partners updated on wetland construction and to report on research progress.

Lead Organization: Blue Creek Wetlands Management Team, coordinated by TMACOG (funded in part through a grant from US EPA-GLNPO)

Collaborator(s): University of Toledo, Bowling Green State University (BGSU), Ohio EPA, Lucas SWCD, City of Toledo DNR, Toledo Area Metroparks, Lucas County Engineers, Ohio DNR

Metzger Marsh Wildlife Area Restoration
1994

Description: The re-creation and preservation of the 900+ acre Metzger Marsh Wildlife Area was the state's first restoration of a Lake Erie coastal marsh. A 7,700 foot dike was built to keep carp and other lake impacts out of the marsh to protect vegetation. Fish/water passages in the dike enable water and most fish to flow in and out of the marsh. Water levels were controlled for the first two years to allow the vegetation to flourish.

This marsh was once protected by both a beach and lake-front dike. They were breached in the late 1950s. As late as the mid-1970s, cattails still covered about 40% of the land mass. By the time restoration efforts began in 1994, only 10% of the original wetland remained. Extensive research is being conducted by many organizations to evaluate the success of this restoration project.

Lead Organization: Ohio DNR, US Fish and Wildlife Service (funded in part by a grant from the Great Lakes Protection Fund)

Collaborator(s): Ducks Unlimited, many other organizations

Maumee Bay State Park Coastal Wetlands Improvements
1997-1998

Description: Ohio DNR's Maumee Bay State Park restored a 20-acre area, involving the construction of a 3.5 acre pond as well as restoring native vegetation, controlling exotic species and monitoring changes in bird usage before and after management applications. Restoration of this wetland added to the existing block of wetlands along the south shore of Lake Erie in Northwest Ohio and provided a larger continuous block of wetlands to benefit many species.

Lead Organization: Ohio DNR

Army Corps of Engineers and New Ohio Isolated Wetlands Regulations
2001

Description: The US Supreme Court issued a decision in January 2001 that rolled back federal regulatory authority over isolated wetland areas and identified this authority as belonging to the States. Ohio passed a new wetlands law in July 2001 (Sub. HB 231) that established the Ohio Isolated Wetlands Permitting program at Ohio EPA. Ohio EPA now has sole review authority for all proposed projects in isolated wetlands in Ohio. The new permitting program is designed to provide a streamlined review of proposed impacts and mitigation for isolated wetlands in Ohio.

The law maintains the three-tier wetland categorization system established in rule in 1998 and used under the emergency administrative rules that expired July 19, 2001, and lays out three levels of regulatory review in issuing permits. The different levels of review are based on the category and size of the isolated wetland that is subject to impact. Under these criteria, the Ohio EPA is required to act on a permit application within 30, 90 or 180 days, depending on the level of review.

Maumee River Watershed Wetlands Protection and Enhancement Planning Project
2000-2002

Description: This project is to identify potential high quality wetland sites that can be field checked and ranked into wetland quality indices. Areas adjacent to existing wetlands will also be evaluated through remote sensing for potential wetland mitigation sites. Wetland parcel data will be made available to local planning authorities, cities, townships and conservation agencies involved with wetland preservation and mitigation. A series of workshops and educational outreach programs will be implemented to increase awareness of wetland issues and values as well as highlight the GIS data availability. The ultimate goal is to protect existing wetlands and increase the number of wetland enhancement projects in the watershed. It is anticipated that this project will be complete in June 2002.

Lead Organization: Natural Areas Stewardship, Maumee RAP Open Space and Wetlands Action Group (funded in part by an Ohio EPA 319 grant)

Collaborator(s): Ohio EPA, City of Toledo, Toledo Area Metroparks, Lucas SWCD, Lucas County Auditors Office, Lucas County Commissioners, Lucas County Plan Commission, University of Toledo Urban Affairs, Midwest Environmental Consultants, BGSU, Ohio DNR Scenic Rivers Program, Black Swamp Conservancy District, The Nature Conservancy – Oak Openings Project Office, US Fish and Wildlife Service, TMACOG

Application of Remote Sensing Technology for
Land Cover Analysis and Identification of Wetlands in the Lower Maumee River Watershed
September 2000 - Present

Description: The University of Toledo is examining the ability and potential of using remote sensing imagery to map and classify existing wetlands and potential sites for wetland rehabilitation and mitigation within the Lower Maumee River watershed. This will assist the efforts of the Maumee River Watershed Wetlands Protection and

Enhancement Planning Project by examining the most recent imagery instead of using the 1984 Ohio DNR wetland imagery mapping. This examination will also allow for the consideration of technical and planning implications for the use of this technology to contribute to land cover analysis for wetland identification and management.

Lead Organization: University of Toledo Department of Geography and Planning (funded by a small research grant from the UT Urban Affairs Center)

Ohio DNR Coastal Management Program
May 1997-Present

Description: The Ohio Coastal Management Program, approved by the US Department of Commerce in May 1997, works to enhance, restore, develop, preserve, and protect the resources of the lakeshore of Lake Erie. The plan emphasizes six focus areas to be improved by the ODNR Coastal Management Zone Program: Water resources and watersheds, Coastal land use and development, Coastal habitat, wetlands, and natural areas, Coastal flooding and erosion, Recreational opportunities, and Fish and wildlife resources. The purpose of the program is to promote sustainability-the ability to meet the needs of the present without damaging the needs of future generations. Through this organization, the ODNR provides Coastal Management Assistance Grants to those local communities, educational facilities, and the like for the purpose of funding projects with a direct effect on the protection of Lake Erie coastal resources.

Lead Organization: Ohio DNR

Floodplain Management Workshop
December 10, 1996

Description: This workshop was to assist local officials with understanding the importance of floodplains, floodplain management concepts, and specific National Flood Insurance Program participation responsibilities. It was geared toward elected officials, township-zoning inspectors, county engineers, plan commissions, soil and water conservation districts, and municipal administrators. Approximately 23 people attended this ½ day workshop at the Oak Openings Metropark Lodge.

Lead Organization: Maumee RAP Open Space & Wetlands Action Group, Lucas County EMA, Ohio DNR, Lucas SWCD

Ottawa SWCD Private Lands Wetlands Restoration
1992-1994

Description: Ottawa SWCD provided cost-share funding for eight wetlands restoration projects on private lands in the Lake Erie Marsh focus area, adding more than 53 acres of new and restored wetlands to the region.

Lead Organization: Ottawa SWCD (funded in part by grants from the North American Waterfowl Management Plan and the National Fish and Wildlife Foundation through the North Central Wetlands Restoration Challenge)

OSU Drainage Channel Restoration Project
1999-Present

Description: The Ohio State University Department of Food, Agricultural, & Biological Engineering conducted a study in order to reduce flood peaks and increase flow during critical low-flow periods, decrease suspended solids and fluctuations in dissolved oxygen, restore pool and riffle habitats, create more microhabitats, niches and substrate diversities, and reduce substrate embeddedness. The project, in summary, studied the science of river engineering and stream restoration to determine more natural methods of regulating channel stability and flood control and to restore the natural ecological systems of stream flow. The first objective was to determine watershed sites for evaluation. Secondly, the ecological benefits of each form of channel drainage were analyzed using state clean water standards. Sediment transport, the potential for flood peak, and the cost-benefit analysis of each form of channeling were also analyzed. Finally, a method of implementation was developed. A website and a list-serve were created as a method of obtaining information regarding the project. This website can be found at www.ag.ohio-state.edu/~agwatmgt/.

Lead Organization: The Ohio State University (funded in part by a grant from the Great Lakes Protection Fund)

Collaborator(s): USDA, US Geological Survey, ODNR, USGS, Heidelberg College, The University of Findlay

Issue 4 - Urban Runoff

Correction & Prevention

Health Department Regulations
Ongoing

Description: Health Departments prohibit illicit connections and identify/investigate illicit connections during site visits.

NPDES Phase I
1990

Description: NPDES MS4 Storm Water Permit
US EPA promulgated NPDES Phase I regulations in 1990. Under these regulations all medium and large (over 100,000 population served by separate storm sewers) MS4s were required to obtain NPDES permit coverage for their storm water discharges.

The City of Toledo was the only municipality in the Maumee AOC required to comply under Phase I. Toledo's MS4 NPDES permit became effective on September 1, 1997. After the permit became effective Toledo was required to: update and exercise legal authority to control discharges to and from their storm sewers (within 6 mos.); prohibit non-storm water discharges (on-going); eliminate illicit connections and advise responsible party to contact OEPA (ongoing); inventory major MS4 outfalls (within 24 mos); establish and/or modify dry weather screening methodology to detect presence of illicit connections (6 mos); educate City residents on storm water pollution and the use, storage, recycling, and disposal of household hazardous materials (on-going); to publicize the telephone number for public reporting of illicit connections and improper disposal into the MS4 (on-going); to cooperate with other entities in education for construction site operators (on-going); to train city personnel on identification and reporting of illicit discharges and improper disposal activities (annually); to consider water quality impacts of flood control projects (within 12 months); submit an outline of plans for practicable and economically feasible retro-fits (within 36 mos.); to store de-icing materials under cover or in a diked or contained manner; to conduct annual employee training on de-icing practices; to develop and implement pollution prevention techniques for pesticide use (within 8 mos.)

General NPDES for Storm Water Associated with Construction Activity
Starting in 1992 construction sites that are part of a larger total common plan of development or sale which will result in the disturbance of 5 or more acres are required to obtain coverage under Ohio EPA's General NPDES permit for Storm Water Discharges Associated with Construction Activity. Projects owned/operated by a public entity with a service population under 100,000 were excluded from this requirement by the 1991 Transportation Act. The main focus of the General NPDES Construction Permit is sediment and erosion controls, but it also addresses other sources of storm water pollution associated with the active phase of construction. Approximately 568 permitted sites throughout Lucas (328), Ottawa (26), Wood (179), and Fulton (35) Counties are currently (October 2001) covered by this permit. Since 1994, over 2200 inspections have been performed by Ohio EPA Staff throughout the Northwest District. Toledo's MS4 NPDES permit required the City to adopt sediment control criteria for sites that are 1- 5 acres (within 24 mos.), and cooperate with Ohio

EPA on sites of 5 acres or greater (on-going).

Lead Organization: US EPA, Ohio EPA

NPDES Phase II
1999

Description: NPDES MS4 Storm Water Permit
US EPA promulgated NPDES Phase II in December 1999. By March 2003, regulated smaller communities with service populations under 100,000 will be required to obtain NPDES permit coverage. Their permits will require such items as: development and enforcement of a program which will detect and eliminate illicit discharges; development of MS4 maps and the establishment of ordinances and of enforcement procedures; produce public education materials that describe the impacts of storm water and actions to reduce pollution and must comply with state public notice requirements regarding the adoption of plans, policies, and ordinances. In addition, their permits will require the development of a program to address sediment and erosion control for all construction sites equal to or greater than 1 acre. The program must include an ordinance or other regulatory mechanism to require sediment and erosion controls and include the following components: pre-construction review of plans, procedures to receive/consider public comment, regular inspections during construction. The program must meet minimum standards set by Ohio EPA's general NPDES construction permit.

General NPDES for Storm Water Associated with Construction Activity
By March 2003, small construction sites (between 1 and 5 acres) will be required to obtain NPDES permit coverage for their storm water discharges associated with construction activity. At that time, the exclusion provided to public entities with service populations under 100,000 will also end.

Lead Organization: US EPA, Ohio EPA

Informal Programming
Ongoing

Description: Several communities have informal programs that are complaint driven or by simple observation (dry-weather discharges).

Annual Dry Weather Field Survey
Ongoing

Description: Dry weather surveys are a part of the NPDES Storm Water permit requirements. Under Phase I the City of Toledo's MS4 permit required them to establish and/or modify dry weather screening methodology to detect presence of illicit connections within 6 months of receiving the permit. Toledo is also required to conduct annual dry weather field screening of 20% (or 30 outfalls) of their major outfalls per year. Sampling parameters include: odor, color, turbidity, floatables, estimated flow, pH, phenols, chlorine, copper, and detergents.

When Phase II is implemented in March 2003, regulated small communities will be

required to obtain NPDES permit coverage. Their permits will also require the development and enforcement of a program which will detect and eliminate illicit discharges.

Community Agent Enforcement
Ongoing

Description: Community agents enforce detected and identified illicit discharges. Enforcement actions are primarily complaint driven. In Toledo this is done by the Division of Environmental Services.

Spill Response Programs
Ongoing

Description: Municipalities and counties have spill response programs through fire departments, the EMA, or the Environmental Services Department (City of Toledo). Responses to illegal discharges are primarily complaint driven.

Wastewater Disposal Plans/Permits
Ongoing

Description: Many times wastewater may require treatment and/or disposal, depending upon the operational processes of the facility. The treatment and disposal of leachate or wastewater may require permits, monitoring, or reporting. The installation of a wastewater disposal system requires an approved Permit To Install (PTI) (see OAC 3745-31). Disposal to a sanitary sewer system may require an Indirect Discharge Permit from Ohio EPA. Similarly, discharges of wastewater to a surface water requires an NPDES permit. Discharges of wastewater into the ground may be required to obtain an underground injection well permit from Ohio EPA.

City of Toledo Ordinance 139-95
1995

Description: The City of Toledo implemented an ordinance requiring BMPs for construction sites from 1-5 acres.

Site Plan Reviews
Ongoing

Description: Counties and municipalities require site plan reviews, including reviews of storm water facilities, prior to plan approval.

Floodplain and FEMA Regulations
Ongoing

Description: Local floodplain management agencies are tasked with enforcing FEMA regulations.

Several municipalities have floodplain ordinances/regulations in place. Since 1991, the City of Toledo has required compensatory cut/fill in floodplain regulations. (COT Ordinance 883-91)

BGSU's Orphan Chemical Program
1991-Present

Description: The intent of this program is to remove unwanted, but still useful chemicals from places where they are not being used to places where they will be. The program began as solely an in-house program for BGSU, and was only connected throughout the university. The program has now expanded to include other educational institutions and many small businesses. The available chemicals are compiled in a list by BGSU and free to those facilities who can provide a use for them. The program assisted in the exchange of 4130 pounds of solids and 1665 gallons of liquid chemicals since April 1994. This has saved these institutions and businesses approximately $400,000.

To participate in the program, an orphan chemical inventory must be completed. Once a recipient is found, then the chemicals are transferred in compliance with federal and state regulations to the organization wanting the chemicals. The program has reached institutions in Ohio, Michigan, Indiana, Wisconsin, Georgia, Massachusetts, and New Jersey. Approximately 50 academic institutions have been involved in this program along with an additional 75 businesses and industries. Private individuals do not participate in this program.

Lead Organization: BGSU

Collaborator(s): NWOP2

Ottawa-Seneca-Sandusky Tire Collection Day
1993 – Present (annually)

Description: The Ottawa-Seneca-Sandusky Solid Waste District sponsors an annual tire collection day. County residents are invited to drop off up to 10 tires for 50 cents a piece. In 2000, they collected 5,162 tires in Ottawa, Seneca and Sandusky counties.

Lead Organization: Ottawa-Seneca-Sandusky Solid Waste Management District

Ottawa -Seneca-Sandusky Lead-Acid Battery Collection Program
1994 – Present (annually)

Description: The Ottawa-Seneca-Sandusky Solid Waste Management District sponsors a week-long battery collection program near Earth Day annually. County residents are invited to drop off their used lead-acid batteries at three collection sites at no charge. In 2000, they collected 3,330 batteries in Ottawa, Seneca and Sandusky counties. These batteries are given back to the manufacturers, where the materials are reused.

Lead Organization: Ottawa-Seneca-Sandusky Solid Waste Management District, Crown Battery – (Manufacturer), Vita Plate Battery (Manufacturer)

Pitch Old Paint Day/Lucas County Household Hazardous Waste Collection Days
1995-Present (annually)

Description: The Lucas County Solid Waste Management District sponsored annual household hazardous waste collection days. County residents were encouraged to drop off paint, pesticides, sealers, and other leftover products free of charge. In 1997, they collected 301,257pounds and in 1998 they collected 237,487 pounds of paint, aerosols, pesticides, and flammables.

Lead Organization: Lucas County Solid Waste Management District, Lucas County Board of County Commissioners

Collaborator(s): Keep Toledo-Lucas County Beautiful and many private sponsors

Pesticide Collection Day
1996

Description: The ODA collected any unwanted pesticides at a given location during June of 1996. The ODA required that the pesticides were registered in advance.

Lead Organization: ODA, OSU Extension, local state and federal agencies and other associations

Wood County Household Hazardous Collection
1997-Present

Description: The Wood County Solid Waste Management District refers residents to organizations and private companies that collect specific household hazardous waste items, including batteries, antifreeze, chemicals, and motor oil.

Lead Organization: Wood County Solid Waste Management District

Ottawa -Seneca-Sandusky Household Hazardous Waste Collection Days
1997 – Present (biannually)

Description: The Ottawa-Seneca-Sandusky Solid Waste Management District sponsors annual spring and fall household hazardous waste collection days. County residents are invited to drop off paint, pesticides, sealers, and other leftover products free of charge. The District began paint collection in 1997 and in 1998 it was expanded to include other materials. In 2000, they collected 50,761 pounds in Ottawa County.

Lead Organization: Ottawa-Seneca-Sandusky Solid Waste Management District

Lucas County Household Hazardous Waste Collection Program
1998 – Present

Description: The Lucas County Solid Waste Management District sponsors an ongoing household hazardous waste collection program where County residents can make appointments to drop off paint, pesticides, sealers, and other leftover products free of charge. The

contracts with private waste management companies who either properly dispose or forward to companies that can re-blend or reuse these materials. In 1999, 119 Lucas County residents dropped off materials.

Lead Organization: Lucas County Solid Waste Management District, Lucas County Board of County Commissioners

Elemental Mercury Collection & Reclamation Program
1998 - Present

Description: The Elemental Mercury Collection and Reclamation Program involves the collection of mercury from many sources, including thermometers, manometers, barometers, sphygmomanometers, mercury-containing heating thermostats, and mercury switches. Free mercury disposal is available to individuals, academic institutions, small businesses, industries, medical and dental facilities, emergency responders, and other entities. Since the program began in 1998, 2,100 pounds of mercury has been collected.

Lead Organization: BGSU

Collaborator(s): Ohio EPA, Rader Environmental Services, Toledo Environmental Services, Wood County Emergency Management Agency, Wood County Health Department, NWOP2

Ohio's Material Exchange Project
1998-Present

Description: Ohio's Material Exchange is a program available to organizations, businesses, or agencies to assist with recycling or reuse of industrial resources. Ohio EPA assists in reducing the costs of buying new materials and the cost of disposal by managing and publicizing a database of materials available and materials needed by other companies. In the first year of this program, 2,600 tons of materials were reported to be exchanged. This jumped to 40,861 tons in the second year of the program. The popularity of the program is growing annually, with 80,546 tons of products exchanged in the third year alone. This saved businesses over $3 million in disposal costs. The program reaches 12,000 organizations, businesses, and government agencies each month to offer a place in which they can exchange any left over product.

Lead Organization: Ohio EPA

Public Officials Guide to Urban Storm Water Runoff
1992

Description: This booklet was produced for local elected officials and their staff. It describes nonpoint source pollution and urban storm water runoff, highlighting the challenges faced by communities in the greater Toledo area. This booklet explains regulations, identifies public agencies involved with storm water, and introduces examples of BMPs.

Lead Organization: TMACOG (funded in part through a grant from the US EPA through the Ohio EPA)

Collaborator(s): Maumee RAP

Storm Water Workshop for Municipal Officials Throughout the Maumee AOC
November 1993

Description: This workshop was for local elected officials and their staff regarding nonpoint source pollution and urban storm water runoff, specifically describing the challenges faced by communities in the greater Toledo area. Topics included storm water regulations, introduced examples of BMPs, and discussed topics such as lawn chemicals, yard waste, household hazardous waste, and construction site runoff. This well-attended workshop also introduced the Maumee RAP to many local leaders and educated participants how they could be part of the RAP process.

Lead Organization: Maumee RAP Urban Runoff Action Group

Collaborator(s): TMACOG (funded in part through a federal nonpoint source grant, Clean Water Act Section 104(b)(3))

Ottawa River-Swan Creek Construction Site Erosion Control Demonstration Project
1993-1994

Description: Offered cost sharing to developers and landowners willing to use BMPs.

Lead Organization: TMACOG, Lucas SWCD

Collaborator(s): BGSU, Maumee RAP Urban Runoff Action Group

Erosion Control Workshop
1994

Description: Workshop held at the Quarry Pond Farm as part of the Ottawa River-Swan Creek Construction Site Erosion Control Demonstration Project. Approximately 30 people viewed sample erosion control mattings on the newly constructed Mosquito Creek diversion channel leading to the Blue Creek Wetlands. They also listened to project updates and participated in other erosion control discussions.

Lead Organization: Maumee RAP Urban Runoff Action Group, TMACOG

Storm Drain Stenciling
1995-Present

Description: This is a volunteer program to paint a “Dump No Waste, Drains to Lake” message near storm drains. This educational program was established to educate citizens that these drains usually lead directly to the nearest stream, not to a wastewater treatment plant. It is hoped that these stencils discourage citizens from illegally dumping pollutants such as used oil, paint, turpentine, pet and yard waste, and cleaning solutions down the drain and, instead, to properly dispose of their waste. As of 2000, 2,384 drains have been stenciled in eight communities using 32 volunteers groups. In 2000, the City of Toledo approved the creation of a permanent “no dumping” message

incorporated in the casting of the curb inlets.

Lead Organization: Lucas SWCD (A portion of the coordination funds are provided by the Ohio DNR-Division of Soil and Water Conservation's Nonpoint Source Pollution Education program.)

Collaborator(s): Wood SWCD, Ottawa SWCD, Maumee RAP Urban Runoff Action Group, Maumee RAP Public Outreach and Education Action Group, Ohio EPA, TMACOG, Toledo Sewer & Drainage Division, Toledo Division of Environmental Services, Public Utility Departments in the Cities of Sylvania, Maumee, Oregon, Perrysburg, Bowling Green, and Whitehouse.

Watershed-Based Storm Water Management Workshop
February 14, 1996

Description: A workshop to introduce storm water issues and regulations, especially targeting local municipalities. Discussed the need for regional approach to address storm water. There were approximately 45 attendees.

Lead Organization: Maumee RAP Urban Runoff Action Group

Pollution Prevention in Northwest Ohio Seminar
1999-2001 (annually)

Description: Annual seminar in Northwest Ohio for the general public to highlight available pollution prevention programs. Issues discussed include controlling household hazardous materials; pollution prevention assessment opportunities through Owens Community College, Ohio EPA, Rebuild Toledo, and the Lucas County-University of Toledo Waste Analyses and Minimization Program; web page; and BGSU's Orphan Chemical and Mercury Reclamation Programs. The conference was held at Owens Community College in 1999, as a part of the 24th annual Inland Spills Conference in 2000, and at the University of Toledo on May 21, 2001. Upward of 100 people attended this event annually. In 2001 the theme was the availability of industry in regards to assisting with pollution prevention.

Lead Organization: Northwest Ohio Pollution Prevention Team, OEPA, City of Toledo Division of Environmental Services, BGSU, UT, Owens Community College, Maumee RAP (Funded through a grant from the LEPF in 1999)

Inland Spills Conference
1977-Present (annually)

Description: The Inland Spills Conference is held annually by the Ohio EPA and the Spill Control Association of America. The conference rotates between four cities: Cincinnati, Toledo, Cleveland, and Columbus. The 2001 conference will be held on September 24-26, 2001 outside of Cincinnati at Kings Island Resort and Conference Center. The conference will include sections concerning toxicology and health and safety, environmental crimes, regional hazardous materials teams, industry planning, legal issues, hazardous waste, transportation, and brownfield and greenfield redevelopment. In 2000 approximately 500-550 people attended this event.

Lead Organizations: Ohio EPA, Spill Control Association of America

Education Programs

Educational Materials
Ongoing

Description: Ohio EPA, Ohio DNR, County SWCDs and TMACOG circulate educational materials promoting water quality and the need to prevent toxins from entering the drainage system.

Listed are some of the fact sheets that Ohio EPA has available in hard copy or their web site (www.epa.state.oh.us):

Storm Water Phase I Fact Sheet (September 1995)
Storm Water Pollution Prevention for the Home (May 2001)
Storm Water Pollution Prevention Plan (SWP3) Checklist for Construction Sites (May 1995)
Construction Site Inspection Checklist (2000)
Municipal Storm Water Phase II (June 2001)

In addition, Ohio EPA's Office of Pollution Prevention keeps numerous fact sheets on various topics from marinas and automotive repair to different areas of the home.

Also available is *Rainwater and Land Development: Ohio's Standards for Storm Water Management, Land Development, and Urban Stream Protection* (1996) prepared by Dan Mecklenburg, ODNR. This manual describes the design, maintenance, and operation of various BMPS to address runoff quality both during and after construction. Controls used to comply with Ohio EPA's General NPDES Construction permit must meet the standards of this manual.

Pollution Control Agencies

Comprehensive Permitting Programs
Ongoing

Description: Ohio EPA has taken the lead in management of toxins through comprehensive permitting programs. The NPDES storm water program requires permits for storm water discharges from industrial facilities and urban communities.

City of Toledo Environmental Services Industrial Inspections
Ongoing

Description: The City of Toledo Environmental Services conducts rotating industrial inspections, during which they look for good housekeeping and BMPs regarding storm water discharges.

Ohio EPA Training and Workshops
Ongoing

Description: Ohio EPA staff are available to provide public education and outreach on a variety of topics. This has been done on an 'as requested' basis. The following are an example of the type of presentations that have been conducted in the Maumee AOC:

Sept. 1994	TMACOG seminar concerning urban runoff. Presentation about construction site impacts and proper BMPs.
1995 - 1999	BGSU Construction Project Manager Class. Presentation on Phase I regulations, sediment and erosion water quality impacts, and relating management practices.
Jan. 1996	American Society of Highway Engineers. Presentation on Phase I regulations and various design considerations to improve water quality from highways.
Oct. 1998	Owen's Community College Environmental Class. Presentation on sediment and erosion water quality impacts and relating management practices.
Feb. 2001	Toledo DES. Presentation for City employees regarding Phase I and II construction regulations, sediment and erosion water quality impacts, and relating Best Management Practices (BMPs).
April 2001	Two sessions for Toledo DES. One for City inspectors/drainage workers/engineers regarding Phase I and II construction regulations, sediment and erosion water quality impacts, related BMPs. One session for contractors regarding Phase I and II construction regulations, sediment and erosion water quality impacts, related BMPs. The City reviewed its rules and enforcement procedures.
July 2001	Northwest Ohio Storm Water Conference by Advanced Drainage Systems. Regarding EPA Storm Water Phase II. ADS presented several Storm Water Design Tools and treatment structures.

Nonpoint Source Pollution Control for Urban Storm Water at Wildwood Preserve Metropark
1998-1999, 2001

Description: This BMP retrofit project included the retrofit of a common storm water outfall to restrict outflow allowing storm water to pond in the existing grass swales located in the center of the parking lots. It also included the stabilization of the ravine bank where the outfall discharges. Project benefits included slowing the flow rate to the outfall to reduce bank erosion and erosion along the ravine bottom. This allowed the storm volumes to pond in the grassy swales, providing settling time and allowing some of the storm water to infiltrate into the sandy soils and some to filter through the grass. A cleaner discharge resulted from this retrofit. The configuration of the orifice allows floatables, oils, and heavy solids to be trapped in the catch basin where they can be periodically vacuumed out. This project also reduced peak flow rates to the Ottawa River. In 2001, an educational/informational sign was posted at the site to inform park users of the function and benefit of this BMP.

Lead Organization: Toledo Area Metroparks (funded in part by a grant from ODNR NatureWorks)

Collaborator(s): Maumee RAP Urban Runoff Action Group

Bowman Park Parking Lot BMP Installation
2001

Description: This project was implemented to improve the quality of storm water runoff from the new parking lot at Bowman Park in Toledo. Storm water runoff will pass through a planting bed and sand filter before entering the storm sewer system and being discharged into a nearest waterway. This method is known as bio-filtering. It is often used in confined urban sites and has been successful in removing many of the pollutants that can collect on parking lots, such as oil, grease, and metals that are left behind by cars.

Lead Organization: City of Toledo - Division of Parks, Recreation and Forestry, Maumee RAP Urban Runoff Action Group (funded in part by a SEP from Ohio DOT)

Toledo Metropolitan Area Regional Storm Water Management Study
1997-1999

Description: This study researched the extent of the storm water problems in the Maumee AOC. The study also determined alternatives for regional management activities and funding mechanisms. It concluded with initial recommendations to form a regional storm water management district and outlined some possible ways to create this organization.

Lead Organization: TMACOG-Storm Water Utility Policy Board, Maumee RAP Urban Runoff Action Group (funded in part by a grant from the Lake Erie Protection Fund, with a local match from Lucas County and the City of Toledo)

Collaborator(s): Local jurisdictions

Needs Assessment Surveys
This was a survey of many of the jurisdictions in the Maumee AOC and was used to gather information regarding storm water problems. The infrastructures were rated from critical through excellent as were the condition of the storm sewers and the ditches. The survey documented storm water O&M functions, total operation and maintenance costs, capital improvements, revenue sources, system administration, and regulations in effect.

Evaluation of Alternatives
Alternative methods to storm water management were studied to determine possible methods of regional/watershed storm water management best for our area. Different organizational structures for storm water management were analyzed and legal opinions were obtained concerning implementation of a storm water utility.

Regional Storm Water Management Activities
Communities were surveyed in order to determine activities that were and should be addressed at a regional level. The activities were capital improvements, codes and enforcement, operation and maintenance, or planning and administration.

Fiscal Analysis
The annual revenue expected from a storm water user was calculated using a method called “equivalent residential unit” method. Using this method residential users would pay a flat rate and non-residential users would pay based upon the amount of impervious surface.

Plan of Operation for a Regional Stormwater Management District in the Maumee River Watershed
1999-2002

Description: Derived from recommendations provided by the Toledo Metropolitan Area Regional Storm Water Management Study, this program is working to build a Storm Water Management District in the Maumee AOC. The creation of this District program would provide higher storm water quality in the area by working towards the improvement of the regional storm water management.

Lead Organization: Maumee River Regional Storm Water Coalition (MRRSWC) (funded in part by a grant from the LEPF)

Collaborator(s): Maumee RAP Urban Runoff Action Group, TMACOG

Creation of the Maumee River Regional Storm Water Coalition (MRRSWC)
This voluntary organization provides a forum to discuss cooperatively addressing storm water management on a regional watershed level. The purpose of the Coalition is to develop a means to implement storm water management policies and procedures for the region.

The Coalition is the outgrowth of the Storm Water Policy Board (see *Toledo Metropolitan Area Regional Storm Water Management Study*). This group formed to implement the recommendations of the TMACOG Regional Storm Water Management Study. It is a fee-based membership organization with these following functions:

1. Development of regional storm water management guidelines
2. Development of guidelines for conducting a regional storm water master plan.
3. Development of a scope of services to be provided in a regional storm water management district.

Plan of Operation for a Regional Storm Water District
The Plan of Operation for the regional storm water management district enables local governments in the Maumee AOC to form a regional District that will collaboratively develop mechanisms to reduce flood damage, improve water quality by reducing non-point source pollution from storm water runoff into the Maumee River, its tributaries, and Lake Erie, while raising public awareness as to the link between land use and water quality. The proposed District would be the first of its kind in the State of Ohio. Because the District will be developed under existing state law, the Plan could be replicated throughout the state.

Regional Storm Water Management Standards
MRRSWC developed model standards for the voluntary adoption and implementation by individual member communities. These standards consider storm water quality management and stream channel protection in addition to flood control. Included in this manual are sections on performance criteria for construction and performance standards for runoff and detention, buffer areas, natural wetlands protection, and floodplain/floodway protection. This manual will be proposed as a model for adoption by communities.

The Management Standards were created with the following objectives:

- Develop more uniform approached to storm water management throughout

the region
- Provide consistency for developers in the permitting process
- Incorporate design standards that control both water quantity and quality
- Encourage innovative practices that meet the criteria contained in the proposed rules
- Place greater emphasis on the maintenance of facilities
- Strengthen the protection of natural features
- Promote more effective soil erosion and sedimentation control measures
- Assist member communities in meeting NPDES Phase II requirements

Phase II NPDES Compliance Strategy
On December 8, 1999 US EPA adopted regulations that will require urbanized communities to obtain NPDES Phase II storm water permits. A compliance strategy that includes the development of activities and programs to address the six "minimum control measures" in the new regulations is being developed. Storm water management standards will be developed in conjunction with the compliance strategy. These standards will conform to the Phase II NPDES permitting requirements, and will be encouraged for adoption by all the communities within the region.

Storm Water Mapping
Creation of a GIS database incorporating information gathered on how certain publicly operated regional industries affect storm water runoff in the Maumee AOC. The database will demonstrate to the public the areas in which storm water facilities need improvement. The mapping of the pollutant sources will help to determine which BMPs would help industries best address water quality and quantity issues.

Regional Storm Water Workshops (October 4 and December 6, 2000)
MRRSWC held two free workshops to discuss storm water issues and upcoming Ohio EPA NPDES Phase II regulations.

Community Presentations on Storm Water
Community involvement in the development of a draft plan of operation is occurring in the form of presentations and discussion sessions concerning the design of the plan of operation with local councils and boards. Numerous presentations have been given to involved communities including Lucas County Board of Commissioners, Wood County Board of Commissioners and the City of Toledo, to name a few. The public information and education campaign about the impacts of storm water discharges on water bodies has improved public awareness of the issue and is changing behaviors related to storm water management.

City of Toledo Storm Water Utility
October 2000-Present

Description: The City of Toledo commissioned a study in which six communities were surveyed concerning Storm Water utility rates, budgets, storm water management services, staffing, and public acceptance. The study found that the residences pay a flat rate for service, which is collected with the water/sanitary sewer bill, rather than a tax. Total budgets ran from $1.5 million to almost $24 million. The storm water management services maintained storm water infrastructure maintenance, capital improvements, design standards and regulations, water quality, and public education.

The study led to the creation of a city-wide utility to assist with storm water

management needs. The Toledo Storm Water Utility will raise approximately $9 million per year for storm water maintenance, capital improvements, environmental enforcement, and compliance with their NPDES Phase I Storm Water Permit.

Lead Organization: City of Toledo

Collaborator(s): TMACOG

Issue 5 - Increase Public Participation and Awareness

Support of Print Media
Ongoing

Description: The Maumee RAP has established positive relationships with local reporters and has received fair and accurate reporting regarding Maumee RAP issues, activities and events. In the early 1990s, The Blade ran a series of feature articles on the Ottawa River, and since then various RAP and RAP partner activities have been featured in articles.

Lead Organization: Local Reporters

Collaborator(s): Maumee RAP, TMACOG, Ohio EPA

River of Shame Documentary
1996

Description: Television station CBS Channel 11 produced a one-hour documentary to explain Ottawa River water quality issues. This documentary highlighted the dumps, uncontrolled waste sites, contaminated sediments, navigational problems at the mouth, and problems associated with an accidental formaldehyde spill. Channel 11 broadcast this documentary at 7:00 p.m. on a Saturday night, helping to educate the general public of water quality concerns.

Lead Organization: CBS Channel 11 - WTOL

Collaborator(s): Maumee RAP Dumps and Landfills Action Group, Point Place Business Association

TMACOG Mail List
Ongoing

Description: TMACOG maintains a large database of volunteers, agencies, businesses and citizens interested in the Maumee RAP. There are more than 1500 people on this list. These people have received the Maumee RAP newsletter and other pertinent mailings.

Lead Organization: TMACOG

Collaborator(s): Maumee RAP

Maumee RAP Presentations
Ongoing

Description: Various staff and volunteers of the Maumee RAP have presented program and project details to many different audiences. From the local garden club or a university environmental or public policy class, to the directors of state agencies. Maumee RAP presentations have provided in-depth details on challenges and successes to improve water quality. While a total number of presentations is not available, an average of 5-

10 presentations are given annually.

Lead Organization: Maumee RAP

Collaborator(s): Maumee RAP Public Outreach and Education Action Group, Ohio EPA, TMACOG

Maumee RAP Watershed Videos
1991-1992

Description: The Maumee RAP created five watershed videos for distribution to the community, and especially to the students involved in the Maumee Bay Watershed Project (now known as the Student Watershed Watch). The videos introduced the history and geology as well as showed the issues impacting each of the watersheds. Copies of documentaries were given to each school involved in the testing program.

Lead Organization: Maumee RAP

Collaborator(s): WTOL-TV Channel 11, TMACOG, University of Toledo, Toledo Area Metroparks, City of Toledo

Duck and Otter Creeks Stakeholders Summit
April 29, 1999

Description: The Dumps and Landfills Action Group and several other key stakeholders sponsored the Duck and Otter Creeks Stakeholder Summit inviting businesses, industries, and governmental agencies with a vested interest in Duck and Otter Creeks to participate. Following the Summit, the original stakeholders, along with the support of new partners, continued to gain momentum, support, and direction with each meeting. In October of 2000 the Duck and Otter Creeks Partnership, Inc., a 501(c)3 non-profit group, was officially established.

Lead Organization: Maumee RAP Dumps and Landfills Action Group

Collaborator(s): BP Amoco - Toledo Refinery, Pilkington, Ohio EPA, Perstorp Polyols, Philip Service Corporation, Sun Oil – Toledo Refinery, Toledo Division of Environmental Services, Toledo Division of Water Treatment, University of Toledo, US EPA

Maumee RAP Displays
Ongoing

Description: The Maumee RAP has set up displays at several events, including public meetings and seminars, county fairs, Earth day events, SWCD events, and the Toledo Zoo Conservation Carnival. The Ottawa River Action Group also purchased their own display and has set up at various events and public meetings.

Lead Organization: Maumee RAP

Maumee RAP Promotional Items
2001

Description: The Maumee RAP purchased bags, post-its, key chains, stickers and magnets with the RAP logo and contact information for distribution to volunteers to raise awareness.

Lead Organization: Maumee RAP Public Outreach and Education Action Group (funded by Ohio EPA)

Profiling the Ottawa River I-IV
1994, 1996, 1998, 2000 -Present (biennially)

Description: These evening programs are public discussions on the cleanup efforts and the current health of the Ottawa River to educate citizens on the recent and on-going activities related to the river. Traditionally 6-12 speakers present updates on their projects, including landfill capping/remediation, DaimlerChrysler Jeep Expansion Plant, Unnamed Tributary Remediation(Fraleigh Creek), combined and sanitary sewer overflow progress, etc. Booklets providing details of each presentation were made each year. Each session included more than 100 attendees, primarily interested citizens living near the river. Profiling I-IV booklets available. Profiling III & IV booklets available on the Maumee RAP web site (www.maumeerap.org)

Lead Organization: Maumee RAP Dumps and Landfills Action Group, Maumee RAP Ottawa River Action Group (funded in 1996 and 2000 through the Maumee RAP Ottawa River Action Group using enforcement fines and in 1998 by a grant from the LEPF)

Collaborator(s): Toledo Environmental Services, Ohio EPA, TMACOG

"Swan Creek: A Stream with a Future" Public Meeting
September 1997

Description: This public meeting was held at the Erie Street Market in downtown Toledo to determine the future goals and actions to restore the health of the Swan Creek watershed. Approximately 100 landowners and representatives of business, industry, and organizations attended. Issues discussed include the habitat and health of the creek, agricultural practices and problems, flooding and erosion related to urbanization, CSOs, septic systems and package plants, creek modifications and impacts, RiverWalk, bank stabilization, log jam removal, storm water and flooding, water testing, clean ups, NatureWorks projects, and Oak Openings conservation.

Lead Organization: Maumee RAP Swan Creek Action Group

Collaborator(s): TMACOG, Congresswoman Marcy Kaptur, Toledo Warehouse District, ClearWater, Inc., Owens Corning, Toledo DNR, Maumee RAP Ottawa River Action Group, Ohio EPA

Eco-Vision
1997 – 2000 (annually)

Description: An annual environmental conference, this event gives government agencies and

NGOs the chance to discuss pressing environmental issues in this region.

Lead Organization: TMACOG

Awards for Volunteers and Project Supporters
Ongoing

Description: The Maumee RAP has recognized industries, organizations and citizens for their outstanding contributions to RAP efforts at various events such as the Annual RAP Gathering and WaterFest. The Maumee RAP has presented framed Lake Erie charts, shirts, plaques, paper weights, certificates, and resolutions to recognize participation or contributions.

Lead Organization: Maumee RAP Committee

Maumee RAP Annual Gathering
2000-Present (annually)

Description: The Maumee RAP Annual Gatherings have provide the Maumee RAP Committee an opportunity to recognize the hard work and dedication of its volunteers. In 2000, the Maumee RAP hosted its first gathering at the Swan Creek Metropark. This included a walking tour of the streambank stabilization project conducted several years prior (see Swan Creek Streambank Stabilization Project) and to present Action Group Chairs with Maumee RAP shirts and a special thank you was presented to June Brown for decades of committed to improving water quality. The 2001 gathering was held at the Erie Street Market and included a pontoon boat ride on the lower reach of Swan Creek.

Lead Organization: Maumee RAP Committee

Lake Erie Protection Fund Grants
1992 – Present (annually and quarterly)

Description: The Ohio Lake Erie Commission distributes large research and implementation grants and small grants to address water quality issues throughout the Ohio Lake Erie basin. Many local university professors and students have completed research projects under this fund, along with the numerous watershed groups that have implemented public awareness workshops, trainings and planning projects.

An example project includes research to link sources of fecal contamination with the bacteria problem at Maumee Bay State Park. It has also funded the implementation of many Maumee RAP programs. Some of these projects include the Toledo Metropolitan Area Stormwater Utility Study and the Swan Creek Plan of Action. Many other projects funded by the Lake Erie Protection Fund are listed throughout this report.

Lead Organization: Ohio Lake Erie Commission

Student Watershed Watch (f.k.a. Maumee Bay Watershed Project)

1989-Present

Description: This is a junior high and high school water quality monitoring program initiated by Dr. Peter Fraleigh, a UT Biology professor. Schools adopt water quality testing sites to perform sampling and analysis of physical, chemical and biological indicators of water quality. This project is modeled after project GREEN (Global Rivers Environmental Education Network).

Tests performed in this project provide a "snapshot" of the waterways. They include dissolved oxygen, fecal coliform, pH, biochemical oxygen demand, water temperature, total phosphorous, nitrates, turbidity, total solids, and benthic invertebrate communities. Target audiences included students, their teachers, and school administrators. Students are taught the importance of environmental issues and the real life application of science. Secondary audiences were the families of participants and community leaders. This project raises public awareness and knowledge about water quality, shows the effects of land use practices, and illustrates the resources needed to achieve fishable and swimmable waters in the western Lake Erie Basin.

Following water quality testing, students and teachers are encouraged to attend the Student Summit. This is an all day event to allow the students to present their findings to the community and the media, and to attend educational workshops focusing on local environmental issues.

Throughout the years, this event has grown with over 10,000 students being involved as of 2000. Year 2000 statistics: 1,000 students involved in testing; 22 schools, 33 sites.

Lead Organization: TMACOG

Collaborator(s): Year 2000: City of Toledo, Lucas County, Perstorp Polyols, Inc., Midwest Environmental Consultants, Inc., Hull & Associates, Inc., Home Depot, ClearWater, Inc., Lourdes College, Envirosafe, Churchill's, Marco's Pizza, WNWO-TV 24, and Star 105 FM.

Student Watershed Watch Public Service Announcements (1999-2000)
Worked with WNWO TV 24 to produce a public service announcements to promote the Student Watershed Watch Program. The announcements aired at various times of the day for 3-4 weeks preceding the Student Summit.

Lead Organization: TMACOG

Collaborator(s): Lucas County, City of Toledo, WNWO TV 24

Maumee RAP Newsletters
1990-Present

Description: The Maumee RAP has created and distributed 52 newsletter issues since 1990. Approximately 1,800 copies are mailed to interested citizens, hundreds of copies of each issue are distributed at events and are given to other organizations to distribute to their membership. Since 1998, copies of the newsletter have been included in every other issue of the TMACOG *Big Picture* newsletter, significantly increasing

Maumee RAP awareness among community leaders.

Lead Organization: TMACOG, Ohio EPA, Maumee RAP Public Education and Outreach Action Group

Walk for the World/March for Parks
1993-Present (annually)

Description: This walk and gathering is a local celebration of Earth Day to increase public awareness of environmental issues. Citizens, organizations, businesses and schools participate annually to raise funds for environmental causes. For several years, 100% of the proceeds have been donated to the Maumee RAP. From 1993 –2000, the walk took place in Bowling Green. In 2001 it was held in Grand Rapids and along the Maumee River canal towpath.

Lead Organization: Nature Reserve

Collaborator(s): Year 2000: Ohio EPA, Wood County Parks, Wood County Solid Waste Management District, Wind Beneath My Wings, Northwest Ohio Pollution Prevention, TMACOG, Environmental Technologies Commercialization Center, Wood County Animal Shelter

Maumee RAP Buffet Dinner and Brainstorming Session
January 1994

Description: The Maumee RAP held a large public meeting to get more people involved in setting priorities for the RAP and in planning grassroots activities for the coming year and beyond. The event brought about 75 people together to learn more about the specific problems faced in the Maumee AOC, ask questions, and generate ideas for activities in which individuals can get involved. Awards were presented to several individuals for outstanding achievements. The event was deemed a success and resulted in generating many new action group volunteers.

Lead Organization: Maumee RAP Committee

Special Educational Equipment
Ongoing

Description: SWCDs and other educators often use interactive models and other "hands on" activities to better explain complex environmental issues. A few examples include:

<u>Stream Table</u> (1994)
A stream table was built by members of the Maumee RAP Agriculture Runoff Action Group to assist with nonpoint source runoff education. The table includes "beads" to demonstrate the formation of gullies and natural water pathways, simulating agricultural fields without protective cover (i.e. without using conservation tillage practices). This tabletop display has been taken to several events to increase the public's understanding of the benefits of incorporating BMPs to address agricultural and urban runoff.

<u>EnviroScapes</u>
Area Soil and Water Conservation Districts purchased these plastic interactive

models to demonstrate pollution sources and controls. Users can place "pollution" (usually different colors of kool-aid) on roadways, end of discharge pipes, on yards and farmfields, WWTPs, etc. Simulated rainfall demonstrates pollutant flow into waterways and lakes. Other models demonstrating wetlands, landfills, etc. have also been purchased.

Swan Creek Cleanup, Neighbors on the Creek
1994-1998 (biannually)

Description: This was a clean up at 3-7 sites on the banks and floodplains of Swan Creek each spring and fall involving many volunteers.

Lead Organization: ClearWater, Inc. (some donations provided by Ohio DNR Adopt-A-Waterway program and the Ohio Lake Erie Commission's Coastweeks Program)

Collaborator(s): Maumee RAP Open Space Action Group, NIFTI, Okun Produce, Coast Guard Reserves, Food Town, Cub Foods, Marco's Pizza, and many other agencies and companies.

Oak Openings Tour
May 30, 1995

Description: A tour for local elected officials and other decision makers to introduce them to the Oak Openings region, explain the significance of the area, discuss development pressures, and the need to manage this eco-region to provide the opportunity for balanced, diverse, and responsible development in the area. Many similar tours, activities and events have been conducted for community leaders since then to continue to raise awareness of the importance of Oak Openings habitat preservation.

Lead Organization: The Nature Conservancy, Maumee RAP Open Space and Wetlands Action Group

Maumee RAP Slogan Contest
1995

Description: Contest involving citizens throughout the Maumee AOC to help come up with a catchy slogan for the Maumee RAP. The contest was advertised in the Maumee RAP newsletter and at Earth Day events. The Maumee RAP received 36 entries and the winner received two free nights at Maumee Bay State Park.

Lead Organization: Maumee RAP Public Outreach and Education Action Group

Maumee RAP Public Service Announcements
1995

Description: The Maumee RAP created three public service announcements that were aired on local television and cable stations.

Lead Organization: Maumee RAP Committee

Collaborator(s): Dr. Lawrence Jankowski, BGSU

Community Partnership Initiative – Ottawa River Research Project
1995

Description: State Representative John Garcia, assisted by Tony Spadafora of Community Partnership Initiative, organized a videotaped forum on Ottawa River pollution issues for State Representative William Schuck, Chairman of the State House Energy and Environment Committee. Mr. Spadafora spoke with more than 80 local, state and national environmental experts and advocates about Ottawa River pollution to develop a plan to inform the public of pollution concerns to generate interest, concern and to gain the attention of government leaders. Fifty community roundtable discussions/videotape viewings were planned, though project funding was never received.

Lead Organization: Representative John Garcia, Community Partnership Initiative

Water Fest
September 9, 1995

Description: The Maumee RAP sponsored a half-day event at Promenade Park in Downtown Toledo to help raise awareness and public support. A tour, raft race, poster contest and public displays were part of the celebration. Significant media attention was received, including a live remote radio broadcast.

<u>Breakfast Tour of the Maumee River on the Sandpiper Canal Boat</u>
A one-hour cruise hosted by the Maumee RAP for its members and partners. Certificates and plaques were distributed to volunteers and sponsors to recognize their contributions to Maumee RAP efforts.

Lead Organization: Maumee RAP

<u>Clean Bay Raft Race</u>
Nine teams participated by creating and racing a non-motorized raft and attempt to float it across the Maumee River in downtown Toledo (approximately ¼-mile). Local donations were received to assist with prizes for speed and creativity.

Lead Organization: Maumee RAP

Collaborator(s): CitiFest, US Coastguard, Ohio Lake Erie Commission's Coastweeks Program, Ohio DNR Division of Watercraft,

Cargill Inc., Disalle Real Estate, General Mills, Owens Corning, Sun Oil Refinery, TRINOVA, Ken's Flower Shop, Muer's Seafood, Perstorp, Pier 75, Walmart, Pepsi Co., The Anderson's, Collingwood Water, Nature Reserve, Toledo Edison, Burger King

Maumee RAP General Brochure
1995, 2001

Description: The Maumee RAP has created two brochures describing the RAP's mission, agenda and programs. In 1995, 10,000 copies were created, and then distributed to the public at the Maumee RAP displays, public events, and in response to requests. A new brochure was completed in the March 2001 with 12,000 copies being printed.

Lead Organization: Maumee RAP Public Outreach Action Group (both were funded by Ohio EPA)

Tree Plantings and Distribution
Ongoing

Description: Many different organized tree plantings have taken place throughout the Maumee Area of Concern to assist with soil stabilization and wildlife habitat improvements. A few of these organized plantings include:

NIFTI Tree Plantings and Maumee RAP Distribution (1993-Present)
The Neighborhood Improvement Foundation of Toledo, Inc. (NIFTI) receives a grant for more than 50,000 tree seedlings a year to distribute to the general public, schools around the area, and local businesses and organizations. The companies involved either donate money to purchase additional seedlings or coordinate seedling plantings. NIFTI is expanding distribution to parochial as well as public school children to further develop the program. The Maumee RAP has helped to distribute over 6100 seedlings from 1997 to 2001 at various Earth Day events.

Lead Organization: Neighborhood Improvement Foundation of Toledo, Inc. (NIFTI)

Collaborator(s): Maumee RAP

Monclova Township Earth Day Tree Planting (April 20, 1996)
Volunteers planted nearly 400 trees behind the Monclova Township Hall along Swan Creek.

Lead Organization: Maumee RAP Open Space and Wetlands Action Group (funded in part by a grant from ODNR NatureWorks)

Collaborator(s): Monclova Township Trustees, Monclova Township Fire and Rescue, Ohio EPA, Lucas SWCD, TMACOG

GM Powertrain Tree Planting (April 25, 1996)
Employees at GM Powertrain planted trees near Silver Creek at the GM Powertrain/Local UAW Family Recreation Park following three work shifts. Approximately 25 people participated to help celebrate Earth Day and Arbor Day.

Lead Organization: Maumee RAP Open Space and Wetlands Action Group (funded in part by GM Powertrain)

Collaborator(s): Ohio EPA, Lucas SWCD, TMACOG

Understanding Environmental Risks Workshop
October 31, 1996

Description: Ohio EPA convened a panel to explain how state and federal agencies complete risk assessments. Discussion items included an overview of the remedial response program, human health risk assessment process, ecological risk assessment components, and remedial alternatives to protect human health and the environment. Approximately 100 attended this half-day workshop at the Northwest District Office of Ohio EPA, including activists, educators and government employees.

Lead Organization: Ohio EPA NWDO Division of Remedial Response, Maumee RAP Dumps and Landfills Action Group

Maumee RAP Strategic Plan
1997

Description: In mid-1996, the members of the Maumee RAP considered their progress in respect to the activities outlined in the *Maumee RAP Recommendations Report* (1991). With the tenth anniversary of the Maumee RAP public meeting approaching, it was decided that a strategic plan should be developed to establish future goals, to guide future activities, and to make it easier to define the accomplishments of the organization. A Strategic Planning Design Team created a process and identified basic issues and concerns. A kickoff was held at Walbridge Park in February 1997 where members listed their accomplishments, frustrations, action group purposes, and short and long-term goals and actions. Following this event, action groups spent several months refining and expanding these goals and actions. The end product was a 16-page document outlining the Maumee RAP's plans to assure common understanding and commitment toward the successful restoration of the Maumee AOC.

Lead Organization: Maumee RAP

Maumee RAP Slide Show
1997, 2001

Description: The Maumee RAP developed a slide presentation to be used by the Speakers' Bureau. This presentation included background information on the Maumee River, AOC, current organization, priorities, issues associated with those priorities, projects, and challenges for the future. This presentation is now being updated in material and format.

Lead Organization: Maumee RAP

H_2O Day
May 10, 1997

Description: A one day event at Ottawa Park to inform the public about their personal contribution to local water quality and to introduce organizations involved in water quality improvement efforts.

Lead Organization: Lucas SWCD

Maumee RAP Tenth Anniversary Celebration
November 13, 1997

Description: This celebration was held at the Owens Illinois Headquarters to salute the dedication, hard work and determination made by so many people involved in the Maumee RAP. Presentations were given by the Northwest District Chief of Ohio EPA, TMACOG Executive Director, Chair of the RAP, Ohio EPA's Lake Erie Program Coordinator, President of Hull & Associates, Inc., and Project Director of the Toronto Waterfront Regeneration Trust. Toronto's program was introduced to demonstrate their successes with similar projects faced by the Maumee RAP, including brownfield redevelopment, sediment remediation, trails for public access to the waters, and land use planning.

Lead Organization: Maumee RAP Committee

Collaborator(s): Owens Illinois, Park Smart, Whiteford Greenhouse, Ohio EPA, TMACOG

NPDES Site Tours
1997-1998

Description: Members of the Maumee RAP Ottawa River Action Group and other interested RAP partners toured every location on Ottawa River with an Ohio EPA NPDES discharge permit to view outfalls, determine where they were located, and to see whether discharge areas were being maintained.

Lead Organization: Maumee RAP Ottawa River Action Group

Maumee RAP Web Sites
1997-Present

Description: Maumee RAP information is available on-line. Available information includes documents and reports, meeting calendar, summary of issues the RAP is addressing, and contact information.

Sites	On-line Status
epa.gov/glnpo/aoc/maumee	December 1997
chagrin.epa.state.oh.us/programs/rap/maumee.html	August 1998
www.maumeerap.org	April 2000

Lead Organization: Ohio EPA (through the Maumee RAP Coordinator)

Collaborator(s): Maumee RAP Public Outreach and Education Action Group, TMACOG

Sign Our Streams
1997-Present

Description: Signs are placed at primary stream crossings for Swan Creek, Ottawa River, Duck Creek, Grassy Creek, and Silver Creek. Sponsored by local families, organizations and companies, these signs are intended to increase public awareness of our local streams, and to foster more protection and stream stewardship. For a fee, signs are adopted with the sponsor's name labeled on the sign. Fifty-two stream crossings are available for six-year adoption. Sign designs were chosen through an junior high and high school art contest involving the schools participating in the Student Watershed Watch.

Lead Organization: ClearWater, Inc.

Collaborator(s): Maumee RAP, City of Toledo Sign Shop

Clean Your Streams Day 1-5
1997-Present (annually)

Description: As a part of the International Coastal Cleanup and Ohio's Coastweeks program, Clean Your Streams Day has occurred annually since 1997 to clean up local waterways. A focus has been on the streambanks in the Swan Creek and Ottawa River watersheds, primarily in the City of Toledo. The number of volunteers has grown each year, with 224 volunteers picking up 4600 pounds in 2001. Volunteers include Maumee RAP members, area schools, churches, businesses, clubs, and the general public.

Lead Organization: Maumee RAP Ottawa River and Swan Creek Action Group, Ohio EPA, Ohio Lake Erie Commission, TMACOG

Collaborator(s): Year 2001: Perstorp Polyols, Inc., Toledo Division of Environmental Services, ORKA (Ottawa River Kleanup Association), Hull & Associates, Inc., Shankland's Catering, City of Toledo, NIFTI

Maumee RAP Finance Brochure
1998-1999

Description: Brochure describing Maumee RAP programs in need of financial assistance, primarily geared toward potential contributors from the private sector.

Lead Organization: Maumee RAP Finance Action Group, Maumee RAP Public Outreach and Education Action Group (funded by the Ohio EPA)

Oak Openings Native Gardens
1998-2001

Description: The Nature Conservancy assisted in the development of 3 Oak Opening Native Plant

Demonstration Gardens. These gardens were developed to show property owners in the Oak Openings Region how they can use these unique native species to landscape their own yards or parks. The gardens are located at the Kitty Todd Nature Preserve, Coop's Corner and St. James Wood Park.

Lead Organization: The Nature Conservancy

Ohio's State of the Lake Report
1994, 1998

State of the Lake Report (1994)
The Ohio Lake Erie Commission published this document as a report on the condition of Lake Erie and to inform the citizens of Ohio about the many positive programs underway to improve Ohio's greatest natural resource~Lake Erie.

Lead Organization: Ohio Lake Erie Commission

State of the Lake Report: Lake Erie Quality Index (1998)
Released in 1998, this report documents Lake Erie improvements since the late 1960s based on ten areas of analysis. The Ohio Lake Erie Commission in conjunction with members of government agencies and organizations from across the state, developed quantitative measurements to determine the quality of each of the areas, rating them from poor to excellent. The issues of concern were water quality, pollution sources, habitat, biological resources, coastal recreation, boating, fishing, beaches, tourism, and shipping. By breaking each issue into subcategories, the Commission was able to better analyze the issues and to develop concrete ways to improve them. Fishing and Tourism were rated as the strongest areas, receiving the rating of 'excellent' and pollution sources, habitat, and shipping were rated as being in the most need of improvement, receiving only a 'fair' rating.

Lead Organization: Ohio Lake Erie Commission

Collaborator(s): Ohio EPA, Ohio DNR, ODA, Ohio Department of Development, Ohio Department of Health, ODOT, Great Lakes Sport Fishing, Heidelberg College, The Strategy Team, Centerior Energy, Greater Cleveland Boating Association, Greater Cleveland Growth Association, Kent State University, Ohio State University, Case Western Reserve University, The Lake Erie Circle Tour, Toledo-Lucas County Port Authority

Lake Erie Protection and Restoration Plan
2000

Description: The purpose of this plan is to construct and enact recommendations for the improvement of Lake Erie and its watershed. The goal is to create a balance between continued development of the Lake Erie region and the preservation of its natural areas. The plan recommended strategic objectives for the 10 issues the Ohio Lake Erie Commission focused on, including:

- Water quality
- Habitat
- Coastal Recreation
- Fishing
- Tourism
- Pollution Sources
- Biological
- Boating
- Beaches
- Shipping

By improving each of these aspects of the Lake Erie watershed, it becomes more accessible to the public and preserved for the future.

Lead Organization: Ohio Lake Erie Commission

Collaborator(s): Ohio Department of Agriculture (ODA), Ohio Department of Health, Ohio DNR, Ohio Department of Development, Ohio Department of Transportation, Ohio EPA, The Ohio State University

Swan Creek Watershed Plan of Action Project
1997-2001

Description: The Swan Creek Watershed Plan of Action Project was to guide future restoration and preservation efforts on Swan Creek and its tributaries. The project included the development of a Watershed Plan of Action in addition to the establishing a bacterial monitoring program, conducting a floodplain study, and holding educational events for watershed residents.

Lead Organization: Maumee RAP Swan Creek Action Group (funded in part through a grant from the Lake Erie Protection Fund)

Swan Creek Watershed Plan of Action
The Maumee RAP's Swan Creek Action Group identified their priorities for implementing Maumee RAP Recommendations, which include agriculture runoff, wetlands and floodplain preservation, and BMPs to control urban runoff and septic system pollution. This Plan described issues facing the watershed and identified actions necessary to fully restore the beneficial uses of the Swan Creek and its tributaries.

Swan Creek Days
This series of events provided an opportunity for concerned residents, property owners, and interested citizens to learn more about Swan Creek. It provided attendees an opportunity to speak with local experts, participate in nature walks, conduct water tests on streams, or sign up for several other Swan Creek improvement projects.

1998 (May) Activities

Rural Swan Creek Days, Oak Openings Preserve Metropark - presentation

and Q&A session to discuss logjams, erosion and septic system issues; guided interpretive nature walk; water testing; and children's games.

Suburban Swan Creek Days, Swan Creek Metropark - presentation and Q&A session to exchange information on storm sewers, flooding, streambank stabilization, water quality and stream monitoring. Residents also participated in a guided nature walk and viewed the Maumee RAP's streambank stabilization project.

Urban Swan Creek Days, Oliver House/Maumee Bay Brewing Company - presentation and Q&A session to exchange information on streambank stabilization, recommended vegetation for streambank plantings, and storm water management. Residents and business owners also participated in a walk along the Swan Creek RiverWalk.

1999 (May) Activities

Rural Swan Creek Days, Oak Openings Preserve Metropark – presentation and Q&A session to discuss storm water, flooding and septic system issues; guided interpretive nature walk; water testing; and children's games.

Urban Swan Creek Days, Highland Park Shelter House - presentation and Q&A session to exchange information on storm water, floodplain/floodway stabilization concerns. Residents and business owners also participated in a guided nature walk.

2000 (March) Activities

Swan Creek Days 2000, Monclova Community Center - presentations by Nature's Nursery on wildlife preservation and rehabilitation, Swan Creek Floodplain Study, Native Plant Species and children's activities.

Swan Creek StreamKeepers Water Quality Monitoring Program (1998-2000)
This was a two-year study of possible biological contamination as a result of uncontrolled point and nonpoint discharges to Swan Creek and its tributaries in Fulton and Lucas counties. Water samples were collect and analyzed monthly from 33 stations on Swan Creek and its tributaries. The results were distributed to local Health Departments and various other interested groups. This data will prove useful for trend analyses and for follow up recommendations.

The objectives of this program were to raise awareness of regulators and the general community of current fecal levels in the watershed and to promote actions to decrease those levels. This data will assist health departments in narrowing their focus to potential problem areas.

The results found that both fecal coliform and *E. coli* colonies often exceeded Ohio EPA standards for human contact. Counts tended to be higher after significant rain events, and were very high during drought conditions in 1999. This data suggests that rain events saturate the leaching capacity in private treatment systems leading to failures and discharge, or possible "slug" effects from livestock operations. It also suggests that there are direct discharges of untreated sewage into streams. The conclusion was the need for further, comprehensive investigations by local health departments to identify sources of pollution and, with full support of the community, to affect remedial activities that will return Swan Creek to a safe condition.

Lead Organization: Maumee RAP Swan Creek Action Group, TMACOG, Medical College of Ohio. (funding for sampling year 2 was provided by a grant from ODNR under the OPUS project)

Collaborator(s): Ohio EPA, Ohio Department of Health, Textileather, Lucas County Health Department, Fulton County Health Department, Community Volunteers

New Maumee RAP Logo
1999

Description: A new logo was designed incorporating significant feedback from the many Maumee RAP volunteers.

Lead Organization: Maumee RAP Public Outreach and Education Action Group

Ohio's Partnership for Urban Streams (OPUS)
1999-2001

Description: The Ohio DNR Division of Soil and Water Conservation developed this partnership program to assist watershed groups addressing urban nonpoint source pollution problems and to help them meet their established water quality improvement goals. Ohio DNR provided financial resources and technical assistance with workshops according to the needs determined by the local watersheds groups. The Maumee RAP Swan Creek Action Group was one of the urban watershed groups selected to participate in this program.

Lead Organization: Maumee RAP Swan Creek Action Group (funded by a grant from ODNR)

Collaborator(s): ODNR, TMACOG, Lucas SWCD, Ohio EPA

Assist with Student Watershed Watch (1999)
Provided assistance in recruiting new schools in the Swan Creek watershed into the Student Watershed Watch program (see Student Watershed Watch for more detail)

Swan Creek StreamKeepers Water Quality Monitoring Program (1999-2000)
Assisted in funding this project for a second year (see Swan Creek Watershed Plan of Action for more details)

"Practices that Protect" Workshop (August 2000)
Workshop for the general public focusing on the effects of urbanization on streams and providing insight on how to protect the watershed under changing land use conditions.

"Paving Paradise: Runoff, Flooding and You" Workshop (August 1999)
Nationally known watershed planning expert Tom Schueler was the featured presenter discussing the impacts that impervious surfaces have on watershed protection. Local experts presented on storm water management in Northwest Ohio, storm water regulations, floodplain protection, and watershed protection strategies

Lead Organization: Maumee RAP Swan Creek Action Group, TMACOG, Ohio

DNR

Collaborator(s): Maumee RAP Urban Runoff Action Group, Toledo-Lucas County Plan Commissions, University of Toledo, BGSU, Wood SWCD, Lucas SWCD, Ohio EPA

Signage & Native Plantings along the Swan Creek RiverWalk
Educational signs were placed along the Swan Creek RiverWalk in Downtown Toledo. Signs highlighted native plantings and facts about the Swan Creek watershed. Plants native to the Swan Creek watershed were planted along the creek bank and walking trail. (see Swan Creek RiverWalk for more details)

Lead Organization: Maumee RAP Swan Creek Action Group, Maumee RAP Open Space & Wetlands Action Group, City of Toledo DNR

"Impact on Urban Streams through Land Use Practices" Workshop (Sept. 1999)
Workshop targeting zoning commissions, developers, commercial realtors, and politicians to increase awareness of how local land use decisions affect water quality. The goal of this event was for increased communication and coordination by local officials with the Lucas SWCD.

Lead Organization: USDA National Resources Conservation Service (NRCS)

Collaborator(s): Maumee RAP Urban Runoff Action Group, Lucas SWCD, Toledo-Lucas County Plan Commissions, TMACOG, local realtors, Home Builders Association, Storm Water Policy Board, Lucas County Engineers Office, University of Toledo, BGSU, Owens Community College

Ottawa River Interpretive Trail
1999-2000

Description: As a part of the permit requirements for the DaimlerChrysler Jeep Expansion Project, the City of Toledo agreed to construct an interpretive walkway along the Ottawa River adjacent to the City owned Hoffman Road Landfill. During the public comment period for the 401 permit, it was suggested that a local project be part of the mitigation plan. The idea for an interpretive trail along the Ottawa River was presented by the Maumee RAP, realizing it would provide a unique opportunity for both pedestrian and wheelchair traffic.

The trailhead has an asphalt parking lot suitable for up to two buses. The 1500 foot trail follows a treeline along the Ottawa River and vegetated surface of the Hoffman Road Landfill. A fence separates the trail from the other areas of the landfill. The Maumee RAP assisted with developing the text for the educational signs along the walkway which discuss wetlands, the landfill, and information about the Ottawa River watershed. The trail proceeds around a constructed wetland sedimentation basin and leads to a boardwalk where the grade near the Ottawa River steepens. There is also an overlook platform at the edge of the Ottawa River.

Lead Organization: City of Toledo

Collaborator(s): Maumee RAP Open Space and Wetlands Action Group, Maumee RAP Ottawa River

Action Group

Oak Openings Natives Natural Garden Tours
1999-2001

Description: Three 4 hour tours highlighted major areas of the Oak Openings region as preserved areas of importance. The tours went to a private natural areas where the visitors could observe traditional landscaping with native wildflowers and grasses. The tours have also included visits to 13,000-year-old sand dunes, oak savanna and wet prairies. The tours began with a slide presentation by The Nature Conservancy.

Lead Organization: The Nature Conservancy, Lucas Soil & Water Conservation District, Master Gardener Program

"Fate of a River: Revisited" Documentary and Education Program
2000-Present

Description: In 1965, the Junior League of Toledo produced a film, *Fate of a River: Apathy or Action*, depicting foaming detergents, raw sewage, green and blue industrial discharges, gasping fish, and algae-laden streams in the Maumee River Watershed. This film helped citizens throughout Northwest Ohio recognize that their actions were negatively impacting local waterways and that they could take actions to reduce or eliminate this impact to restore the health of their waterways.

In 2000, many organizations began to plan for an updated 30-minute documentary, *Fate of a River: Revisited*, to highlight the many water quality improvements over the last 35 years, and to demonstrate the need for continued actions to address new challenges. Particular attention would be paid to impacts associated with changes in land use and nonpoint sources as our population increases and shifts outside of the urban centers.

Supplemental educational materials will be modified/created for elementary, junior high, high school and adults to further explain issues introduced in the film. Film and materials will be shared with the public through news releases, radio and television promotions, prime-time broadcasts, live web chats, video distribution to schools and organizations, integration of film and lessons in conservation educators' curricula, educational fact sheet distribution, and special viewing sessions conducted by the project's Speakers' Bureau.

Lead Organizations: ClearWater, Inc., Maumee RAP Public Education and Outreach Action Group, Ottawa River Coalition (Lima), Ohio EPA, Maumee Valley Corridor Association, TMACOG, Hull & Associates, Inc., Ohio DNR Scenic Rivers, Channel 30 WGTE Public Television (funded in part by a grant from the Environmental Education Fund)

Collaborator(s): Carol Bentley and Georgia Welles (Junior League members that first produced *Fate* film), Maumee River Basin Commission, Maumee Watershed Conservancy District, Northwest Ohio Rivers Council, Northwest Ohio SWCDs, Ohio Lake Erie Commission, Premcor Lima Refinery, Sue Horvath, The Nature Conservancy, Wood County Park District

Tree and Fish Sales
Ongoing (annually)

Description: Lucas, Wood, and Ottawa counties all participate in annual tree and fish sales. They sell approximately thirteen different species of trees and shrubs, along with a native Prairie Mix (harvested from local prairies), a Wetland Habitat Packets, and a Wildlife Packets. Some of the popular fish species sold include, largemouth bass, blue gill, channel cat and yellow perch.

Lead Organizations: Lucas, Wood and Ottawa SWCDs

Toledo Area Metroparks Oak Tree Award
Ongoing (annually)

Description: The Toledo Area Metroparks has established a community award known as the "Oak Tree Award" which recognizes businesses and individuals that help to support the environment and preserve habitat. Awards are presented annually to celebrate Earth Day.

Lead Organization: Toledo Area Metroparks

Lucas, Wood and Ottawa SWCD Education Specialists' Efforts
Ongoing

Project WET (Ongoing)
This program is a curriculum and activity guide for kindergarten through twelfth grades. Its innovative, water-related activities incorporate a variety of learning formats, and are effective at developing children's understanding of their relationship to water as well as water's chemical and physical properties, aquatic wildlife, quantity and quality issues, ecosystems, and management strategies. Project WET activities promote critical thinking and problem-solving skills and help provide young people with the knowledge and experience they will need to make prudent decisions regarding water resource use. Since 1995, there have been 9 Project WET workshops, training around 112 people in Lucas County. Wood County has held about 6 workshops with 15 people at each workshop.

Lead Organization: Lucas SWCD, Wood SWCD

Project Learning Tree (Ongoing)
This program uses the forest as a "window on the world" to increase students' understanding of our complex environment; to stimulate critical and creative thinking; to develop the ability to make informed decisions on environmental issues; and to instill the confidence and commitment to take responsible action on behalf of the environment. Its 96 activities explore the diversity of the natural world, interrelationships within it, interconnectedness between the environment and social and technological systems, and the patterns of change that occur in both the natural world and in human behavior. Approximately 85 people have been trained during 7 different Learning Tree workshops in Lucas County since 1998. Wood County has held roughly 12 workshops estimating 15 people attending each.

Lead Organization: Lucas SWCD, Wood SWCD

Project Wild (Ongoing)
This program has a goal of assisting learners of any age in developing awareness, knowledge, skills, and commitment to result in informed decisions, responsible behavior and constructive actions concerning wildlife and the environment upon which all life depends. SWCDs in the Maumee AOC have been active in facilitating workshops for all three "projects" since they were first introduced. They have trained and distributed materials to formal and non-formal educators through six-hour workshops.

Lead Organization: Lucas SWCD, Wood SWCD

Issue 6 - Combined Sewer Overflows (CSOs)

City of Toledo

Combined Sewer Overflow Abatement
1976-Present

Description: The City of Toledo has spent nearly $51 million to abate the effects of CSOs on the Ottawa River. Most of this expenditure has been for the Ten Mile Creek Relief Interceptor constructed in 1982. Partial sewer separations have been completed in the Lagrange and Devilbiss areas.

Nearly $31 million has been spent in the Swan Creek watershed to construct the Swan Creek North and South storage tunnels. Sewer separations have been completed in the Woodsdale, Lockwood, and Williams areas. Design for separation has been done in the Columbus area, but it has not been constructed.

Other CSO abatement activities have taken place since the development of the *Maumee RAP Recommendations Report* (1991) include:

- Updated CSO Facilities Plan (1995)
- CSO Regulator Renovation (1995)
- Partial separation of Devilbiss Area (1997)
- Relocated tide gate on Lockwood regulator (1997)
- CSO Impact Study (1997)

Lead Organization: City of Toledo Department of Public Utilities

Point Place Flow Monitoring and Evaluation Study
1995

Description: This study divided the Point Place sanitary sewer overflows into small basins. The sewage flow from each basin was measured with flow meters and the rainfall was measured with rain gauges. The performance of the sanitary sewer in each basin was evaluated during each rainfall event. Fourteen of the 27 basins were identified with moderate to severe inflow and infiltration related to rainfall. The study recommended that the most severe sewer defects should be located with a sewer system evaluation survey and, if possible, eliminated in the 14 basins with moderate and severe rainfall related problems. In addition, the study recommended a pilot rehabilitation project to measure the effectiveness of rehabilitation in the Point Place sanitary sewer system.

Lead Organization: City of Toledo (contractor: Peterman Associates, Inc.)

Point Place Sanitary Sewer System Evaluation Survey
1997

Description: The primary function of the Sewer System Evaluation Survey (SSES) was to evaluate the structural integrity and hydraulic capacity of the Point Place sanitary sewer system, to identify sources of inflow and infiltration, and recommend corrective measures to eliminate the sanitary sewer overflows from the three permanent relief pump stations. The objective of performing a SSES for the portions of the Point Place

area (as recommended in the Point Place Flow Monitoring and Evaluation Study (January 1995)) was to convert the preliminary diagnosis into firm conclusions as to the presence, location and magnitude of the inflow and infiltration. Systematic methods were used to locate defects in the manholes and sewers, sources of infiltration and inflow, and deficiencies in the sewer system, including smoke testing, manhole inspections, internal television inspection, flow isolations, and dye testing.

Results of the survey confirmed the presence and location of several potential sources of inflow and infiltration in 16 basins, with moderate and severe infiltration and inflow related to rainfall. For each potential source located, an estimated volume of infiltration and inflow was attributed based on the condition of the source and the potential source was evaluated to determine whether the source could be reduced or eliminated. The cost of rehabilitation and removal was compared to the cost of relief or replacement sewers required for transport and treatment.

Survey results located or identified the following: broken pipe, cracked pipe, offset joint, open joint, root intrusion, blockages, and connections with storm sewers.

Recommended projects were divided into two phases. The projects recommended in Phase I will reduce some major deficiencies and significantly reduce the sanitary sewer overflows in the Point Place sanitary sewer system. Phase 1 projects include:

- Manhattan Boulevard Pump Station
- Eliminate Cross-Connections with Storm Sewers
- Clean Sewers
- Replace Deficient Sanitary Sewer

After Phase I projects were completed, the system was to be evaluated as part of project certification. After project certification, Phase II projects will be reevaluated. Phase II projects will eliminate the remaining sewage sanitary overflows by transporting the excess sewage to an equalization basin or directly to the treatment plant if capacity is available. Phase II would occur between 2002-2006. Currently recommended Phase II projects include:

- Eliminate 290th Street Sanitary Relief Pump Station
- Eliminate 145th Street Pump Station
- Rehabilitate the 129th Street Lift Station
- Construct relief sewers in Edgewater Drive
- Construct an Equalization Basin at the wastewater treatment plant

Lead Organization: City of Toledo

Combined Sewer Overflow Impact Study
1997

Description: This Impact Study recommended the following projects to further abate Toledo's CSO impacts to the Ottawa River:

- Partial separation of Lagrange Area - scheduled for completion 2000.
- Partial separation of Monroe South area (in 2002)
- Ottawa River CSO storage/treatment facility (Phase 1 - Lockwood, Ayers, and Monroe – in 2002)
- Ottawa River CSO storage/treatment facility (Phase 2 - Lagrange, Windermere and Devilbiss - in 2004)

The impact study determined that these projects would significantly improve dissolved oxygen, aesthetics, and bacteria levels in the Ottawa River. However, due to other influences such as contaminated sediment, upstream loads, and degraded habitat, water quality standards would mostly likely continue to be exceeded.

Lead Organization: City of Toledo Department of Public Utilities

Sanitary Sewer Overflow Abatement
1998-2001

Description: The City of Toledo is under Findings and Orders from Ohio EPA to eliminate three SSOs (pump stations at 129th and Edgewater, 145th and Edgewater, and 290th and Ottawa River Road). At the time of report preparation, Phase I of the recommendations in the 1997 report is completed. They include the construction of the Point Place Relief Pump Station in Detwiler Park at Manhattan Boulevard and Summit Street, sewer repairs to eliminate 32 cross-sections between storm and sanitary sewers, and cleaning and televising of all of the sewers in Point Place.

Lead Organization: City of Toledo Department of Public Utilities

Flow Characterization and Water Quality Study
2001

Description: The City of Toledo is currently completing this study in preparation of a Long Term Control Plan for EPA. This study included hydraulic modeling, stream sampling, macro-invertebrate testing, fish surveys, CSO sampling, WWTP bypass sampling, and the development of a computer model to assess the impact of CSOs on the Maumee River, the Ottawa River and Swan Creek. Early reports indicate that sediment oxygen demand may be a major factor in stream oxygen depletion. Pollutants of concern from CSOs appear to be dissolved oxygen, ammonia, fecal coliform, mercury, cyanide, lead, copper, zinc and silver.

Lead Organization: City of Toledo Department of Public Utilities

Other Areas

City of Maumee CSO Abatement
1988-1997

Description: In four phases, Maumee separated its sewers and eliminated its CSOs by 1997. As of 2001 the entire City of Maumee has separate sewers except two small areas: Old Trail Road (approximately 12 houses) and Valley Drive (approximately 6 houses).

Lead Organization: City of Maumee

City of Perrysburg CSO Abatement
1988-Present

Description: In the City of Perrysburg's long term CSO plan they divided their CSO areas into districts to better assess the areas. As of 2001, Perrysburg has eliminated the CSOs in the eastern, or older section, of town. They will be starting on the western side in 2002. A positive effect from the separations has been noted with less frequent and less intense overflows. Completion of their separation plan is expected in 2014.

Lead Organization: City of Perrysburg

Village of Swanton CSO Abatement
2001-Present

Description: Thirteen combined sewer overflows currently exist within the Village of Swanton's collection system. Their 2001 NPDES permit contains a requirement for the Village of Swanton to develop and submit a long term control plan for their combined sewer system in 2004. The Village is also be required to submit a combined sewer system operational plan to minimize impacts of CSO discharges in 2002.

Lead Organization: Village of Swanton

City of Genoa CSO Abatement
1991-2001

Description: The City of Genoa completed separation of its sanitary sewer system in 2001. This eliminated all CSOs in that community

Lead Organization: City of Genoa

Village of Luckey CSO Abatement
1991-Present

Description: Luckey has prepared a CSO Long Term Control Plan that calls for sewer separation by construction of a new sanitary sewer system. The plan is to separate all sewers in one phase at an estimated cost of $3.5 million. The sewer separation project has been submitted and in 2000 was awaiting financial assistance from USDA/Rural Development. Ohio EPA has set 2002 as a target date for completion.

Lead Organization: Village of Luckey

Issue 7 - Acquisition of Fish and Wildlife Habitats

Oak Openings Green Space Initiative
2000 - Present

Description: This is an inventory of significant Oak Openings habitat with priorities for future acquisition. This plan prioritizes preservation activities for more than 6,000 acres. It also includes areas designated for landowner participation through The Nature Conservancy's Land Registry Program (see Oak Openings Region Conservation Area Program).

Sponsor: The Nature Conservancy, Oak Openings Region Preservation Alliance, Natural Areas Stewardship, Inc., Conservation Alliance of Northwest Ohio, Black Swamp Conservancy, Metroparks of the Toledo Area, Ohio DNR (Divisions of Forestry and Natural Areas and Preserves)

Land Preservation and Land Acquisition Plan
2000 – Present

Description: The Conservation Alliance of Northwest Ohio was established in 2000 as a consortium of the many Northwest Ohio non-governmental conservation organizations dedicated to land conservation issues. One of the primary missions of this group is to create a regional preservation and land acquisition plan to support biological diversity. The group has mapped existing and permanently protected areas in Lucas, Wood and Ottawa counties. This includes land under government and private ownership, conservation easements, parks and preserves, state game areas and state forests.

Lead Organization: Conservation Alliance of Northwest Ohio through Natural Areas Stewardship, Inc.

Collaborator(s): Oak Openings Region Preservation Alliance, Maumee Valley Audubon Society, Toledo Naturalists Association, Black Swamp Bird Observatory, Black Swamp Conservancy, Sierra Club, ClearWater, Inc.

Oak Openings Region Conservation Area Program
(f.k.a. Oak Openings Land Registry Program)
1996-Present

Description: The Oak Openings area hosts many rare plant species. These rare plants may be found in sandy areas, old fields and farms, thickets, woods, and wetlands. Through this Program, private landowners, businesses, churches or schools are encouraged to plant and/or protect valuable plantings on their property which will provide additional habitat and help to link the existing preserves. Signs are then posted on the property indicating enrollment in the program. This program has contributed to the protection of the 84,000 acres in the Oak Openings region. A total of 8,800 acres are currently protected, including: 620 acres in the Kitty Todd Preserve, 4,500 acres in Metroparks, a 3,100 acre state forest, and two state nature preserves of more than 380 acres.

Lead Organization: The Nature Conservancy

Collaborator(s): Oak Openings Region Preservation Alliance; Landowners

Oak Openings Native Plant Project
1997-Present

Description: To promote the preservation of native vegetation in the Oak Openings Region, The Nature Conservancy initiated the development of this program. This project resulted in the creation of a line of genetically native prairie wildflowers and grasses, known as "Oak Openings Natives," which are grown and marketed locally in the Toledo area.

Citizens are encouraged to plant natives to help restore habitat in one of the Midwest's rarest ecosystems. Most typical landscaping plants are not part of this original ecosystem and therefore contribute little to it and sometimes actually cause damage. In addition, a native landscape is basically a self-sustaining ecosystem requiring minimal attention and helps increase the biodiversity of the area by supporting the native insects, birds, butterflies and animals that depend upon these native plants.

Lead Organization: The Nature Conservancy

Collaborator(s): Toledo Area Metroparks; Toledo Zoo; US Fish and Wildlife; Ohio DNR; Lucas SWCD; The Andersons; Bostdorff's Greenhouse Acres; Calico, Sage and Thyme; Coup's Corner; Klotz's Flower Farm; Oak Park Garden Center; Vintage Gardens

Toledo Metropark Land Acquisition
1991-2001

Description: The Metroparks of the Toledo Area operates a system of parks that are maintained in a natural state for the enjoyment of the northwest Ohio public. In 1991 the park system owned 6,304 acres which were located in 9 separate parks scattered throughout Lucas County. By the end of 2001 the park system had acquired an additional 639 acres. This includes two new parks as well as a trail system. These acquisitions include land in the Oak Openings region, wetlands and floodplains, second growth forests and trails that link parks and provide habitat corridors for wildlife. The acquisitions have been both large and small with some purchased and some donated. Select sites include:

- Fallen Timbers Battlefield Site - This is a 185 acre site which was scheduled for development before it was acquired from the City of Toledo in 2001 by the Metroparks. Although it has significant historical importance, most of this land will be maintained in a natural state. It has fields which were farmed but will not be farmed in future years and it has woodlands which will continue to be wildlife habitat instead of commercial property.

- Blue Creek Wetland Preserve - This is a 203 acre site, proposed for development, but acquired from the City of Toledo by the Metroparks in 2000. It contains a small remnant of Oak Openings habitat and a wetland restoration which will be further developed by the Metroparks. Some of the land which was farmed prior to Metroparks ownership will now be used for native plant propagation in order to distribute native plants with local genotypes.

- Siegert Lake/Side Cut Metropark expansion – This property was approximately a

200 acre addition to Side Cut Metropark. It lies within the Maumee River floodplain and includes Siegert Lake along River Rd. between I-475 and Jerome Rd. It also includes floodplain prairie and a globally significant area between the road and river on limestone pavement known as an "alvar" which is currently under study by Metroparks and Ohio DNR-Division of Natural Areas and Preserves.

- Audubon Islands State Nature Preserve – This 170-acre preserve is located between Maumee and Perrysburg within the Maumee River. The complex is part of Side Cut Metropark also.

- An additional 100+ acres have been acquired along the Maumee River at Otsego Rapids and preserves floodplain between the river and the Miami-Erie Canal. It is prime eagle and osprey habitat.

Lead Organization: Toledo Area Metroparks

Ohio Natural Heritage Database
Ongoing

Description: ODNR established and maintains a statewide inventory to locate and evaluate natural areas, ecosystems, and endangered species habitat. They conduct on-site species inventories and establish site-specific databases. This information is placed in the Ohio Natural Heritage database to provide historical occurrence information on Ohio's natural areas, ecosystems, and species.

Lead Organization: ODNR Division of Natural Areas and Preserves

Wood County Park District Land Acquisition
December 1992

Description: The Buttonwood-Berry C. Black Recreation Area is a 26-acre site along the Maumee River that is nationally recognized as a fishing "hot spot" and provides two-thirds of the annual walleye catch in the Maumee River.

Lead Organization: Wood County Park District

Collaborator(s): Land and Water Conservation Fund grant, Wood County Plan Commission funds, donation from George and Betty Black

Shallow Water Impoundments
Ongoing

Description: Private landowners establish shallow water ponds for duck and wildlife habitat. By 2000, six landowners in Ottawa County had operating impoundments working closely with NRCS and the Ohio DNR Division of Wildlife who have assisted with design and management plans.

Lead Organization: USDA NRCS, Ottawa SWCD, and Ohio DNR Division of Wildlife

Land Manager Restoration Efforts
Ongoing

Description: Many local, state and federal agencies and nonprofit organizations are actively acquiring additional properties to increase acreage preserved for wildlife habitat. In many cases, activities such as prescribed burnings, wetland restoration, vegetative plantings are implemented to improve habitat.

Lead Organizations: US Fish and Wildlife Service, Ohio DNR, city and county parks, The Nature Conservancy, Black Swamp Conservancy, Natural Areas Stewardship, and many others.

Land Preserved in the Maumee Area of Concern

Owner	Number of Acres Preserved	Acres in Land Registry/ Easements	Acres in Oak Openings
State of Ohio	**6,392**	**-**	**3,480**
US Fish & Wildlife Service	**8,901**	**-**	**-**
Toledo Area Metroparks	**7,000**	**5**	**4,500**
Wood County Park District	**342**	**-**	**-**
The Nature Conservancy	**505**	**363**	**868**
Citizens for Buckeye Basin	**54**	**-**	**-**
Black Swamp Conservancy District	**-**	**725**	**-**

Issue 8 - Contaminated Stream Sediments

Ohio EPA Recommendations
Ongoing

Description: The Ohio EPA has made multiple recommendations and has developed solutions to problems involving contaminated stream sediments. For example, the NPDES permit requires Whole Effluent Toxicity Testing for major dischargers. Others require testing for toxic organics but not Whole Effluent Toxicity Testing unless the WWTP show that the effluent toxicity is due to the industry. Also, the Ohio EPA requires a method of monitoring stream networks prior to NPDES permit renewal including discharger samples in the stream network. The results are shown in a Water Quality study. Due to the Water Quality Study, several dischargers are examined for quality to determine the quality of the overall stream system. This is also done in the TMDL process. The Ohio EPA uses the water quality criteria of the US EPA to control discharges and pollutants. Finally, the Ohio EPA enforces permits limitations and penalizes those who do not comply.

Lead Organization: Ohio EPA

Duck and Otter Creeks Sediment Quality Assessment Report
1999

Description: McLaren/Hart completed an ecological evaluation of sediment chemistry data for Duck and Otter Creeks. Ohio EPA Division of Emergency and Remedial Response and Division of Surface Water provided sediment data collected during multiple sampling events between 1992 and 1998. Analytical results were compiled for a total of 189 surface and subsurface samples from 121 sample locations. Analytical methods and the selection of chemicals for analysis differed among the various sampling programs.

Lead Organization: Sun Oil, BP-Amaco, Pilkington (contractor: ChemRisk – A Service of McLaren/Hart)

Ottawa River Hot Spot Mapping
1997

Description: Members of the Maumee RAP Ottawa River Action Group, in particular Lee Pfouts, mapped the hot spots of the Ottawa River based on Ohio EPA's preliminary screening data from the Ottawa River sampling that was conducted as part of the MAOC project. This map was published in the Toledo Blade and served as a pre-cursor to the more formal Ottawa River Hot Spot Delineation and Risk Assessment project (also described in this report). This map helped raise the public's awareness of local water and sediment quality issues and helped the Ottawa River Action Group identify potential contaminant sources.

Ottawa River Hot Spot Delineation and Risk Assessment
2000-2001

Description: This study assessed the current risks posed by Ottawa River sediments and

prioritized areas for remediation in the Ottawa River. Results of the assessment include:

- Consolidated sediment, chemical and aquatic stream data from Ohio EPA.
- Analysis of PCB data according to total PCB and congener specific toxicity and identify areas with elevated PCB concentrations.
- Analysis of risks to human health based on river uses and potential pathways.
- Analysis of risks to ecological receptors, including fish-eating birds and mammals.
- Established risk-level baseline for the lower Ottawa River.
- Recommendation for priority areas for riverbed remediation.

Lead Organization: TMACOG, Ohio EPA (funded in part by a grant from GLNPO) (contractor: Limnotech)

Collaborator(s): Maumee RAP, Ottawa River Remediation Team

Surface Water Information Management Systems (SWIMS)
1998-Present

Description: The Ohio EPA Division of Surface Water has developed a client-server based Surface Water Information Management System (SWIMS). The system is comprised of two components. The first component is the SWIMS Central System for use by Ohio EPA staff. This component provides automation of development and tracking of NPDES permits, monitoring of permit compliance, and preparation of enforcement actions. It is planned that this system will eventually incorporate DSW's ambient chemical and biological databases. The second component is SWIMware. This is a software package that allows the regulated community to electronically submit various permit applications and reports to the Ohio EPA Division of Surface Water.

Lead Organization: Ohio EPA

Ottawa River Demonstration Capping Project
September 1999 – 2000

Description: The City of Toledo began a long-term sediment capping demonstration project on the Ottawa River which involved field-scale testing of AquaBlok™, a composite material consisting of clay minerals and aggregate. AquaBlok™ was applied through the water column to physically stabilize and isolate sediments contaminated with polychlorinated biphenyls (PCBs) in a stretch of the river adjacent to Fraleigh Creek. AquaBlok ™ hydrates and forms a cohesive, low permeability, erosion resistant barrier between sediments and the overlying aquatic ecosystem.

Early field monitoring results indicate that the composite material was applied successfully and is isolating the PCB-contaminated sediments effectively. Continuing surveys conducted on the encapsulated areas following construction – and through seasonal freeze-thaw and periodic high-flow conditions – indicate that AquaBlok™ stabilized and isolated impacted sediments within this study area. During this monitoring period, significant sediment deposition on top of the AquaBlok™ cap was also observed along near-bank areas. Inspection of the encapsulated areas is periodically conducted. Macroinvertebrate colonization is also being monitored.

Lead Organization: City of Toledo (funded in part by a grant from Lake Erie Protection Fund)

Collaborator(s): Hull & Associates, Inc. (lead consultant for the City of Toledo), New Waste Concepts, Inc., engineering faculty from University of Toledo, and Kuhlman Corp.

Fraleigh Creek Remediation (f.k.a. Unnamed Tributary Remediation)
1998

Description: Fraleigh Creek (formerly known as the Unnamed Tributary to the Ottawa River) was a major source of PCB contamination to the Ottawa River and Lake Erie. It had documented cases of PCB spikes as high as 74,000 PPM, one of the highest in the State of Ohio. Through a collaborative effort in 1998 this site was remediated including the removal of 10,000 cubic yards of sediment with an estimated 56,000 pounds of PCBs, the rerouting of 5 storm sewers, and the original channel being relocated. After remediation the site was regraded and deed restrictions were put in place for residual levels of contamination.

Lead Organization: US EPA, Ohio EPA, City of Toledo, Gencorp (funded in part by a grant from the GLNPO)

Issue 9 – Dredged Disposal

Toledo Harbor Planning Group & Strategy
1994

Description: The Toledo Harbor Planning Group established a 30-year plan to address the long-term sediment management for the Toledo Harbor. This plan of action addresses:

- Elimination of open-lake dumping
- Expansion of present confined disposal facilities
- Reuse of confined sediments
- Implementation of erosion-control measures in the Maumee watershed
- Environmental restoration/shoreline protection
- Actively managing sediment dewatering in CDFs

This plan led to the creation of the Long-Term Sediment Management Strategy & Committee.

Lead Organization: Toledo-Lucas County Port Authority

Collaborator(s): ACOE, Ohio DNR, Ohio EPA, USDA NRCS, US Fish and Wildlife Service, Michigan DEQ, Maumee RAP, Hull & Associates, Inc.

Long-Term Sediment Management Strategy & Committee
1994-Present

Description: The Long Term Sediment Management Study Committee is investigating and implementing various steps to address Maumee River dredge disposal. The committee has adopted a 3-prong approach to this issue: 1) soil erosion control, 2) recycling and reuse and 3) capacity expansion. A Phase IV Report was finalized in 2001, which would maintain the existing programs and identify a preferred alternative for long-term capacity.

Dredge Material Reuse
The Toledo-Lucas County Port Authority (TLCPA), in cooperation with the ACOE, has investigated a variety of Recycling Programs to reuse material dredge from the Maumee River federal navigation channel. The Port Authority's recycling/reuse efforts have been underway since 1986 and was expanded in 1999 to allow three companies to each use 33 acres at the Port's confined disposal facility (CDF) (Facility #3) to demonstrate their recycling techniques. This one-year demonstration has been extended through June of 2001. Following the demonstration period it is hoped that successful demonstration programs can be expanded and additional material will be recycled providing additional capacity for future dredging.

In addition to the Port Authority's efforts, the ACOE has demonstrated the ability to recycle dredge material using various yard waste and compost materials. As the ACOE moves forward with its demonstration program, land will be made available by the Port Authority to accommodate this demonstration.

Capacity Expansion
The final and most pressing issue to be addressed is that of capacity expansion. This effort is broken into two separate steps: 1) enhanced management of existing capacity and 2) construction of a new or expanded CDFs. Better management will

provide the time necessary to identify and construct a new CDF.

The enhanced management effort will involve trenching and other steps at existing confined disposal facilities to enhance the dewatering. Consequently, leading to greater consolidation of material within the existing CDFs. These steps should provide between three and five additional years of capacity at the existing CDFs. (Facility #3 and Island 18)

In the meantime, further investigations will take place regarding potential vertical and horizontal expansion at Island 18 and potential new construction of a Woodtick Peninsula Barrier or some other alternative. Both programs will have to address numerous environmental concerns while providing a cost-effective location for the disposal of dredge material. According to the Phase IV Report, within two years the committee will identify the location of an expanded or new CDF. In the interim, the recycling and conservation tillage programs will continue.

Lead Organization: Toledo-Lucas County Port Authority

Collaborator(s): ACOE, Ohio DNR, Ohio EPA, USDA-NRCS, US F&WS, Michigan DEQ, Hull & Associates, Inc.

401 Certification Restrict Quantity for Open-Lake Disposal
1995 – Present

Description: The 401 Certification has restricted the volume of dredged material disposed by only allowing material dredged from Lake Mile 5 lakeward to be open lake disposed and all material upstream from Lake Mile 5 to be placed in the Confined Disposal Facility.

Lead Organization: Ohio EPA

Feasibility Study to Reuse Dredged Materials to Protect/Restore Woodtick Peninsula
1996-1998

Description: The Toledo-Lucas County Port Authority has coordinated a study to evaluate the containment of sediments from the dredging of the federal navigation channel of the Maumee River. As part of the study, innovative engineering designs were evaluated as a means to contain sediments that would be dredged from the channel. An off-shore CDF would be designated to serve as a barrier to provide shoreline protection and habitat preservation to a sensitive landform, Woodtick Peninsula.

An Environmental Impact Statement (EIS) was prepared, characterizing potential impacts to ecological site components of the conceptualized off-shore structure, including threatened and endangered species, cultural/historical resources occurring in nearby deepwater, wetland and upland environments.

Lead Organization: Toledo-Lucas County Port Authority (contractor: Hull & Associates, Inc.)

Dredging of the Mouth of Swan Creek for Owens Corning World Headquarters
Spring 1997

Description: Swan Creek was dredging at its confluence with the Maumee River (north of the

Washington Street Bridge) to improve the flow and aesthetics of the channel in the vicinity of the development of Owens Corning Fiberglas® Corporation's World Headquarters.

Lead Organization: Toledo-Lucas County Port Authority

Collaborator(s): Owens Corning

ACOE Ottawa River Dredging Evaluation Report
1976-1977

Description: The Army Corps of Engineers completed a Phase I General Design Memorandum (GDM) in November 1976. Although the GDM reported a benefit/cost ratio (BCR) of 1.57 to 1, it recommended that pre-construction planning be terminated and the project be classified as inactive because of a lack of a local cooperator for the project. As stated in the GDM "…it is apparent that no governmental body empowered to cooperate legally and financially with the Federal government would be willing to meet the local cooperation requirements." An Environmental Impact Statement (EIS) was filed in November 1977.

Lead Organization: US ACOE – Detroit District

ACOE Final Limited Reevaluation Report
1992

Description: The Ottawa River Harbor dredging study was initiated through the United States House of Representatives and completed by the ACOE in 1992. This study was conducted because area residents had long desired a dredged channel in the Ottawa River to Lake Erie. This would relieve the siltation problem and provide an added measure of safety for entering the harbor when strong southwest winds lower the water levels. During periods of low lake levels and resulting shallow river depths, passage by all but the shallowest draft small boats is prohibited. Even during periods of higher lake levels, depths required for recreational boats often restrict the classes of pleasure craft able to safely navigate the river, due to the shoals and shallow depths in the river and bay channel.

The study presented six optional activities with costs to complete. Because no local or state government agency provided a Letter of Intent to cost share this project and because there was not sufficient high priority outputs to justify federal interest, the federal government opted to choose the alternative "no action plan".

Lead Organization: ACOE – Buffalo District

Ottawa River Dredging Informational Brunch
December 2000

Description: A workshop to discuss issues associated with dredging the river for navigation and enhancement. It provided a background on the health of the river, current conditions, the economic benefit study, and the proposed dredging project and its costs. At this meeting, the City of Toledo announced that they are willing to be the local sponsor of

the navigational dredging project and budgeted $200,000 in 2001 to begin the design phase. Approximately 50 people attended this session, including Ohio and Michigan legislators and several regulatory agencies.

Lead Organization: Maumee RAP Ottawa River Action Group, Association of Ottawa River Boat Clubs, Outings Unlimited, Ottawa River Kleanup Association, Rep. Marcy Kaptur's Office

Collaborator(s): City of Toledo, Ohio EPA, Hull & Associates, Inc.

Limited Reevaluation Report Update
2001-Present

Description: This report is an update of the ACOE Final Limited Reevaluation Report from 1992. In late 2000 the City of Toledo announced their willingness to be the local sponsor for recreational/navigation dredging of the lower Ottawa River. Following that announcement the City of Toledo appropriated funds to the TLCPA and their contractor to conduct a report update. It is expected that the ACOE will accept this report in lieu of them conducting the update study.

The Limited Reevaluation Report Update will include similar information to the 1992 report including a survey of area boaters and businesses, proposed channel locations, and a benefit/cost analysis. This update report is expected in early 2002.

Lead Organization: City of Toledo, Toledo-Lucas County Port Authority (contractor: Hull & Associates)

Collaborator(s): Ottawa River Remediation Team

Sediment Distribution of the Lower Maumee and Ottawa Rivers
1998-2001

Description: Ohio DNR Geological Survey characterized and mapped sediments on the bed of the Maumee and Ottawa Rivers using sidescan sonar and GIS technologies. Existing surface sediment and core data collected by Ohio EPA was integrated with sidescan data to generate GIS layers illustrating surface sediment distribution, and areas of active erosion or deposition. This information will then be used by appropriate agencies to estimate the distribution and volume of contaminated sediments in the Maumee and Ottawa rivers and assess the potential stability (or instability) of those sediments over time.

Lead Organization: Ohio DNR Geological Survey – Lake Erie Section
(funded in part through a grant from the Lake Erie Protection Fund)

Collaborator(s): Ohio EPA Northwest District Office, Maumee RAP, TMACOG

Issue 10 - Industrial Discharges

Conrail - Emerald Yard Discharge Treatment
Since 1991

Description: Conrail installed a treatment system to remove oil from their discharge and cleaned up a small ditch that lead to the Maumee River.

Lead Organization: Conrail

Pilkington North America, Inc. Site Improvements
1991-Present

Description: East Toledo
Pilkington North America, Inc., in cooperation with the Ohio EPA, has implemented numerous projects to meet environmental objectives at its East Toledo Site located at the northeast corner of Wales Road and East Broadway. The site consists of several hundred acres of land occupied by former industrial buildings and former process waste management areas. The projects have successfully improved the quality of storm water at the site, thus ensuring that site NPDES limits are met for water entering Otter Creek. The cost of environmental projects has exceeded $3.6 million to date. Projects have included:

- Construction of new clayey soil covers over former waste management areas
- Installation of an extensive wastewater collection system incorporating underdrains, well points, horizontal wells and pump stations
- Wastewater treatment through the City of Toledo WWTP
- Extensive surface water drainage improvements
- Relocation of a branch of Otter Creek around the East Broadway site
- Wastewater treatment study
- Historical review of facility operations
- Site investigations

In addition to the site improvements, Pilkington continues to monitor the site and to identify and implement improvements, as necessary, to meet environmental objectives.

Rossford
Pilkington North America, Inc., in cooperation with the Ohio EPA, has implemented numerous projects to meet environmental objectives at its Rossford facility located along the east side of the Maumee River just south of I-75. The site consists of several hundred acres of land occupied by Pilkington's active glass manufacturing facility, a former manufacturing facility, and former process waste management areas. The projects have successfully improved storm water quality and overall environmental conditions at the site. The cost of the environmental projects has exceeded $2.06 million. Projects have included:

- Review of site geologic information
- Installation of a underdrain collection system
- Construction of new or improved clay soil covers
- Improvements in surface water drainage
- Rehabilitation of existing storm sewers
- Assessment of riverbank stability and potential riverbank improvements
- Historical review of facility operations
- Assessment of sewer/wastewater system
- Site investigation

In addition to the site improvements, Pilkington continues to monitor the site and to identify and implement improvements, as necessary, to meet environmental objectives. (See Issue 2 – Dumps, Landfills and Brownfield Sites for more information on this site.)

Lead Organization: Pilkington North America, Inc.

BP Oil Site Improvements
1973-2001

Description: Numerous projects to improve water quality have been implemented by BP Oil Co. from 1973 to 2001. The total cost of these improvements was over $50,000,000. (See Issue 2 – Dumps, Landfills and Brownfield Sites for more information on this site.)

- Storm water impoundments were developed to eliminate the bypassing of wastewater to the Maumee Bay. (1973-1982)

- To reduce the impact of storm water, the storm water sewer was expanded and the storm water impoundment basin was enlarged. (1974-1977)

- A wastewater solids belt press was installed to reduce the volume and toxicity of solids in wastewater and remove surface impoundments from service. (1988)

- An oily sewer was installed to improve the collection of process and storm water flows and to direct it to the wastewater treatment facility. (1989)

- Two 8MM gallon storm water impoundment tanks were constructed with a new delivery system to divert storm water and process water to an impoundment during heavy storm events to prevent the bypass of the WWTU (waste water treatment unit). (1993)

- A pipeline oil/water separator was installed to reduce perched water on the soil and to separate oil/water for discharge to the WWTU. (1993)

- Benzene NESHAP strippers and a dedicated benzene sewer system were installed to collect and strip benzene from wastewater prior to treatment at the WWTU. (1994)

- The activated sludge treatment efficiency was improved by the addition of

Peroxide to the system. (1998)

- New storm sewers were installed to decrease drainage to the Otter Creek area and direct water to the WWTU. The OTCW sewer was replaced and expanded to eliminate the bypassing of the OTCW system. (1999)

- A new electrical substation, more aerators of higher HP, and new stainless steel floats were added to improve the reliability and aeration efficiency of the WWTU impoundments. (2000-2001)

- The API separator box was modified and the crude oil desalter was upgraded to reduce oil and solids in wastewater. (2000)

- The oil skimmers at the API separators were upgraded for improved oil skimming efficiency. The clarifier was rebuilt and the API cell services were improved. (2001)

Lead Organization: BP Oil Company

Sun Oil Discharge Elimination
1993

Description: Sun Oil installed a pre-treatment facility and tapped into the Toledo sewer system eliminating effluent to the Otter Creek. (See Issue 2 – Dumps, Landfills and Brownfield Sites for more information on this site.)

Lead Organization: Sun Oil Company

General Mills Storm Water Discharge Management
1993

Description: General Mills removed their contaminated roof discharge from a stream and connected it to the City of Toledo sanitary sewer system.

Lead Organization: General Mills

Cargill Leachate Treatment System
May 1992

Description: Cargill installed a treatment system to treat leachate from their site which was going into the Maumee River and directed the treated effluent to the City of Toledo sanitary sewer system.

Lead Organization: Cargill

City of Toledo Pretreatment Program
1987 - Present

Description: The City of Toledo instituted their pretreatment program for their sanitary sewer

system in 1987. This program has decreased the amount of heavy metals and toxics introduced into the sewer system by 60%. This program has also allowed the treatment plant to come into compliance with its NPDES permit.

Lead Organization: City of Toledo

City of Toledo Pollution Prevention Demonstration Project
1994

Description: A two-year project developed by the Ohio EPA and the City of Toledo intended to reduce pollution by targeting industrial discharges. The project measured industrial discharges into the Bay View Wastewater Treatment Plant before and after the study. The purpose is to determine the types of pollutants reduced, the toxic materials involved in the process, the cost of the treatment, and the methods of reducing the materials involved in treatment. The City of Toledo was chosen for this project because of concerns regarding CSOs, the location in the Maumee Area of Concern, and interest shown by the city in the project.

Lead Organization: City of Toledo, Ohio EPA (funded in part by a grant form the OEEF)

Collaborator(s): US EPA, industries involved in the project

Perstorp Polyols Discharge Elimination
1996

Description: The Perstorp Formaldehyde Plant was shutdown for a catalyst change and to connect the process to the newly constructed cooling tower, ceasing their discharge to waters of the state. The plant was placed back online and began using the cooling tower eight days later, complying with the Ohio EPA Director's Findings and Orders to end discharge to waters of the state. (See Issue 2 – Dumps, Landfills and Brownfield Sites for more information on this site.)

Lead Organization: Perstorp Polyols

Issue 11 - Wastewater Treatment Plants

City of Toledo WWTP Improvements
1991-Present

Description: Containing an average capacity of 100 mgd, the Toledo Bay View WWTP treats much of the City of Toledo and all of part of six adjacent jurisdictions. The plant has treated an average daily flow of 73 mgd over the past decade, which is 11 mgd less that the previous decade. This reduction can be directly attributed to sewer system improvements and improved flow monitoring.

Combined sewers function in older parts of the city including CSOs along the Maumee, Swan Creek and the Ottawa Rivers. Improvements to the area include an interceptor along the Tenmile Creek, Swan Creek CSO tunnels, and continuing sewer projects to reduce overflows. WWTP improvements have enabled the plant o meet its NPDES Permit requirements, improve solids handling capabilities, increase wet weather capacity, and decrease residual chlorine and ammonia in the plant's effluent.

The Toledo WWTP is primarily concerned with reducing the extra water through the system but the improvement projects will take upwards of $400 million and 20 years to finance, design and build.

City of Toledo WWTP Residuals Management
1989-Present

Description: The City of Toledo currently contracts with N-Viro Soil to manage the City's WWTP residuals. N-Viro takes in 75% of the city's dewatered biosolids and has made close to 70,000 tons of N-Viro Soil in the past year (2000). 500,000 tons of product have been made since the start of the facility at N-Viro's Bayview Facility in Toledo since 1989. The facility has also teamed up with the Kurtz Bros., a firm that manages the leaf collection in the area, to provide a new soil for distribution and sale.

N-Viro provides waste management technologies, support services, bio-mineral treatment technologies, and produces biosolids. It collaborates with federal and state agencies and agriculture research organizations to study product safety and environmental contaminants.

Lead Organization: N-Viro International Corporation under contract with the City of Toledo

City of Perrysburg WWTP Improvements
1985-1992

Description: From 1985 to1992 the City of Perrysburg upgraded their WWTP to 5.4 mgd, adding three aeration tanks, two final clarifiers, new chlorine contact tank, a new anaerobic digester and a second belt filter press.

Lead Organization: City of Perrysburg

City of Oregon WWTP Improvements

1991-Present

Description: The Oregon DuPont Road wastewater plant is an 8 mgd activated sludge facility, designed to serve Oregon, Harbor View, Millbury, and the eastern half of Northwood. Its hydraulic capacity is 36 mgd. With an average flow of 5.41 mgd and peak flow of 21 mgd in 2000, the plant is expected to have the capacity for future needs. In 1996 the North Oregon and Harbor View areas tapped into the Oregon sewer system. The City of Oregon extended their sewer line along east Bay Shore Road and eliminated the South Shore Park WWTP.

Harbor View/North Oregon Sewers
1995

Description: Harbor View's sewers, installed in 1979, were tapped into the Oregon sanitary sewer system. After 15 years of searching, four funding agencies worked together to finance a complete system for north Oregon and Harbor View to get their sewers connected. This project significantly reduced bacteria loading into the waterways, as 250 residences and businesses were connected to the system. The total project cost was about $3.2 million

Lead Organization: City of Oregon

Collaborator(s): Ohio Water Development Authority, Ohio Department of Development

Maumee River WWTP Improvements
1991-Present

Description: The Maumee River WWTP is owned and operated by Lucas County. It has a capacity of 15 mgd that will need to be expanded to meet future needs. There have been major expansions since the mid 1970s including: sewer extensions, two municipal wastewater plant closings, and construction of Toledo Express Airport and McCord Road interceptors.

Village of Berkey Improvements
1991-Present

Description: New water and sewers are being planned for the Village of Berkey at a cost of $1.7 million for a 96-user system and $1.1 million for a 55-user system. Facility planning for this area has concluded that when sewers are built, they should tap into the Lucas County system. Ohio EPA is working with the village to identify options for wastewater disposal in lieu of the existing septic systems.

City of Genoa WWTP Improvements
1994-Present

Description: The plant capacity for treatment was expanded from .28 to .60 mgd. Genoa's expansion plan includes replacing the existing system with a biolac system rated at .90 mgd, however the existing lagoons could be utilized as tertiary treatment or flow equalization. Genoa and Ottawa County have jointly developed a plan for sewering

the surrounding areas, including the problem areas in Clay Township and the Village of Clay Center. Several (Woodland Estates, rest areas at the Ohio Turnpike, Genoa High School, and Guardian Industries) have been eliminated.

Village of Holland Improvements
1991-Present

Description: In 1990, new sanitary sewers were installed and tapped into the Maumee River WWTP.

Village of Swanton WWTP Improvement
1991-Present

Description: Swanton has a .92 mgd WWTP and a combined sewer system with a 2.5-MG retention lagoon with chlorination. Two storm sewer projects in the early 1990s eliminated some of the combined sewers and extra flow to the WWTP. However, the average flow rate of 257 gpd, showing a serious storm water infiltration problem that causes the WWTP to process a large quantity of extraneous water.

Updating the Areawide Water Quality Management Plan (a.k.a. "208" Plan)
1998 - Present

Description: TMACOG is designated under Section 208 of the Clean Water Act to serve as the Areawide Water Quality Management Planning Agency for Erie, Lucas, Ottawa, Sandusky, and Wood Counties & Bedford, Erie & Whiteford Townships of Monroe County. The "208" *Areawide Water Quality Management Plan* is TMACOG's main water quality policy document. It states plans of local governments to meet the requirements of the Clean Water Act. Among the issues it covers are wastewater treatment, agricultural runoff, urban runoff, and septic systems. The entire "208" plan has undergone a comprehensive update since 1998.

The largest part of the 208 Plan covers public wastewater treatment. Proper sewage treatment is a vital municipal service. It protects the environment and public health, and it makes economic development possible. The 208 Plan identifies what areas each wastewater treatment plant should plan on serving over the next 20 years. It helps local governments plan future infrastructure improvements; it prevents duplication of service, and identifies priority areas for sewer service. Ohio EPA uses Facility Planning Areas (FPA) boundaries in approval of sewers and wastewater treatment plants. All 62 Facility Planning Areas have been adopted by the TMACOG Board of Trustees, however the final approval is Certification by the Governor. The current FPA boundaries are posted on the TMACOG's website (www.tmacog.org).

TMACOG and Ohio EPA will hold a public meeting for review and input in early 2002. Maintaining the 208 Plan does not stop with Certification, therefore it is anticipate that TMACOG will be updating it annually.

Lead Organization: TMACOG

Reno Beach/Bono/Howard Farms Sewers

2001-2003

Description: The Reno Beach/Bono/Howard Farms sewer project is scheduled for construction in three phases between 2001 and 2003 at a total cost of about $11 million. These unincorporated communities in eastern Jerusalem Township consist of about 500 homes, of which about 400 will be sewered. This portion of the project will be built by Lucas County and will connect to the Oregon WWTP. The Oregon portion of this project will include gravity sanitary sewers along Seaman Road as far east as Wolf Creek, and will make sewers available on some side roads as well. This sewer line will eliminate four or five package plants and many septic systems.

Issue 12 - Package Plants

Sanitary Sewer Extensions
1991-2001

Description: Since 1991, a total of 59 package plants with a total capacity of 1,907,130 gpd have been eliminated, most to public sewers. Five new plants have been built, with a capacity of 31,800 gpd. Two existing plants have been replaced with new plants.

Package Plant Operation and Maintenance Workshop
May 22, 2001

Description: TMACOG conducted a package plant operation and maintenance workshop for operators of these small sewage facilities.

Voluntary Training for On-site Package Plant Personnel
Ongoing

Description: Enforcement to make sure package plants are running effectively has tightened. There are substantially fewer package plants, and more have NPDES permits, which require a Licensed Operator, but there is no requirement for training of on-site personnel.

Ohio EPA Package Plant Permits
Ongoing

Description: Ohio EPA regulations require all discharges to have an NPDES Permit. In the past, Ohio EPA targeted package plants with discharges over 25,000 gpd for NPDES Permits. Since the early 1990s, Ohio EPA has been putting all package plants under permit but has not yet reached every plant. Package plants with known problems have been approached first to bring the plant into compliance.

Since 1999, package plants under 25,000 gpd can be issued NPDES General Permits. These general permits require grab samples for total suspended solids, ammonia, $CBOD_5$, fecal coliform, color, odor, turbidity, dissolved oxygen and chlorine residual. The frequency of these tests depends on the plant size and no jar test is required, however it is recommended.

If a package plant is over 25,000 gpd, then a NPDES Individual Permit is issued. The NPDES Individual Permit requires that the plant be supervised by a Class I Operator who is responsible for collecting and analyzing effluent samples, and completing Monthly Operating Reports. The frequency and parameters for sampling depends on the amount of discharge.

TMACOG maintains a package plant inventory for Lucas, Wood, Ottawa, Sandusky, Erie, Seneca, Hancock, and Fulton counties in Ohio and Erie County in Michigan.

Lead Organization: Ohio EPA

Package Plant Inspections
Ongoing

Description: Inspection practices vary from county to county both at Ohio EPA and Health Departments.

Package Plant Permits to Install
Ongoing

Description: Ohio EPA traditionally does not encouraged the installation of new package plants and most counties advocate sewer extensions instead of package plants.

Issue 13 - Recreational Usage and Public Access

Cooley Canal Master Plan and Facility Improvements
1998-2000

Description: In 1998, Lucas County received a grant from the Ohio Coastal Management Program to complete a master plan for the County's Cooley Canal property in Jerusalem Township. Poggemeyer prepared the master plan after meeting with county and township residents. Some of the ideas included developing camping areas, better lighting, paving of all parking areas, a new building for Sheriff's Harbor Patrol, and docks. The plan was adopted by the commissioners and a few of the recommendations have been implemented.

Lucas County also received a grant from Ohio DNR's NatureWorks program in 1998. This grant was to be used to replace the launch ramps at the facility, along with paving the south side of the parking lot. The old ramps were very steep and many boaters lost their cars into the water because of the steep angle. New metal ramps were installed and, after some initial difficulties, the new ramps have proven to be very popular. Lucas County also resurfaced the access road to the canal.

After several years of research and planning (dating back to the early 1970s) Lucas County, Ohio DNR and ACOE teamed up to make major navigational improvements to the Cooley Canal Harbor. Dedication for this project took place in the spring of 2000. The project included dredging, new break walls and a straightening of the channel approach. The state, through a NatureWorks grant, covered a large portion of the local share.

Additionally, because the project came in under estimate, the State and County redirected a portion of their match dollars to help pay for the dredging of the Cooley Canal channel, an important project because of the low lake levels.

Lead Organization: Lucas County (funds provided by the US ACOE, Ohio DNR, Lucas County)

Rossford Maumee River Boat Access Facility Improvements
Early 1990s, ongoing

Description: The City of Rossford created approximately 25-30 new truck/trailer parking lots in the early 1990s to supplement their existing parking spaces for their boat access area. Since 1998, they have also installed steel floating docks on the north and east walls and have annually replaced new wood docks.

Lead Organization: City of Rossford

Farnsworth Metropark Boat Access Facility Improvements
1987, 1990 – Present

Description: The Toledo Area Metroparks built a new launch and floatable docks at the Maumee River access area. The Metroparks also redesigned the launch area, allowing more room for boat turnarounds and protection against the currents. The two floatable docks are handicapped accessible and serve as prime fishing areas. The Metroparks

also added rip rap and plantings upstream of the access area as part of the ACOE installation permit.

Lead Organization: Toledo Area Metroparks, Ohio DNR Division of Watercraft

Planned Marina District
2001-Present

Description: A private company (Continental Development Corporation) plans to redevelop this 120-acre, 1-mile stretch of property into a residential/commercial/entertainment center. Plans are to improve and expand an existing marina, create a marina in a large slip formerly used to deliver coal to the power plant, develop a marine transport terminal, and develop transient mooring facilities for Great Lakes travelers. This development is planned to take place in East Toledo along the Maumee River. It will be developed on the largest brownfield site in the City of Toledo.

Lead Organization: Continental Development Corporation

Collaborator(s): Toledo-Lucas County Port Authority, City of Toledo, Lucas County

Toledo 20/20: A Comprehensive Plan
2000

Description A committee of 24 members constructed this comprehensive plan as the goals for the City of Toledo's growth and development. The intent of the plan is to form recommendations for the future of the city, including the redevelopment of the city, new zoning, improvement of the funding of major public investments and the continual update of the plan through the steering committee. By determining what the city had and what the city needed, the committee, along with the Mayor and various consultants, designed 188 recommendations for the improvement of the city. Areas of concentration include those areas in which the committee was disappointed with, including public schools, a lack of youth programs, public transportation, urban sprawl, and an underutilized downtown area. The plan is designed to succeed when housing is developed in the city, employment opportunities increase, the downtown is developed, the population grows to almost 400,000 residents, Toledo has attractive streets and neighborhoods, and the Maumee River is the most popular area of recreation. Maumee River waterfront enhancements should provide more accessible greenspace areas in the city. Greenways are to be constructed along the river for the development of new footpaths or bike trails.

Lead Organization: Toledo City Plan Commission

Collaborator(s): Mayor Carleton S. Finkbeiner, The Corradino Group, McKenna and Associates, Jones and Henry Engineers, The Center for Effective Government

Boat Sanitary Sewage Disposal Laws
1980 - Present

Description: According to Ohio Revised Code 1547.33, except on the waters of Lake Erie, the

Muskingum River, or the Ohio River, no person shall launch, moor, dock, use, or operate on any of the waters in this state any vessel that contains a sink, toilet, or sanitary system that is capable of discharging urine, fecal matter, contents of a chemical commode, kitchen wastes, laundry wastes, slop sink drainage, or other household wastes into the waters in this state. Such sink, toilet, or sanitary system shall be removed or sealed or made to drain into a tank or reservoir that can be carried or pumped ashore for disposal in a sewage treatment works approved by the director of environmental protection.

When boating on Lake Erie, if a toilet is installed, it must be equipped with an operable Marine Sanitation Device (MSD) that is built and certified to meet Coast Guard standards. An MSD is a special kind of toilet for boats. Toilets that discharge raw sewage from a vessel are illegal in state as well as federal waters. Type III MSDs are certified to a no-discharge standard. This is the only type that is allowed on Ohio's waters. Holding tanks are probably the most common kind of Type III MSD found on recreational boats. Sewage is stored in the holding tank until it can be pumped out to a reception facility on shore. Reception facilities (sometimes called pump out stations) are required by Coast Guard regulations. Their availability at marinas or other locations is largely a function of local boater demand. Most cruising guides and boating almanacs list the availability of pump out stations. (OSU Sea Grants' 1999 inventory shows nine pumpout facilities in the Western Lake Erie Basin and six on our AOC: Harrison Marina, Pier 75, Rossford Marina, Anchor Point, Meinke Marina West, and Fleitz Marina.) ODNR has a Clean Vessel Act grant program to assist with pumpout facility planning and construction costs.

Lead Organization: US Coast Guard

Western Lake Erie Recreation Area Mapping
1997-Present

Description: This map/brochure was distributed throughout the Western Lake Erie basin identifying public access areas, marinas, attractions, and hotels/lodging as well as lists for fishing charters and events. This brochure is currently being updated.

Lead Organization: OSU Sea Grant (1997-1999 funded by marinas, convention & visitors bureaus, and other donations. 2001 update funded through Lake Erie Protection Fund grant.)

Swan Creek RiverWalk
1998-2001

Description: The City of Toledo is establishing walking paths along both banks of the Creek from Summit Street in front of the Owens Corning Headquarters to the Erie Street Market. A variety of plant materials were placed at both sites to help prevent bank erosion and to beautify the area.

Lead Organization: City of Toledo Parks, Recreation and Forestry

Collaborator(s): Maumee RAP Swan Creek Action Group, Ohio DNR (See OPUS project for more information on Maumee RAP contribution)

Swan Creek Tour Boat Landing
1998 - Present

Description: In 1998-1999, a boat landing at the Erie Street Market in downtown Toledo along the Swan Creek RiverWalk was constructed. This boat landing is used by the public for access to the Creek for canoeing or other activities. This project also involved the purchase of a pontoon boat by the City to conduct educational tours on the Creek.

Lead Organization: City of Toledo DNR (funded in part through a grant from the Ohio DNR Coastal Management Program)

Collaborator(s): Ohio DNR – Coastal Management Program

Valuing the Ottawa River: The Economic Values and Impacts of Recreational Boating
1999

Description: This study was completed to provide the basis to build the necessary local financial support to make dredging of the Ottawa River possible. The study provides input for justification and financial support for both navigational dredging and contaminated sediment dredging. Previous ACOE studies in 1976 and 1992 found that sufficient benefit/cost ratios existed to justify navigational dredging of the Ottawa River and channel to Lake Erie, but each project lacked a local financial sponsor to provide the cost share, causing the Corp's deferment to dredge. Study findings included the estimated economic impact of Ottawa River boaters, direct impact of dredging to local business, and the mean economic benefit to boaters and businesses if the river were dredged. A few of the study findings include:

- Boater activity contributed to over $14 million in total annual sales;
- Of $14 million, $8 million was considered "value added" income to labor, management and property; and
- Nearly $5 million of additional sales would be realized if a channel were dredged to provide safe access to the river's businesses.

Lead Organization: Ohio Sea Grant Extension, The Ohio State University, Maumee RAP Ottawa River Action Group (funded in part by a grant from the LEPF)

Collaborator(s): West Marine, Associated Yacht Clubs, Point Place Business Association,

Issue 14 - Atmospheric Deposition

Ohio EPA Office of Pollution Prevention (OPP)
1989-Present

Description: This branch of the Ohio EPA was created in 1989 to establish a method of preventing pollution rather than controlling it. The office works to increase methods of source reduction, recycling, treatment, and disposal of pollution. This office includes many programs in which they reduce the amount of pollutants released into the environment and therefore reducing the amount of pollution which is deposited by the atmosphere. The OPP works to control the amount of air emissions and creates programs to reduce atmospheric pollution.

Lead Organization: Ohio EPA

Ohio Revised Code Sections 3751.01-3751.03
1988, 1996-Present

Description: The State of Ohio enacted Ohio Revised Code Sections 3751.01-3751.03 regarding Toxic Chemical Release reporting.

Lead Organization: Ohio EPA

Toxic Release Inventory (TRI)
Ongoing

Description: The Toxic Release Inventory is a database that keeps track of any toxic releases into the environment. It began as a portion of the Emergency Planning and Community Right to Know Act of 1986 and is operated solely out of US EPA headquarters. The companies report releases of toxic chemicals into the air, water, and land with the intent to quantify toxic chemical pollution. The database is available to the public, but it is not recommended to depend only upon the TRI database because each industry or company conducts their own analysis and then provides reports and estimates to the US EPA.

Lead Organization: US EPA

US EPA Programs
Ongoing

Deposition of Air Pollutants to the Great Waters: Third Report to Congress (2000)
This US EPA report summarizes the programs enacted to reduce atmospheric deposition and the current knowledge regarding this environmental problem. Trends in emission and deposition in the area were tracked and the future of air pollutants to the Great Lakes was predicted based upon the past trends. The report summarizes the environmental progress, major programs and activities, and the advancements in science since the previous report and since the establishment of some of the programs.

Great Lakes Program (GLP)
Founded by the Great Lakes National Program Office (GLNPO) of the US EPA, the Great Lakes Program is made up of all the programs working to benefit the Great Lakes region. The Great Lakes Program consists of activities such as RAPs and Lakewide Area Management Plans. Along with these activities, the GLP helps to reduce toxic emissions through the Episodic Events/Great Lakes Experiment Study to work for the Lake Michigan Mass Balance Study with research on the air/water exchange of PCBs and PAHs.

The Great Lakes Binational Toxics Strategy (2000-2006)
This program is a collaborative effort between the United States and Canada to reduce or eliminate the toxic substances harmful to the Great Lakes region. The US EPA and Environment Canada (EC), along with other Governmental Departments, the Great Lakes states, the Province of Ontario, Tribes, and First Nations are working together to ensure the health and future of the Great Lakes system. The goal of the strategy is to involve all aspects of society, not just government, to create a healthy environment. This strategy formed due in part to the Great Lakes Water Quality Agreement, an agreement between the US and Canada based upon recommendations by the IJC. The two countries combined to form recommendations and goals to clean up Lake Erie from unwanted toxins. The release of the toxics are measured and used to determine the effectiveness of a number of programs. The goal is to reduce both mercury use and release by 50% by the year 2006 and to reduce dioxins, furons, and PCBs even further. The current programs were compared with newer ideas to keep up to date the programming already in place. Programs such as the *Voluntary Mercury Agreement with Northwest Indiana Steel Mills* and the *Michigan Mercury Pollution Prevention Task Force* have been implemented to help reduce already present toxins and the addition of new toxins into the Great Lakes environment.

Integrated Atmospheric Deposition Network (IADN)
2001-2003

Description: The integrated atmospheric deposition network is a monitoring network in both the United States and Canada, used to assess atmospheric deposition on pollutants in the Great Lakes area. The network consists of three master stations and two satellite stations along the Great Lakes in Michigan, New York, Illinois, and Wisconsin. The stations track the presence of trace organics, trace metals, emerging contaminants, dioxins/furans, and mercury. The tentative collection dates run from November 1, 2001 until October 31, 2003.

Lead Organization: US EPA-GLNPO

Regional Air Pollutant Inventory Development System (RAPIDS)
Ongoing

Description: In order to determine the state of air quality in Ohio, the Ohio EPA Division of Air Pollution Control created an inventory as part of the regulatory program of air quality in Ohio. This emission inventory is a compilation of data describing emissions from different sources of air pollution such as a utility, refinery, automobile, or trains. With the information, the Ohio EPA creates a system named Regional Air Pollutant Inventory Development System (RAPIDS), the state's emission inventory system

which both stores the facility criteria pollutant inventory and utilizes its unique function to generate facility toxic inventory files.

Lead Organization: Ohio EPA Division of Air Pollution Control

Issue 15 - Home Sewage Disposal

Tracing Diffuse Sources of Fecal Contamination through Phenotypic and Genotypic Characterization of E. Coli Isolates
1997-1999

Description: This study was conducted in the ditches and streams of the eastern portion of the Maumee AOC. This "fingerprinting" project was to link the sources of bacteria to the high bacterial contamination problems being found at Maumee Bay State Park beaches.

Lead Organization: University of Toledo (funded in part by a grant from the LEPF)

Collaborator(s): Maumee Bay Bacteria Task Force

Western Lake Erie Coastal Sanitary Survey
1998-1999

Description: The Jerusalem Township, Curtice and Williston areas received a grant that:

- Identified nearly 100 failed septic systems, about half of which were replace or repaired. Follow-up was planned for 30 others.
- Documented a public health nuisance in the Curtice area.
- Produced and distributed educational materials customized to Northwest Ohio soil types and regulations specifically to those who own septic systems.
- Designed and built three desktop working models of septic systems to demonstrate to residents how their septic system works.

The study concluded that sewers would be needed at least for Curtice. The goal is to have Curtice tapped into a sewer system by 2008.

Lead Organization: TMACOG (funded in part by a grant from Ohio Coastal Management Program)

Collaborators: Lucas and Ottawa County Health Departments, Lucas SWCD

"Protect Our Beaches" Initiative
2001

Description: This initiative was formed to reduce the bacteria around Lake Erie and to provide a safe place for people to swim this summer. Many activities are part of this effort, including a study of the origin of the bacteria, a promise by the Ohio DNR to halt lake dredging, protection of the shore from gull fecal matter to reduce bacteria, improvement of the City of Toledo's storm system, and the installment of new sanitary sewers around the region.

Lead Organization: City of Toledo

Collaborator(s): Toledo Mayor Carleton S. Finkbeiner, Oregon Mayor James Haley, Director of the UT Lake Erie Center Stephen Goldman, Toledo-Lucas County Health Commissioner Dr. David Grossman, Ohio DNR, area counties

Issue 16 - Water Treatment Plant Sludge

Ohio EPA Recommendations Land Apply Spent Lime
Ongoing

Description: Ohio EPA recommends the preferred reuse alternative of land application of spent lime.

City of Toledo Spent Lime Reuse
Ongoing

Description: Municipalities traditionally pay to dispose of the spent lime produced through the water treatment process. Instead, the City of Toledo contracts out with a company to excavate, transport and to find beneficial reuses for the spent lime. Approximately 30,000 cubic yards of spent lime is excavated out of the City 's lagoons annually, approximately 40,000 wet tons of lime are transported from the water treatment plant annually. There are several ongoing reuse programs, the following summaries describe these programs:

Cement Processing
The City of Toledo sends approximately 10-20% of their spent lime sludge to a Dundee, Michigan cement manufacturer, Holnam Inc. Holnam Inc. mixes the lime into their Portland cement mixture rather than using virgin lime material from stone quarries.

Lead Organization: S&L Fertilizer, contracted with the City of Toledo to find a beneficial reuse for the product

Collaborator(s): City of Toledo, Holnam, Inc. (contractor), Ohio EPA, TLCPA

Landfill Liner Barrier
The City of Toledo sends approximately 10-20% of their spent lime sludge to BFI's Vienna Junction Construction and Demolition Debris landfill for use in the landfill's cell liner barrier.

Lead Organization: S&L Fertilizer, contracted with the City of Toledo to find a beneficial reuse for the product

Collaborator(s): City of Toledo, BFI-Vienna Junction

Land Application
The City of Toledo sends approximately 10-15% of their spent lime sludge to local agricultural fields where it is directly applied to the land to enrich the soil.

Lead Organization: S&L Fertilizer, contracted with the City of Toledo to find a beneficial reuse for the product

Collaborator(s): City of Toledo, Ohio EPA, TLCPA

Production of "Tolcal"
The City of Toledo sends approximately 30-40% of their spent lime sludge to a local

fertilizer manufacturer, S & L Fertilizer, who processes and markets "Tolcal." This material is sent to fertilizer applicators who apply Tolcal on farm fields to enrich the soil.

Lead Organization: S&L Fertilizer, contracted with the City of Toledo to find a beneficial reuse for the product

Collaborator(s): City of Toledo, Ohio EPA, TLCPA

Production of "Nu-Soil"

The City of Toledo sends approximately 2% of their spent lime sludge and 10% of their wastewater treatment plant biosolids to a local fertilizer manufacturer, S & L Fertilizer. S&L Fertilizer processes this material with Maumee River shipping channel dredgings, creating "Nu-Soil." This material is applied on farm fields. S&L entered into an agreement in 1996 with the TLCPA to start this recycling program at the Port's general cargo facility. S&L now utilizes approximately 50 acres at the Port's confined disposal facility to create this product.

Lead Organization: S&L Fertilizer, contracted with the City of Toledo to find a beneficial reuse for the product

Collaborator(s): City of Toledo, Ohio EPA, TLCPA, Army Corps of Engineers

Issue 17 - Control of Introduced Species

Nonindigenous Aquatic Nuisance Prevention and Control Act
National Invasive Species Act
November 29, 1990 (passed), and subsequently amended by the National Invasive Species Act of 1996.

Description: The purposes of the Nonindigenous Aquatic Nuisance Prevention and Control Act are:

1. To prevent unintentional introduction and dispersal of nonindigenous species into waters of the United States through ballast water management and other requirements;

2. To coordinate federally conducted, funded or authorized research, prevention control, information dissemination and other activities regarding the zebra mussel and other aquatic nuisance species;

3. To develop and carry out environmentally sound control methods to prevent, monitor and control unintentional introductions of nonindigenous species from pathways other than ballast water exchange;

4. To understand and minimize economic and ecological impacts of nonindigenous aquatic nuisance species that become established, including the zebra mussel; and

5. To establish a program of research and technology development and assistance to States in the management and removal of zebra mussels.

Ballast Water Exchange Program
1990s-Present

Description: In the early 1990s, legislation was enacted calling for a voluntary ballast water exchange program for vessels entering the Great Lakes. This program was amended in 1996 when a mandatory Ballast Water Exchange Program was implemented for all vessels entering the Great Lakes. The US Coast Guard in coordination with the St. Lawrence Seaway Development Corporation has been responsible for monitoring compliance with these requirements.

The mandatory ballast exchange calls for all vessels carrying ballast water to exchange their ballast at least 200 miles off shore. Failure to comply may require vessels to return to sea to exchange ballast or to treat the ballast water in such a manner to achieve the salinity level required to kill organisms within ballast tanks.

While compliance has been good, new concern has been raised regarding vessels entering the systems not carrying ballast water. The concern involves the sediment and remaining water left in ballast tanks and the organisms which may be contained in that sediment. The US Coast Guard is currently investigating the potential threat posed by the remaining sediment and if a threat in fact exists.

The state and provincial legislators have become increasingly concerned about aquatic nuisance species and have introduced legislation at the state and provincial

level. The council of Great Lake Governors opposes a state by state or province by province approach to this bi-national and even international issue. It is likely that the re-authorization of the aquatic nuisance species will provide greater federal guidance regarding this issue.

Lead Organization: Toledo-Lucas County Port Authority has been participating/tracking this issue locally.

Issue 18 - Leaking Underground Storage Tanks

State Fire Marshall UST Sensitive Area Designation

Description: Per Section 3737.88 of the Ohio Revised Code, the State Fire Marshal has designated areas of the state as being sensitive for the protection of human health and the environment. The Maumee Area of Concern is not listed as a sensitive area, but the following areas within our AOC would be considered sensitive:

- Areas located within 50 horizontal feet of a private water supply well or developed spring not located on the same site as the UST system.
- The area located within one of the following and is not located on the same site as a UST system:
  - 100 horizontal feet of a water supply well designated by the Ohio EPA to be a public water supply and which has a net production rate of less than or equal to 10,000 gallons/day.
  - 200 horizontal feet of a water supply designated by the Ohio EPA to be a public water supply and which has a net production rate of greater than 10,000 gallons/day to less than 50,000 gallons/day.
  - 300 horizontal feet of a water supply designated by the Ohio EPA to be a public water supply and which has a net production rate of greater than 50,000 gallons/day.
- The area is located within a half-circle shaped area 1,000 feet upstream of a public water supply surface water intake where the base line of the half circle is perpendicular to the stream at the intake and has a diameter of 2,000 feet, and where the midpoint of the base line is the intake, and where the radius of the half-circle is 1,000 feet, unless the owner or operator demonstrates to the bureau chief that the UST system is located or will be located in a surface water drainage area that is actually downstream of the intake.
- The area is located within 200 horizontal feet of a lake or reservoir (lake must be at least 5 acres).
- The area is located within 100 horizontal feet of a man-made underground structure, tunnel or cavity used primarily for pedestrian or vehicle traffic.

Bureau of Underground Storage Tank Registration Upgrading
1998

Description: New regulations were issued by the Bureau of Underground Storage Tank Registration (BUSTR) in order to work toward better corrosion protection, spill prevention, and overfill prevention.

Spill Protection Equipment
The owner is responsible for protection against potential spills involving the equipment

Overfill Prevention Equipment
The tank must meet certain requirements in order to be certified and used, including either shutting off flow at 95% full or alerting an operator of a potential overfill.

Piping Corrosion Upgrade
Although fiberglass-reinforced pipes need not have corrosion protection, metal piping must meet corrosion protection guidelines.

Tank Corrosion Upgrade
The protection for corrosion in an underground storage tank must include some form of lining to prevent the body of the tank itself from corroding and cathodic protection.

Tanks need to be registered within 30 days of service, although certain types of tanks are exempt from registration. Any tank with at minimum 10% of its volume below ground is considered an underground storage tank. Tanks require an annual fee to be inspected and registered. Permits are granted upon on-site inspection and are done by either BUSTR or a state certified underground storage tank inspector (CUSTI).

Lead Organization: Bureau of Underground Storage Tank Registration (BUSTR)

City of Toledo UST Registration
2001-Present

Description: The City of Toledo now requires all underground storage tanks to be registered with the City, along with the state and federal guidelines. This program began to take action against orphan tanks around the area. The ordinance defines an orphan tank as one which has to be out of use for at least six months. Registration fees will be used to fund remediation of these orphan sites. Registration must have taken place before January 1, 2001 and January 1 of each subsequent year by the owner or operator. A fee of $100 each year is required for registered tanks due to the cost of inspection and monitoring. A Red Tagged UST is one that does not comply with December 22, 1998 guidelines. The Red Tagged UST should be removed or upgraded immediately. To date, 100 of the 150 recorded stations have registered and paid their fee. The City of Toledo has modeled this program after the successful City of Chicago program.

Lead Organization: City of Toledo Division of Environmental Services

Issue 19 - Mosquito Control

Toledo Area Sanitary District (TASD) Representation at Conferences/Meetings
Ongoing

Description: TASD has a policy to have a representative attend any conferences or meetings concerning mosquito control-related topics.

Lead Organization: Toledo Area Sanitary District

TASD Maintenance Communication
Ongoing

Description: TASD contacts the Army Corps of Engineers and/or the Soil and Water Conservation Districts prior to any maintenance of existing drainage ditches. They also work closely with the Lucas County Drainage Engineer to determine maintenance sites. TASD does not create any new ditches and they do not remove soil from the site during maintenance.

Lead Organization: Toledo Area Sanitary District

TASD Focus on Larvicide Program
Ongoing

Description: TASD has always attempted to emphasize larviciding versus adulticiding, because it is a more efficient method of mosquito control and it is more cost-effective. They do, however, continue to use adulticiding techniques to respond to the public's complaints. (Also, no matter how effective the results of larviciding, adult mosquitoes still travel from adjacent counties that do not have mosquito control.)

Annual Use of Insecticides for Adulticiding	
Year	**Gallons**
1993	1402
1994	1942
1995	2302
1996	3048
1997	2868
1998	2773
1999	1173
2000	3595

Lead Organization: Toledo Area Sanitary District

Discontinued Use of Malathion
1995

Description: TASD attempts to use the most environmentally friendly products in mosquito control and has not used Malathion since 1995. They would not consider using it again

except in an emergency situation such as an outbreak of encephalitis.

Lead Organization: Toledo Area Sanitary District

TASD Advisory Board & Annual Report
Ongoing

Description: TASD considers its Advisory Board to be diverse, however, they are open to new members who can bring expertise and energy to TASD. They send their annual report to more than 100 individuals and organizations throughout the county.

Lead Organization: Toledo Area Sanitary District

TASD Breeding Grounds Data
Ongoing

Description: TASD has developed topographical maps and continues to maintain them. These maps were originally developed from aerial photos. Due to new residential developments and construction however, the location of mosquito breeding sites can be a moving target. TASD feels that they have a very good idea of the major breeding sites in the county.

Lead Organization: Toledo Area Sanitary District

Issue 20 - Comprehensive Fisheries Management Plan

Ohio EPA Programs to Eliminate/Reduce Toxicants
Ongoing

Description: Ohio EPA issues NPDES permits to all dischargers to waters of the state. If parameters continue to be found in elevated levels in a discharge, that parameter will continue to be included in the permit with monitoring requirements. Some parameters have effluent limits established. In some cases, the water quality standards may not allow a parameter to be discharged at all.

Lead Organization: Ohio EPA Division of Surface Water

Municipal Waste Treatment of Nutrients and Toxicants for Control or Elimination
Ongoing

Description: Ohio EPA's NPDES permits issued to municipalities contain stringent limits for phosphorus, nitrates, ammonia, and metals.

Lead Organization: Ohio EPA Division of Surface Water

ODNR Dam Review
Ongoing

Description: ODNR monitors existing dam structures to ensure they are maintain and a safe structures. The Maumee River dams in Defiance and Napoleon will remain in place.

Lead Organization: Ohio DNR Division of Water – Dam Safety

Dam Removal at Camp Miakonda
2000-Present

Description: The US F&WS and the Erie Shores Council of the Boy Scouts of America have a project underway for the removal of the low head dam on the Ottawa River. It is approximately ¼ mile upstream of the Sylvania Ave. bridge in Sylvania Township. The dam borders Lake Sawyer at Camp Miakonda. The removal of the dam will restore this stretch of the river to a more natural setting and allow for fish movement in the river. Removal of the dam will also facilitate the Boy Scout's efforts to improve the condition of Lake Sawyer and develop/restore area wetlands.

Lead Organization: Erie Shores Council of the Boy Scouts of America, US F&WS
(funded in part by a grant from the US F&WS) and the Erie Shores Council.

Collaborator(s): Hull & Associates, Inc.

Quality of Life Survey
1995

Description: Nearly 500 people responded to a survey requesting information related to land use decisions, quality of life and its enhancement through preserved open spaces. Almost 94% of respondents indicated that it is very important or fairly important to preserve undeveloped areas. It also said that community decision-makers are more likely to represent the private interests of investors than the public interest when determining use of land (approximately 75% - 25% split)

Lead Organization: University of Toledo Survey Research Institute

Issue 21 - Comprehensive Wildlife Habitat Management Plan

ODNR Purple Loosestrife Management Plan
Ongoing

Description: Purple loosestrife, *Lythrum alatum,* is a non-indigenous species of the Great Lakes region that out-competes naturally occurring area species. Many wetlands are overtaken with purple loosestrife and do not have a balance of the typical area species. The Ohio DNR controls purple loosestrife by using mechanical, chemical, and biological methods. According to the Ohio DNR, small infestations of the plant can simply be removed by hand, if care is taken to remove the root system. Also, herbicides previously approved for wetland use can be used to eliminate small populations of purple loosestrife. In addition to already functioning methods of controlling the plant, certain insects (weevils and leaf-eating beetles) are currently being tested for effectiveness in controlling and limiting the populations of purple loosestrife.

Lead Organization: Ohio DNR

OSU Extension Drainage Channel Restoration Project
1999-Present

Description: The Ohio State University Department of Food, Agricultural & Biological Engineering is conducting a study to reduce flood peaks and increase flow during critical low-flow periods, decrease suspended solids and fluctuations in dissolved oxygen, restore pool and riffle habitats, create more microhabitats, niches and substrate diversities, and reduce substrate embeddedness. The project is focusing on the science of river engineering and stream restoration to determine more natural methods of regulating channel stability and flood control and to restore the natural ecological systems of stream flow. The first objective was to determine watershed sites for evaluation – they decided on the Portage River watershed, primarily in Wood County. Secondly, the ecological benefits of each form of channel drainage were analyzed using state clean water standards. Sediment transport, the potential for flood peak, and the cost-benefit analysis of each form of channeling were also analyzed. Finally, a method of implementation was developed. A website and a list-serve were created as a method of obtaining information regarding the project. This website can be found at *www.ag.ohio-state.edu/~agwatmgt/* Though the study is not yet complete, the Wood County Engineers Office is using the knowledge gained to date on another Portage River site, if successful, these may become more standard practice throughout Northwest Ohio.

Lead Organization: OSU Extension, Wood County Engineers Office (funded in part by a grant from the Great Lakes Protection Fund)

Collaborator(s): USDA, ODNR, USGS, Heidelberg College, COS-The University of Findlay

Wildlife Management Plans
Ongoing

Description: The Toledo Area Metroparks are including wildlife management plans into master

plans for each Metropark. Ohio DNR and US Fish & Wildlife also create and implement wildlife management plans.

Lead Organization: Toledo Area Metroparks

Endangered Species Act Enforcement
Ongoing

Description: State and local wildlife officers are duly sworn peace officers of the State of Ohio and empowered to enforce the Endangered Species Act. Should violations be detected, US Fish & Wildlife would be notified for enforcement as well as Ohio Division of Wildlife officers.

Issue 22 - Coordinating Committee and Institutional Framework

Maumee RAP Committee
1987- Present

Description: On October 1, 1987 the first public meeting to organize the Maumee RAP was held. A local committee was formed from this meeting known as the Maumee RAP Advisory Committee. In 1990 this committee completed the *Stage 1 Investigation Report* with approximately 100 people assisting with research and development. In 1991, the Maumee RAP Advisory Committee completed their *Recommendations Report*, and re-formed as 25 member committee called the Maumee RAP Implementation Committee (MRIC). MRIC met as a full committee every other month and was responsible for overseeing the implementation activities of the organization and its subcommittees (action groups).

In 1997, MRIC went through strategic planning and established two new action groups and a standing steering committee. The action groups are divided into three categories: Issue (Agricultural Runoff, Dumps & Landfills, Open Space & Wetlands, Urban Runoff), Watershed (Ottawa River, Swan Creek) and Support (Finance, Public Outreach & Education). The action groups conduct most of the activities of the organization and usually meet on a monthly basis. They report to the full committee their activities and plans at each full committee meeting. The Steering Committee consists of the MRIC chair, vice-chair and action group chairs. They meet every other month (opposite the full committee). In 1999, MRIC changed its name to the Maumee RAP Committee

Since its creation the Maumee RAP organization has been tied to the local areawide planning organization, TMACOG. From 1987 to 1995 the Maumee RAP reported to their Areawide Water Quality Planning Committee (AWQPC). In 1995, the AWQPC no longer served as an active committee of TMACOG, so the Maumee RAP began reporting directly to the TMACOG Board of Trustees. Since the TMACOG Environmental Council was established in 1998, the Maumee RAP has reported to that council.

Lower Maumee River Watershed Coordinator (2001 - 2007)
TMACOG hired a full-time Watershed Coordinator through a six-year grant from Ohio DNR. The Watershed Coordinator is currently undertaking the development of workplans, the completion of this report, and will be assisting the Maumee RAP Committee in the development of a Maumee AOC Recommendations Report 2, Maumee RAP Strategic Plan and a Lower Maumee River Watershed Plan of Action. The Watershed Coordinator will also be involved in project development and implementation with Maumee RAP Action Groups.

Lead Organization: TMACOG, Maumee RAP Committee
(funded in part by a grant from Ohio DNR)

Expansion of the AOC
1993

Description: The IJC and Ohio EPA both agreed with the Maumee RAP's recommendation to

include Turtle Creek, Packer Creek and the Toussaint River in the Maumee AOC. This action took place following the investigation reports for these watersheds, though the lack of data made it difficult to determine the extent to which specific beneficial uses were impaired. To quote the (former) Director of Ohio EPA, Donald Schregardus, from his letter dated November 10, 1993, "the instability of the Great Lakes bald eagle population provided sufficient justification for increasing environmental protection efforts in these direct tributaries. Continued monitoring of sensitive coastal areas will enable a more comprehensive assessment of the effectiveness of remedial actions taken in the AOC and is consistent with the ecosystem approach advocated by the RAPs."

Lead Organization: Maumee RAP, TMACOG

Maumee RAP Relationship Coordination
1998 - Present

Description: In 1998 the Maumee RAP Committee, TMACOG, and Ohio EPA agreed that there were differing view on the identity of the Maumee RAP and the nature of the structure under which it was functioning. A committee of eight people representing the three organizations met monthly to clarify the relationship of these organization with the goal of making the Maumee RAP more effect. A "Relationship Document" produced by this Committee clarified the relationship of the organization and established the independent identity of the Maumee RAP. It also established a chain of command and decision making process to be used. The members of this Committee agreed to meet only on an as needed basis.

Lead Organization: Maumee RAP, TMACOG, Ohio EPA

TMACOG Environmental Council
1998 - Present

Description: The TMACOG Environmental Council oversees and manages the environmental planning functions of TMACOG. It recommends regional environmental policies through the Areawide Water Quality Management Plan for which it is responsible. The Environmental Council makes recommendations to the TMACOG Board of Trustees, which adopts final policy. Through these policies, the strategic, long-term Environmental Council goals of TMACOG are established, and the methods to achieve short-term tactical objectives are determined. The Environmental Council also establishes the administrative support necessary to achieve these goals and objectives.

The Environmental Council has responsibility once assigned to TMACOG's Areawide Water Quality Planning Council, though the approach is different, with a greater emphasis on comprehensive watershed planning rather than control of pollutants. The Council recommends action on the Areawide Water Quality Management Plan (AWQMP) to the TMACOG Board of Trustees. Chapters on public wastewater treatment have been adopted by the Board of Trustees, nonpoint source chapters are currently in draft form, and additional chapters over the next several years are planned. Throughout, RAP recommendations will be included in drafts, and the RAP will be involved in their review. The Environmental Committee reserves a voting position for a Maumee RAP Committee representative.

Toledo Brownfields Group
Early 1990s-Present

Description: The Toledo Brownfields Group began in the early 1990s as the Mayor's Environmental Advisory Board. In 1998, the City of Toledo received a $200,000 US EPA grant to conduct environmental site assessments. With this grant, they have updated the Brownfield Site Inventory, solicited community input and involvement, highlighted marketable brownfield properties, and sought funding to sustain and promote brownfield redevelopment.

The Toledo Brownfields Group has identified the City's top sites for redevelopment, ranked for market value, public health, or neighborhood importance. Eighteen sites have been designated as high priority for redevelopment support. The first five are the sites the City plans to dedicate US EPA pilot assessment funds toward. The City and the Brownfields Group plan to monitor the progress of the remaining sites and, if requested, the Group will provide technical advice and investigate financing options for a prospective developer.

Lead Organization: City of Toledo Division of Environmental Services

Collaborator(s): City of Toledo Departments of Economic Development and Neighborhoods, community development corporations, environmental consulting companies, financial institutions, developers, and property owners.

Maumee Bay Bacteria Task Force
1997 - Present

Description: Due to high levels of *E. coli* bacteria at Maumee Bay State Park, the Maumee Bay Task Force was formed. Their goal was to determine the cause of the bacteria contamination and develop a solution. The task force has supported several grants by the University of Toledo to determine the source bacterial loadings. They have also encouraged other organization to assist in these efforts.

Lead Organization: Toledo-Lucas County Health Department

Collaborator(s): TMACOG, University of Toledo, City of Toledo Division of Environmental Services, Ohio EPA, Ohio Department of Health, Ohio DNR, City of Oregon

Ottawa River Remediation Team
1998 - Present

Description: The Ottawa River Remediation Team (ORR-Team) was formed in early 1998 at the request of the Maumee RAP Ottawa River Action Group. The ORR-Team is a partnership of environmental professionals, including federal, state, and local governmental agencies, working to expedite the restoration of the beneficial uses through strategic watershed planning and coordination for the Ottawa River and western Lake Erie community in order to remediate this highly contaminated stream.

Through the collaborative efforts of the team, a task and timeline table has been

created to identify many of the known activities that have and still need to occur to facilitate the restoration of the Ottawa River. By utilizing this table the ORR-Team has been able to coordinate the data collection and research activities being conducted by different agencies. It has also enabled the members to line up and secure grant projects, thus maximizing each funding source opportunity.

The Ottawa River Remediation Team has developed goals to clarify what the team wants to accomplish. They are as follows:

- Elimination of all major sources of contamination to the Ottawa River including point and nonpoint as well as chemical and bacterial.
- Remediation/cleanup of all contaminated sediments in the Ottawa River as appropriate.
- Dredge the lower Ottawa River for navigation/recreational use.
- Restoration of the upland and aquatic ecosystem in the Ottawa River.
- Identification of all funding sources and authorizations available to assist with implementing the goals of the Ottawa River Remediation Team and the Maumee RAP Ottawa River Action Group.
- Identification of all stakeholders and partners available to assist with implementing the goals of Ottawa River Remediation Team.
- Removal of the contact and consumption advisories on the Ottawa River.
- Achieve full attainment of the Ohio EPA's Water Quality Standards.

The ORR-Team has defined four basic concerns to be addressed: water quality, contaminate sources, sediment quality, and the upland and aquatic ecosystem. The team has identified tasks and subtasks for each of these four concerns. Some of the recent projects facilitated through the coordination of the ORR-Team include sediment sampling to fill data gaps, fish tissue sampling, identifying dredging and disposal options with stakeholders, hot spot delineation, and risk assessment.

Ottawa River Remediation Team Dredging Analysis (2000)
Members of the team have revised costs for dredging the Ottawa River, in the neighborhood of $1.7 million with an additional $700,000 from the ACOE. Assuming disposal could be accomplished at Grassy Island, the cost would be between $2.5 - $3 million. The cost for a new CDF would add approximately $7 million to the project. That results in a local cost of between $1.5 - $5 million, depending on disposal needs. The team is exploring other options. The proposed dredge would create a channel that is 80 feet wide and approximately five feet deep and would connect the Ottawa River to the Maumee River Shipping Channel.

Lead Organization: TLCPA, ACOE, City of Toledo, Ohio EPA, Hull & Associates

Collaborator(s): Maumee RAP Ottawa River Action Group, Association of Ottawa River Boat Clubs, Outings Unlimited, Ottawa River Kleanup Association, Congresswoman Marcy Kaptur's Office

Northwest Ohio Pollution Prevention Team
1998 - Present

Description: Established as a collaborative effort of various organizations to address such issues as general research on pollution prevention for homeowners, support and expansion of BGSU's orphan chemical program, and increased public education of the concept

of pollution prevention. They manage a website *(www.nwop2.org)* to serve as the resource for pollution prevention information in Northwest Ohio. This group was briefly a subcommittee of the Maumee RAP Public Outreach and Education Action Group in 1998.

Lead Organization: Ohio EPA NWDO

Collaborator(s): Owens Community College, Toledo Division of Environmental Services, BGSU, University of Toledo, Maumee RAP, Toledo Zoo, COSI, Maumee Bay State Park, Toledo Area Metroparks, Lucas County Solid Waste Management District, Wood County Solid Waste Management District, Keep Toledo-Lucas County Beautiful, Lucas SWCD

Duck and Otter Creeks Partnership, Inc.
1999 - Present

Description: Members of the Maumee RAP Dumps and Landfills Action Group spearheaded an initiative in the Duck and Otter Creeks watersheds to bring together stakeholders in a voluntarily partnership to investigate and address environmental issues affecting these watersheds. (see – Duck and Otter Creeks Stakeholders Summit for more details)

The Duck and Otter Creeks Partnership, Inc. is a voluntary non-profit organization whose members include citizens, local businesses, industries, government agencies, institutions, and public organizations. Early charter-signing members include Susan Horvath, Sunoco, Inc., Envirosafe Services of Ohio, Pilkington North America, Inc., BP Amoco Oil - Toledo Refinery, TMACOG, City of Toledo, Department of Public Utilities, Bowser-Morner, Inc., The Mannik & Smith Group, Inc., Natural Areas Stewardship, Inc., and the City of Oregon. In addition to these members, the Partnership has a number of other active non-charter signing participants.

The Partnership is dedicated to the mission of better understanding the nature of the water, sediments, flood plains and adjacent wetlands of Duck and Otter Creeks for the purpose of promoting the protection of human health and biological integrity through voluntary non-regulatory actions.

<u>Duck and Otter Creeks Partnership Watershed Coordinator</u> (2000 - 2006)
The Partnership hired a full-time Watershed Coordinator through a six-year, $191,000 grant from the Ohio DNR, with matching cash and in-kind commitments totaling over $151,000 for six years. The Watershed Coordinator will assist the Partnership with watershed planning, organizational development, public outreach, and project development and implementation. The Partnership has recently undertaken a limited strategic planning process to identify the key objectives it will focus on for the next several years and the types of activities or projects that could fulfill these objectives.

Lead Organization: Duck and Otter Creeks Partnership, Inc.
(funded in part by a grant from Ohio DNR)

Collaborator(s): Financial matches provided by City of Oregon, City of Toledo, Bowser-Morner, Inc., Envirosafe Services of Ohio, BP Amoco, Pilkington, Sunoco, Inc., among others. The University of Toledo Lake Erie Center is donating office space, computer,

and other overhead expenses.

Maumee River Basin Partnership of Local Governments
2001-Present

Description: The Partnership was formed in early 2001 as a means of sharing information across the jurisdictional and political boundaries of the many villages, cities, counties and states located in the Maumee River watershed. The priority issues were identified as Agricultural Runoff, Land Use and Urban Sprawl, Point and Nonpoint Source Runoff, Stream Designations, and Current Regulatory Issues. The organization is co-chaired by the City of Toledo and the City of Fort Wayne and meets every 4-6 weeks.

Lead Organization: City of Fort Wayne, City of Toledo

Collaborator(s): Many municipalities; environmental organizations; local, regional, state and federal agencies; academia; businesses

Issue 23 - Long-Term Monitoring of the AOC

Toledo Division of Environmental Services Sampling Activities in the Maumee AOC
1968-Present

Description: Since 1968, Toledo Environmental Services has been monitoring water quality of the streams and rivers in and near the City of Toledo, Ohio, including areas of Lucas and Wood counties. The Toledo Division of Environmental Services does stream sampling from March through November. Due to CSO and SSO issues there may have been additional sampling performed by Jones and Henry. The following is a list of sites and parameters tested.

Sites Sampled			
Maumee River (Boat Sites)	**Maumee River (Shore Sites)**	**Ottawa River**	**Swan Creek**
C +O Dock.	Maple St. Perrysburg	Summit St.	St. Clair
TTRR Bridge	Waterville Water Plant	Suder	Hawley St.
MLK Bridge	Otter Creek	Stickney Ave	Detroit Ave.
Rossford Marina	Delaware Creek	Lagrange St.	Eastgate
		Berdan	
		Monroe St.	
		UT Bridge	
		Sylvania	
		Hill Ditch	
		Silver Creek	

The parameters obtained were:

Time
Temp. (C)
Cond. umhos/cm
pH
Solids/Floaties
Chloride mg/L
Nitrite-N mg/L
Nitrate-N mg/L
Ammonia mg/L
Total P as PO4
DO mg/L
BOD-5day mg/L
Turbidity NTU
Total Solids mg/L
Total Coliform*
E. Coli*
Sus. Solids mg/L
Sol Solids mg/L
Hardness mg/L
Dis. Tot. Cr. ug/L
Diss. Cd ug/L
Diss. Cu ug/L
Diss. Zinc mg/L
Diss. Ni ug/L
Diss. Pb ug/L
Diss. Fe mg/L
Diss. Hg ug/L

**Not on Maumee Boat Locations*

Heidelberg College Monitoring
1970-Present

Description: Since the 1970s, Heidelberg College has measured the levels of sediment, nutrients, pesticides, and organic carbon in the waters of tributaries to Lake Erie, including the Maumee River. These findings were used to analyze the atrazine ecotoxicology, pesticide additions from the tributaries, and a study of nutrients in the tributaries. Also being studied are the coastal wetlands and their modification of nonpoint source pollution to Lake Erie. Funded in part by Ohio DNR, the Ohio Tributary Monitoring Program covers seven stations around the Lake Erie river basin and was initiated to reduce the effects of eutrophication in the area. Over the past 30 years, improvements have been seen in concentrations of sediment, phosphorus, and some forms of nitrogen. The International Joint Commission (IJC), the Lake Erie LAMP program, the Lake Erie Agricultural Systems for Environmental Quality program, among others, use the information gathered by Heidelberg College to help to determine the quality of Lake Erie.

Lead Organization: Heidelberg College

Collaborator(s): Ohio DNR, USDA, USGS, Lake Erie LAMP

Maumee Area of Concern (MAOC) Project
1992-1998

Description: The Maumee RAP Stage 1 Report (1990) reflected a concern for the lack of environmental quality data in the Maumee Area of Concern, as well as for the effects of unpermitted discharges to the Maumee AOC. The Maumee Area of Concern Project (MAOC) was a response to those concerns, and was designed to provide data on the baseline environmental conditions in the Maumee AOC. Two of the primary objectives of this Project were to assess the health of the lower Maumee River and the Maumee Bay ecosystems and to characterize uncontrolled sources affecting the Maumee AOC as identified in Maumee RAP documents.

The MAOC Project was conducted in three phases:

Phase 1 - The Ottawa River watershed was the focus, with sampling at several waste sites. Several other streams were also sampled, in addition to the Ottawa River. Samples were taken from several media, including water, sediment, and biota. (1993-1994)

Phase 2 - This phase centered on the Otter Creek and Duck Creek watersheds, with several waste sites investigated, and water, sediment, and biota sampled from those creeks, as well as other streams in the AOC. (1995-1996)

Phase 3 - Emphasis was on the Swan Creek watershed, with several waste sites investigated. Water and sediment sampling was conducted in Swan Creek, as well as other streams in the AOC; no biological sampling was conducted during Phase 3. (1997-1998)

In addition to sampling analysis, this grant allowed for the purchase of the equipment necessary to conducted many of the sampling events that have occurred in the Maumee AOC including: a 19' Boston Whaler (R/V Don Higgins), a 20' Pontoon Boat (R/V Mud Dauber), a Suburban, vibrocore, and generator.

MAOC Project Extension (1998)
Based on available monies remaining in the grant, a second screening survey using sediment core samples was conducted in Otter Creek and Duck Creek, as well as additional sampling of sediment in the Ottawa River. Samples were analyzed using more conventional methods than the previous screening analysis.

Lead Organization: Ohio EPA (funded in part through grant from US EPA)

Collaborator(s): Maumee RAP

MAOC ArcView (1998-Present)
The MAOC Project GIS was a customized ArcView GIS incorporating information collected during the MAOC Project and other sampling projects, including results of sampling events, project documents, photographs, and maps. Users are able to query a database to produce a variety of maps capable of exhibiting the results of several sampling events, allowing for the identification of hot spots and possible pollution sources information.

Lead Organization: Ohio EPA (contractor: AScI Corporation)

Ottawa River Sediment Screening Survey
1994-1996

Description: A comprehensive screening survey of surface and subsurface river sediments to evaluate the impacts of numerous uncontrolled waste sites primarily in the health advisory zone of the Ottawa River. The Survey was intended to identify contaminated hot spots. A cost effective screening level of analysis was utilized.

Lead Organization: Ohio EPA-DERR (funded in part by a grant from GLNPO)

Ottawa RiverView (1995-1996)
RiverView was developed as a user-friendly GIS-type system, that would be available on a CD-ROM, to provide technical information, including maps, data, graphics, photographs, sampling data, and documents linked together in a relational database.

Lead Organization: Ohio EPA-DERR (contractor: AScI Corp.)

Collaborator(s): Maumee RAP

Maumee AOC Contaminated Sediment Screening Project
1995-1996

Description: A screening level sediment survey of Maumee Bay, lower Maumee River, Duck Creek, Otter Creek, Swan Creek, and Ottawa River. The project was intended to determine general contaminate distribution and to identify potential hot spots. Sediment vibrocore samples were collected from the GLNPO R/V Mudpuppy. Screening level analysis was conducted by AScI Corp.

Lead Organization: Ohio EPA-DSW (funded in part by a grant from GLNPO)
(contractor: AScI Corp.)

Collaborator(s): Maumee RAP

Sediment Toxicity Survey (1998)
This project was an extention of the 1995-1996 Maumee AOC Contaminated Sediment Screening Survey grant. Sediment toxicity testing was conducted on sediment samples collected from the lower segments of Duck Creek, Otter Creek, Swan Creek, Maumee River, Ottawa River, and Maumee Bay. Testing was conducted using *Hyalella azteca* as the test organism. Bioaccumulation testing was also conducted using *Lumbriculus sp.* Sample analyses was done by Ohio EPA Division of Environmental Services.

Lead Organization: Ohio EPA Division of Surface Water

Collaborator(s): Maumee RAP

Duck Creek Wetlands Sampling Project
June 2001

Description: This sampling project was conducted as a precurser to the Duck Creek Wetlands Restoration Project (see below). Samples were collected along Duck Creek within the City of Toledo to determine if hazardous contaminants were present in these estuarial wetlands. It was a one day investigation that was conducted on June 27, 2001.

Nine soil boring locations were selected within the wetland study area following the river's western riparian corridor. The cores ranged from 12 to 16 feet deep, where native or unimpacted soils were found. The soil lithology of each core was logged. One sample was collected from each bore hole for laboratory analysis through the Contract Lab Program (CLP) and analyzed for Target Compound List (TCL) organics, which included volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), pesticides, and polychlorinated biphenyls (PCBs), and the Target Analyte List (TAL) metals and cyanide.

Overall the contamination of the soils in this area were relatively low. Sample results were compared to the Ohio Voluntary Action Program (VAP) residential land use standards and the US EPA Region 9 Preliminary Remediation Goals (PRGs) for residential soils. The samples contained concentrations exceeding the Ohio EPA VAP and US EPA PRG values for three semi-volatile compounds. PCBs were in exceedance of the PRG value of 0.22 ppm at two sample locations. Five metals exceeded the PRG value and two metals exceeded the VAP value.

Lead Organization: Ohio EPA - DERR (funded in part by US EPA as a Target Brownfield Assessment)

Collaborator(s): Duck and Otter Creeks Partnership, Inc., Toledo-Lucas County Port Authority

Duck Creek Wetlands Restoration Project (tentative start in 2002)
This project is pending approval from US EPA and the Toledo City Council. However, they are expected to approve a consent agreement for a $1 million City of Toledo Supplemental Environmental Project (SEP). $500,000 of this fund will be used to fund the creation of wetlands along Duck Creek. The Toledo-Lucas County Port Authority and the City of Toledo are working closely with the Duck & Otter Creeks Partnership. The TLCPA will oversee a paid consultant and contractor to complete environmental assessments, wetland design and construction of a 1-acre parcel near

Duck Creek. This property was formerly an industrial facility which produced asphalt shingle. The SEP is also expected to fund aerial photographs and topographic mapping of Duck and Otter Creeks, analysis of potential properties for additional wetland creation, environmental studies, engineering design, wetland restoration/construction, and the creation of public access areas and overlooks.

Lead Organization: City of Toledo, Toledo-Lucas County Port Authority (funded as a Supplemental Environmental Project to an US EPA enforcement case)

Collaborator(s): Duck and Otter Creek Partnership, Inc., City of Toledo

Status and Trends in Suspended-Sediment Discharges, Soil Erosion, and Conservation Tillage in the Maumee River Basin
1998-1999

Description: As part of a national study of trends in surface and ground water quality, the US Geological Survey (USGS) completed a five-year, $6.7 million study of the western drainage basin of Lake Erie, including the Maumee AOC. The objective of this effort was to achieve a comprehensive understanding of the effects of nutrients and agricultural/industrial chemicals. This study will help promote prudent decision-making regarding restorative efforts in the Maumee AOC. The study compared the relationship between suspended-sediment discharges and conservation-tillage practices and looked at the total soil loss for the Maumee River basin in Ohio, Michigan, and Indiana. This study worked on the premise that soil erosion caused suspended-sediment discharges to the Maumee River and, in turn, suspended-sediments in Lake Erie. The major human and natural factors to suspended – sediment discharges are soil drainage, runoff potential, stream slope, and agricultural land use.

The study concluded with the following information:

	Tiffin/St. Joseph Rivers	Auglaize/St. Mary's Rivers
Soil Quality	Moderately/somewhat poorly drained	Poorly/very poorly drained
Runoff Potential	Moderate	High
Basin Area	29.0%	48.7%
Average-annual streamflow	30.7%	53.5%
Average annual suspended-sediment discharge	9.31%	46.5%

From 1993-1998, 55.4% of all crop fields along the Maumee River Basin used conservation methods of tilling. The increase in conservation tillage corresponds with a decrease in suspended-sediment discharge over time. The long term goal of the United States ACOE is to reduce sediment dredged from the Maumee River/Maumee Bay by 15%.

Lead Organization: USGS, US ACOE, USDA-NRCS

Ottawa River Geographic Initiative
1999-2001

Description: This project was conducted to continue the hot spot delineation and remedial options evaluation of the Ottawa River. Work performed during this project addressed the chemical and biological data needs for a baseline ecological and human health risk assessment. (see - Ottawa River Hot Spot Delineation and Risk Assessment Project)

A total of 19 sediment, 19 surface water, and 11 soil samples were collected between river miles 0.0 and 8.8 on June 26-27, 2000. They were analyzed for semi-volatile organic compounds (SVOCs), pesticides, and (PCBs), Target Analyte List (TAL) metals and cyanide were conducted by the US EPA Contract Laboratory Program (CLP). Sediment samples for total organic carbon and grain size were collected and sent to the Ohio EPA Division of Environmental Services for analysis. At the request of the Ohio Department of Health risk assessors, sediment samples for acid volatile sulfide and simulated extracted metals were collected and sent to Heidelberg College for analysis.

Also as part of this investigation, Ohio EPA Division of Surface Water completed a biological integrity assessment of the Ottawa River. This involved the collection of fish tissue and macro invertebrates in seven sites between river miles 0.0 and 12.0.

Lead Organization: Ohio EPA -DERR (fund in part by a grant from USEPA)

Collaborator(s): TMACOG, ORR-Team

Ohio EPA TMDL Program
1999-Present

Description: The US EPA Total Maximum Daily Load program started in 1999. The Ohio EPA is responsible for its implementation in Ohio. This program analyzes water quality by calculating the amount of pollutants needing to be reduced in order to meet water quality standards. The program intends to identify and restore polluted rivers, streams, lakes, and surface water bodies across the country in four steps. The program contains four phases that overlap over the course of the water body restoration:

1. Assess water body health: biological, chemical, habitat
2. Develop a restoration target and viable scenario
3. Implement the solution: inside/outside the Ohio EPA
4. Validate to monitor progress: de-list or re-list

These four phases comprise a 12-step program which the Ohio EPA Division of Surface Water is using to improve Ohio's waterways. Ohio EPA has a schedule to complete these TMDLs for each watershed, the lower Maumee River is tentatively scheduled for 2011.

Lead Organization: US EPA, Ohio EPA Division of Surface Water

Ohio EPA Sampling Activities in the AOC
Ongoing

Description: Ohio EPA has conducted a variety of studies (usually smaller than those specifically identified in this report) within the Maumee AOC. These studies include:

- Biological and water quality study of the lower Maumee River mainstem
- and major tributaries (1986)
- Fish tissue, bottom sediment, and surface water quality in the Ottawa
- River/Tenmile Creek (1991)
- Biological, fish tissue and sediment study in the Ottawa River (Dura Ave.
- Landfill) (1996)
- Snapping Turtle tissue sampling (1997)
- Fish Tissue Study of the Ottawa River (1999 & 2000)
- Biological and fish tissue study of the Ottawa River (2001)

Lead Organization: Ohio EPA

Issue 24 – 401 and 404 Education

Wetlands: A Valuable Resource? Current Perspectives Farm-City Forum
1993

Description:	Northwest Ohio Farm-City Council held a seminar focusing entirely on various wetland issues. Approximately 180 people attended this event.
Lead Organization:	NW Ohio Farm-City Council

Project Tracking by Locals
Ongoing

Description:	Many organizations review and track specific wetlands and development projects. When appropriate, these organizations notify or prepare comments to regulatory personnel on their support or disapproval of projects. In some cases, these organizations suggest opportunities for incorporating on-site habitat protection or encourage development on an alternate site.
Lead Organizations:	Natural Areas Stewardship, OORPA, and The Nature Conservancy, Black Swamp Conservancy, others.
Collaborator(s):	Maumee RAP Open Space and Wetlands Action Group

Appendices

Appendix A – Index of Lead Organizations

This organizational index provides information regarding many of the lead organizations identified in this document. If an organization is not listed, one of the key collaborators on an activity or project should be.

Government - Local

City of Bowling Green
304 N. Church Street, Bowling Green, Ohio 43402
Phone: (419)354-6204
Fax: (419)352-1262

City of Maumee
400 Conant Street, Maumee, Ohio 43537
Phone: (419)897-7100
Fax: (419)897-7104

City of Oregon
5330 Seaman Road, Oregon, Ohio 43616-2633
Phone: (419)698-7095
Fax: (419)691-0241

City of Perrysburg
201 W. Indiana Avenue, Perrysburg, Ohio 43551
Phone: (419)872-8000
Fax: (419)872-8019

City of Rossford
133 Osborn Street, Rossford, Ohio 43460
Phone: (419)666-0210
Fax: (419)666-4279

City of Sylvania
6730 Monroe Street, Sylvania, Ohio 43560
Phone: (419)882-7102
Fax: (419)885-8998

City of Toledo

Division of Environmental Services
348 South Erie Street, Toledo, Ohio 43602
Phone: (419)936-3015
Fax: (419)936-3959

Division of Waste Water Treatment
Bay View Treatment Plant
3900 N. Summit Street, Toledo, Ohio 43611
Phone: (419)729-3861
Fax: (419)936-2161

Division of Water Treatment
Collins Park Treatment Plant
600 Collins Park, Toledo, Ohio 43605
Phone: (419)936-3021
Fax: (419)936-3053

Division of Water Distribution
401 South Erie Street, Toledo, Ohio 43602
Phone: (419)936-2506
Fax: (419)936-2828

Lucas County Auditor's Office
One Government Center, Suite 600, Toledo, Ohio 43604
Phone: (419)213-4394
Fax: (419)213-4417

Lucas County Board of Commissioner
One Government Center, Suite 800, Toledo, Ohio 43604
Phone: (419)213-4500
Fax: (419)213-4299

Lucas County Engineer's Office
One Government Center, Suite 870, Toledo, Ohio 43604
Phone: (419)213-4540
Fax: (419)213-4598

Lucas Soil and Water Conservation District
130-A W. Dudley Rd., Maumee, Ohio 43537
Phone: (419)893-1966
Fax: (419)893-3131

Lucas County Solid Waste Management District
Phone: (419)255-6477

761 Berdan Ave., Toledo, Ohio 43610 Fax: (419)255-4687

Ottawa County Board of Commissioners Phone: (419)734-6700
315 Madison Street, Port Clinton, Ohio 43452 Fax: (419)734-6898

Ottawa Soil and Water Conservation District Phone: (419)898-1595
240 W. Lake Street, Unit B, Oak Harbor, Ohio 43449 Fax: (419)898-5189

Wood County Board of Commissioners Phone: (419)354-9100
One Courthouse Square, Bowling Green, Ohio 43402 Fax: (419)354-1522

Wood Soil and Water Conservation District Phone: (419)352-5172
1616 E. Wooster Street, Unit R1-R2, Box N, Fax: (419)354-7923
Bowling Green, Ohio 43402

Wood County Solid Waste Management District Phone: (419)354-9297
639 S. Dunbridge Road, Bowling Green, Ohio 43402 Fax: (419)354-1620

Wood County Park District Phone: (419)353-1897
18729 N. Mercer Road, Bowling Green, Ohio 43402 Fax: (419)353-7765

Wood County Plan Commission Phone: (419)354-9128
One Courthouse Square, Bowling Green, Ohio 43402 Fax: (419)354-1522

Village of Ottawa Hills Phone: (419)536-1111
2125 Richards Road, Toledo, Ohio 43606 Fax: (419)535-3550

Village of Swanton Phone: (419)826-9515
219 Chestnut Street, Swanton, Ohio 43558 Fax: (419)825-1827

Village of Waterville Phone: (419)878-8107
25 N. Second Street, Waterville, Ohio 43566 Fax: (419)878-8044

Village of Whitehouse Phone: (419)877-5383
6655 Providence St., Whitehouse, Ohio 43571 Fax: (419)877-5635

Monclova Township Phone: (419)865-7862
Albon Road & Monclova Road, Monclova, Ohio 43542 Fax: (419)865-8481

Government - Regional

Ottawa-Seneca-Sandusky Solid Waste Management District Phone: (419)334-7222
602 W. State Street, Fremont, Ohio 43420 Fax: (419)334-8626

Toledo Area Metroparks Phone: (419)535-3050
5100 W. Central Ave., Toledo, Ohio 43615 Fax: (419)535-3053

Toledo Area Sanitary District Phone: (419)726-7891
5015 Stickney Ave., Toledo, Ohio 43612 Fax: (419)726-7721

Toledo-Lucas County Health Department Phone: (419)213-4100
635 N. Erie Street, Toledo, Ohio 43624 Fax: (419)213-4141

Toledo-Lucas County Plan Commission
One Government Center, Suite 1620, Toledo, Ohio 43604
Phone: (419)245-1200
Fax: (419)936-3730

Toledo-Lucas County Port Authority
One Maritime Plaza, 7th Floor, Toledo, Ohio 43402
Phone: (419)243-8251
Fax: (419)243-1835

Toledo Metropolitan Area Council of Governments (TMACOG)
300 Central Union Plaza, Toledo, Ohio 43697
Phone: (419)241-9155
Fax: (419)241-9116

Government - State

Michigan Department of Environmental Quality

Central Office
P.O. Box 30473, Lansing, Michigan 48909
Phone: (517)373-7917
Fax: (517)241-7401

Jackson District Office
301 E. Louis B. Glick Highway, Jackson, MI 49201
Phone: (517)780-1556
Fax: (517)780-7855

Michigan Department of Natural Resources

Central Office
P.O. Box 30028, Lansing, Michigan 48909
Phone: (517)373-2329
Fax: (517)373-1547

Southeastern Management Unit
38980 Seven Mile Road, Livonia, Michigan 48152
Phone: (734)953-0241
Fax: (734)953-1536

Ohio Department of Natural Resources

Central Office
Belcher Dr., Fountain Square, Columbus, Ohio 43224
Phone: (614)265-6565
Fax: (614)261-9601

Northwest Ohio Office
952 Lima Ave., Box A, Findlay, Ohio
Phone: (419)424-5000
Fax: (419)422-4875

Ohio Department of Transportation

Central Office
1980 W. Broad St., Columbus, Ohio 43223
Phone: (614)466-7170
Fax: (614)644-8662

District 2 Office
317 East Poe Road, Bowling Green, Ohio 43402
Phone: (419)353-8131
Fax: (419)353-1468

Ohio Environmental Protection Agency

Central Office
Lazarus Government Center, 122 S. Front St., Columbus, Ohio 43215
Phone: (614)644-3020
Fax: (614)644-2329

Northwest District Office
347 N. Dunbridge Rd, Bowling Green, Ohio 43402
Phone: (419)352-8481
Fax: (419)352-8468

Ohio Lake Erie Commission
One Maritime Plaza, 4th Floor, Toledo, Ohio 43402
Phone: (419)245-2514
Fax: (419)245-2519

Ohio Sea Grant

Main Office
1314 Kinnear, Columbus, Ohio 43212-1194
Phone: (614)292-8949
Fax: (614)292-4364

Toledo Office
One Government Center, Suite 550,
Toledo, Ohio 43604
Phone: (419)213-4254
Fax: (419)213-4241

Port Clinton Office
Camp Perry, Building 3, Room 12,
Port Clinton, Ohio 43452
Phone: (419)635-1022
Fax: (419)635-1022

OSU Extension

Northwest District Office
952 Lima Ave., Box C, Findlay, Ohio 45840
Phone: (419)422-6106
Fax: (419)422-7595

Lucas County
One Government Center, Suite 550, Toledo,
Ohio 43604
Phone: (419)213-4254
Fax: (419)245-4241

Ottawa County
240 W. Lake St., Unit C, Oak Harbor, Ohio 43449
Phone: (419)898-3631
Fax: (419)898-3232

Wood County
440 E. Poe Road, Suite A, Bowling Green,
Phone: (419)354-9050
Fax: (419)352-7413

Ohio Water Development Authority
88 E. Broad St., Suite 1300, Columbus, Ohio 43215
Phone: (614)466-5822
Fax: (614)644-9964

Government - Federal

US Department of Agriculture - Farm Services Agency

Fulton and Western Lucas Counties
128 Depot Street, Wauseon, Ohio 43567
Phone: (419)335-6061
Fax: (419)335-0802

Ottawa and Eastern Lucas Counties
240 W. Lake Street, Unit A, Oak Harbor, Ohio 43449
Phone: (419)898-2651
Fax: (419)898-0319

Wood County
1616 E. Wooster Street, Unit R1-C, Box M,
Bowling Green, Ohio 43402
Phone: (419)352-5171
Fax: (419)354-7511

US Department of Agriculture - Natural Resources Conservation Services
(f.k.a. Soil Conservation Services)

Headquarters
1400 Independence Ave., SW,
Washington, D.C. 20250
Phone: (202)720-2791

Ohio State Office
200 N. High St., Room 522, Columbus, Ohio 43215
Phone: (614)255-2472
Fax: (614)255-2548

Ottawa County Field Office
240 W. Lake Street, Unit B, Oak Harbor, Ohio 43449
Phone: (419)898-6431
Fax: (419)898-5189

Wood County Field Office
1616 E. Wooster Street, Unit R1-R2, Box N,
Phone: (419)352-5172
Fax: (419)354-7923

Bowling Green, Ohio 43402

US Army Corps of Engineers

Buffalo District — Phone: (716)879-4200
1776 Niagara Street, Buffalo, New York 14207 — Fax: (716)879-4355

Detroit District — Phone: (313)226-7485
477 Michigan Avenue, Detroit, Michigan 48226 — Fax: (313)226-7095

US Coast Guard -Toledo Marine Safety Office — Phone: (419)418-6000
420 Madison Ave., Toledo, Ohio 43604 — Fax: (419)259-6374

US Environmental Protection Agency

Headquarters — Phone: (202)260-2090
Ariel Rios Bldg., 1200 Pennsylvania Ave., NW,

Region 5 - Main Office — Phone: (312)353-2000
77 West Jackson Blvd., Chicago, Illinois 60604 — Fax: (312)353-4135

Region 5 - Cleveland Office — Phone: (440)250-1700
25089 Center Ridge Road, Westlake, Ohio 44145 — Fax: (440)250-1750

Great Lakes National Program Office — Phone: (312)886-4040
77 West Jackson Blvd., Chicago, Illinois 60604 — Fax: (312)535-2018

US Geological Survey

National Center — Phone: (703)648-4000
12201 Sunrise Valley Dr., Reston, Virginia 20192 — Fax: (703)648-6693

Ohio Office – Water Resources Division — Phone: (614)469-5553
975 W. Third Ave., Columbus, Ohio 43212 — Fax: (614)430-7777

US Fish and Wildlife Service

Headquarters — Phone: (202)208-4718
1849 C. Street, Washington, D.C. 20240 — Fax: (202)208-6965

Reynoldsburg Ecological Services — Phone: (614)469-6923
6950-H Americana Parkway, Reynoldsburg, — Fax: (614)469-6919

Ottawa National Wildlife Refuge — Phone: (419)898-0014
14000 West State Route 2, Oak Harbor, Ohio 43449 — Fax: (419)898-7895

Representative Marcy Kaptur

Washington, D.C. Office — Phone: (202)225-4146
2104 Rayburn Building, Washington, D.C. 20515 — Fax: (202)225-7711

Toledo Office — Phone: (419)259-7500
420 Madison Ave., Toledo, Ohio 43604 — Fax: (419)255-9623

Government - International

International Joint Commission — Phone: (313)226-2170
P.O. Box 32869, Detroit, Michigan 48232 — Fax: (517)257-6740

Business

BP Oil
4001 Cedar Point Rd., P.O. Box 696, Toledo, Ohio 43697-0696
Phone: (419)698-6200
Fax: (419)698-6361

Bowser-Morner, Inc.
1419 Miami St., P.O. Box 838, Toledo, Ohio 43697-0838
Phone: (419)691-4800
Fax: (419)691-4805

Cousins Waste Control - (see Philip Services Corporation)

Finkbeiner, Pettis & Strout
600 Jefferson Ave., P.O. Box 1808, Toledo, Ohio 43603-1808
Phone: (419)473-1121
Fax: (419)473-2108

Hull & Associates, Inc.
3401 Glendale Ave., Suite 300, Toledo, Ohio 43614
Phone: (419)385-2018
Fax: (419)385-5487

Jones & Henry Engineers Ltd.
2000 W. Central Ave., Toledo, Ohio 43606
Phone: (419)473-9611
Fax: (419)473-8924

Libbey-Owens-Ford - (see Pilkington)

Mannik & Smith Group
(f.k.a. Midwest Environmental Consultants and Mannik & Smith Engineers)
1800 Indian Wood Circle, Maumee, Ohio 43537
Phone: (419)891-1800
Fax: (419)891-1595

Midwest Environmental Consultants - (see Mannik & Smith Group)

N-Viro International
3450 W. Central Ave., Suite 328, Toledo, Ohio 43606
Phone: (419)535-7493
Fax: (419)535-7008

Perstorp Polyols, Inc.
600 Matzinger Rd., Toledo, Ohio 43612-2695
Phone: (419)729-5448
Fax: (419)729-3291

Philip Services Corporation (f.k.a. Cousins Waste Control)
1701 E. Matzinger Road, Toledo, Ohio 43612
Phone: (419)726-1500
Fax: (419)729-8506

Pilkington North America (f.k.a. Libbey-Owens-Ford)
811 Madison Ave., P.O. Box 799, Toledo, Ohio 43697-0799
Phone: (419)247-3715
Fax: (419)247-4932

Sunoco MidAmerica
1819 Woodville Road, Oregon, Ohio 43616
Phone: (419)698-6493
Fax: (419)697-6423

Textileather, Inc.
3729 Twining Street, P.O. Box 875, Toledo, Ohio 43697
Phone: (419)729-3731
Fax: (419)729-7530

Organizations

Black Swamp Conservancy
115 W. Front St., P.O. Box 332, Perrysburg,
Phone: (419)872-5263
Fax: (419)872-8197

ClearWater, Inc.
Phone: (419)874-9435

28985 White Road, Perrysburg, Ohio 43551 Fax: none

Citizens for Buckeye Basin Parks, Inc. Phone: (419)726-2684
1312 Paxton Street, Toledo, Ohio 43608 Fax: none

Conservation Action Project (CAP) Phone: (419)592-9692
75 Joliette Drive, Napoleon, Ohio 43545 Fax: (419)592-3189

Duck and Otter Creeks Partnership Phone: (419)530-8366
UT Lake Erie Center, 6200 Bayshore Dr., Oregon, Ohio 43618 Fax: (419)530-8399

Ducks Unlimited - Great Lakes/Atlantic Regional Office Phone: (734)623-2000
331 Metty Drive, Suite 4, Ann Arbor, Michigan 48103 Fax: (734)623-2035

Farm Bureau – Lucas, Ottawa & Wood Counties Phone: (419)833-8015
230 Main St., P.O. Box 130, Luckey, Ohio 43443 Fax: (419)833-4500

Great Lakes Protection Fund Phone: (847)425-8150
1560 Sherman Ave., Suite 880, Evanston, Illinois 60201 Fax: (847)424-9832

Keep Toledo/Lucas County Beautiful Phone: (419)255-0635
761 Berdan Ave., Toledo, Ohio 43610 Fax: (419)255-4687

Lake Erie Protection Fund - (see Ohio Lake Erie Commission)

Maumee Bay Bacteria Task Force - (see Toledo/Lucas County Health Department)

Maumee RAP Phone: (419)241-9155
P.O. Box 9508, 300 Central Union Plaza, Toledo, Fax: (419)241-9116

Maumee River Regional Storm Water Coalition - (see TMACOG)

Maumee Valley Heritage Corridor Phone: (419)874-5686
510 E. Boundary, Perrysburg, Ohio 43551 Fax: (419)874-2989

The Nature Conservancy
Ohio Field Office Phone: (614)717-2770
6375 Riverside Drive, Suite 50, Dublin, Ohio 43017 Fax: (614)717-2777

Oak Openings Project Office Phone: (419)867-1521
10420 Old State Line Rd., Swanton, Ohio 43558 Fax: (419)867-8049

Natural Areas Stewardship Phone: (419)829-6226
9525 Wolfinger Road, Holland, Ohio 43528 Fax: none

Neighborhood Improvement Foundation of Toledo, Inc. (NIFTI) Phone: (419)244-5998
1114 Washington Street, Toledo, Ohio 43624 Fax: (419)244-9229

Northwest Ohio Pollution Prevention Team Phone: (419)352-8461
347 N. Dunbridge Road, Bowling Green, Ohio 43402 Fax: (419)352-8468

Oak Openings Region Preservation Alliance Phone: (419)385-4089

P.O. Box 183, Holland, Ohio 43528 Fax: none

Ohio Lake Erie Buffer Team - (see Ohio Lake Erie Commission)

Pheasants Forever
Lucas-Wood Chapter Phone: (419)669-4084
12494 Weston Road, Weston, Ohio 43569 Fax: none

Ottawa-Erie-Sandusky Chapter Phone: unknown
24784 Bradner Road, Genoa, Ohio 43430 Fax: none

Point Place Business Association Phone: (419)726-9571
P.O. Box 5074, Toledo, Ohio 43611 Fax: (419)726-1956

Academia

University of Toledo Phone: (419)530-2072
2801 W. Bancroft St., Toledo, Ohio 43606 Fax: (419)530-5840

Bowling Green State University Phone: (419)372-2531
Bowling Green State University, Bowling Green, Ohio 43403 Fax: (419)372-8548

Heidelberg College Phone: (419)448-2000
310 E. Market St., Tiffin, Ohio 44883 Fax: (419)448-2124

Water Quality Laboratory Phone: (419)448-2240
310 E. Market St., Tiffin, Ohio 44883 Fax: (419)448-2345

Medical College of Ohio Phone: (419)383-3000
3000 Arlington Ave., P.O. Box 10008, Toledo, Fax: (419)383-2800
Ohio 43699-0008

Ohio State University Phone: (614)469-5701
2021 Coffey Road, Columbus, Ohio 43210 Fax: (614)292-7432

Owens Community College Phone: (419)661-7000
30335 Oregon Road, P.O. Box 10000, Toledo, Ohio 43699 Fax: (419)661-7664

Lourdes College Phone: (419)885-3211
6832 Convent Blvd. , Sylvania, Ohio 43560 Fax: (419)824-2512

Toledo Public Schools Phone: (419)729-8200
420 E. Manhattan Blvd., Toledo, Ohio 43608 Fax: (419)729-8392

University of Findlay Phone: (800)548-0932
1000 North Main, Findlay, Ohio 45840 Fax: (419)424-4822

Appendix B – Index of Acronyms

This acronym index provides information regarding many of the abbreviations used throughout this document. If an acronym is not explained in an activity description then it should be referenced here.

A

ACOE	Army Corps of Engineers
AOC	Area of Concern
AWQPC	Area Water Quality Planning Council

B

BGSU	Bowling Green State University
BMP	Best Management Practice
BOD	Biological Oxygen Demand
BUSTR	Bureau of Underground Storage Tank Regulation
BWQR	

C

CAP	Conservation Action Project
CDD	Construction and Demolition Debris (Landfill)
CDF	Confined Disposal Facility
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
COSI	Center of Science and Industry
COT	City of Toledo
CREP	Conservation Reserve Enhancement Program
CRP	Conservation Reserve Program
CSO	Combined Sewer Overflow
CUSTI	Certified Underground Storage Tank Inspector

D

DNAPL	Dense Non-aqueous Phase Liquid
DNR	Department of Natural Resources

E

EE/CA	Engineering Evaluation/Cost Analysis
EIS	Environmental Impact Statement
EMA	Emergency Management Agency
EPA	Environmental Protection Agency
ESA	Environmental Site Assessment

F

FEMA	Federal Emergency Management Agency
FFA	Future Farmers of America
FSA	Farm Services Agency

G

GIS	Geographical Information Systems
GLC	Great Lakes Commission
GLNPO	Great Lakes National Program Office
GLPF	Great Lakes Protection Fund
GLWQA	Great Lakes Water Quality Agreement
GM	General Motors

GREEN	Global Rivers Environmental Education Network

H

I

IJC	International Joint Commission

J

K

L

LAMP	Lake Erie Management Plan
LEPF	Lake Erie Protection Fund

M

MAOC	Maumee Area of Concern
MCO	Medical College of Ohio
MEC	Midwest Environmental Consultants
MGD	Million Gallons/Day
MDEQ	Michigan Department of Environmental Quality
MDNR	Michigan Department of Natural Resources
MRIC	Maumee RAP Implementation Committee
MRRSWC	Maumee River Regional Storm Water Coalition
MS4	Municipal Separate Storm Sewer System

N

NGO	Non-governmental Organization
NIFTI	Neighborhood Improvement Foundation of Toledo, Inc.
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
NRCS	NRCS (f.k.a. USDA - Soil Conservation Service)
NWI	National Wetlands Inventory

O

ODA	Ohio Department of Agriculture
ODNR	Ohio Department of Natural Resources
ODOT	Ohio Department of Transportation
OEEF	Ohio Environmental Education Fund
O/M	Operation/Maintenance
OORPA	Oak Openings Region Preservation Alliance
OPP	Office of Pollution Prevention
OPUS	Ohio Partnership for Urban Streams
ORKA	Ottawa River Kleanup Association
ORR-Team	Ottawa River Remediation Team
OSU	Ohio State University
OTTO	Ohio Technology Transfer Organization

P

PAH	Polyaromatic Hydrocarbons
PCB	Polychlorinated Biphenyls
PRP	Potentially Responsible Party
PTI	Permits to Install

Q

R

RAP	Remedial Action Plan
RCRA	Resource Conservation & Recovery Act
RD/RA	Remedial Design/Remedial Action
RI/FS	Remedial Investigation/ Feasibility Study

S

SACM	Superfund Accelerated Cleanup Model
SCS	Soil Conservation Service (currently USDA-NRCS)
SEP	Supplemental Environmental Project
SSES	Sewer System Evaluation Survey
SSI	Screening Site Investigation
SSO	Sanitary Sewer Overflow
SWCD	Soil and Water Conservation District

T

TASD	Toledo Area Sanitary District
TCLP	Toxicity Characteristic Leaching Procedure
TESD	Toledo Environmental Services Division
TLCPA	Toledo-Lucas County Port Authority
TMACOG	Toledo Metropolitan Area Council of Governments
TMDL	Total Maximum Daily Load Limits
TPH	Total Petroleum Hydrocarbons
TSCA	Toxic Substance Control Act

U

UAC	Urban Affairs Center
UAW	United Auto Workers
USDA	United States Department of Agriculture
US EPA	United States Environmental Protection Agency
US F&W	United States Fish and Wildlife Service
USGS	United States Geological Survey
UST	Underground Storage Tank
UT	University of Toledo

V

VAP	Voluntary Action Program

W

WWTP	Waste Water Treatment Plant

X

Y

Z