

# Maumee River

Volume 1 Issue 1

Remedial Action Plan Newsletter

January 1990

## Maumee River Remedial Action Plan

The Lower Maumee River harbor and nearshore area is one of the 42 Areas of Concern identified by the International Joint Commission (IJC) in 1985. These are locations in the Great Lakes where water pollution problems are so severe that they impair the beneficial uses of the local waters.

The Maumee River Area of Concern has been identified as the area from the Bowling Green water intake to the Maumee Bay, including the entire bay and nearshore waters from the Michigan state line to Crane Creek State Park. The area includes the direct drainage to the above waters that are within Lucas, Ottawa and Wood Counties including the Ottawa River (Ten Mile Creek), and Swan, Duck, Otter, Cedar, Grassy and Crane creeks.

As a result of the 1985 report prepared by the Water Quality Board Report of the IJC, the eight Great Lakes States and the Province of Ontario committed themselves, in cooperation with their federal governments, to develop Remedial Action Plans (RAPs) to restore beneficial uses in the Areas of Concern. Each plan will identify specific measures to control pollution, to correct existing problems and to restore beneficial uses. These measures must identify which entities are responsible for them, in what time frame they are to be instituted and by when they should succeed in their design goal. The following provides an outline of the objectives to be addressed:

1. Define the current environmental conditions, including a definition of the beneficial uses that are impaired and geographic extent of area affected;

2. Identify the beneficial uses that are impaired and to what degree;

3. Describe the causes of the use impairment, identify known sources of pollutants of concern and evaluate other possible sources;

4. Evaluate the effectiveness of pollution control measures in place;

5. Identify remedial actions necessary to resolve the water quality problems and restore beneficial uses;

6. Develop a schedule for completing remedial actions which will achieve established water quality and use goals;

7. Identify jurisdictions, agencies, and other entities responsible for implementing each remedial action;

8. Develop a process for evaluating the implementation and effectiveness of the remedial action program;

9. Develop a water quality monitoring program that will be used to track effectiveness of the remedial action implementation program and confirmation that the water quality uses have been restored.

The Toledo Metropolitan Area Council of Governments (TMACOG) is cooperating with Ohio EPA to prepare the Remedial Action Plan for the Maumee River. TMACOG has been charged with three primary tasks:

1. Prepare a revised and improved Investigation Report that documents pollution problems and sources.

2. Support Ohio EPA in development of the actual Remedial Action Plan.

3. Conduct a program of extensive public involvement, particularly in preparation of the Investigation Report.

Public involvement is the key to the success of the Remedial Action Plan. TMACOG involves the public by identifying stakeholders and implementors. These are the individuals, groups, entities, corporations, jurisdictions and agencies which are linked to the river, interested or will be involved in implementing the Remedial Action Plan.

The final Remedial Action Plan will be developed by Ohio EPA. It then will be presented to the U.S. EPA, Great Lakes National Program Office and the Water Quality Board of the International Joint Commission for review and comment.



## Toxic Sediments

The sediments in the Maumee River are classified as either moderately or heavily polluted due to heavy metals from Rossford to the Maumee Bay. The highest concentrations of most metals are found at or slightly above the mouth near Toledo's Wastewater Treatment Plant to the vicinity of the Norfolk Southern Railroad Bridge. Metals of concern include: chromium, copper, lead, nickel, zinc, manganese, cadmium and arsenic.

Arsenic seems to be the most significant problem above Miami Street at Rossford. Swan Creek has poor water quality from its mouth to four miles upstream, with heavy metals having the greatest impact between Hawley Street and Collingwood Boulevard. The degradation of Otter Creek is related directly to arsenic leaking from settling ponds created over thirty years ago. This creek has been known locally as an "industrial sewer" for over twenty years with oil-soaked banks and nickel and cyanide being detected in its waters.

Organic chemicals detected in the sediments of the Area of Concern include polynuclear aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs) and phthalates. Phthalates and PAHs have been detected in the Maumee River shipping channel. The

PAH concentrations are at a level where they could pose a possible problem and must be of concern.

Impacting water quality on the Ot-tawa River are the wall-to-wall dumps once sited in the floodplains which leak solvents, conventional pollutants and organic priority pollutants. The Dura Dump leachate, for example, contains high BOD, COD and organics, among which PCBs are included. The City of Toledo has posted the area advising persons to avoid contact with the water, sediments and fish.

Bottom-dwelling organisms avoid or cannot exist in areas which are highly contaminated with toxic compounds. They may however survive in areas where low levels of toxicants are found. This means that they are exposed constantly to these contaminants throughout their life spans. After accumulating toxicants, these organisms, if eaten, are the starting point for toxicants to move up the food chain to fish, then on to fish-eating birds and/or humans where they may bioaccumulate.

Fortunately, studies of Toledo Harbor sediments have not shown sediment bound pesticides at levels high enough to arouse concern. However, there are other categories of toxics which have not been studied, including dioxins and furans.

## Nitrate Warnings on the Maumee

When the nitrate level in a municipal drinking water supply is above 10 milligrams per liter (mg/l) for two days in a row, the community which owns the water supply is required to issue a warning to its consumers. In the RAP Area, the communities of Bowling Green and Waterville are particularly susceptible to elevated nitrate levels because they draw their water directly from the Maumee River. Warnings are issued because nitrates are harmful to certain groups of people: infants less than six months old, the elderly and people restricted to liquid diets. People who fall into one of these groups should drink bottled water until the nitrate warning is lifted.

Nitrate warnings have been common occurrences for Bowling Green and Waterville for a number of years, especially in the Spring and Fall. The rest of the year, nitrate concentrations generally are below 10 mg/l.

The other two major public water supplies in the RAP Area are the City of Toledo and the City of Oregon, both of which draw water from Lake Erie off the Oregon shore. High nitrate levels for Lake Erie water sources are unusual because of the dilution the Lake provides. However, in April 1989, the City of Oregon issued a nitrate warning when nitrate levels exceeded 12 mg/l.

Bowling Green is combating its nitrate problem by constructing a 50-day water reservoir. Water will be stored when it is plentiful and low in nitrates. The stored water will be used during times of drought or high nitrate levels.

The long-term solution to the nitrate problem is to reduce/control the source. Nitrogen is an essential component of fertilizer and it is needed on the many farms upstream. Changes in agricultural practices can reduce the amount of nitrates which enter the river. These changes include: increasing the use of conservation tillage and careful fertilizer management by applying only the amount of fertilizer that is required to produce the crop being grown.

The source of nitrates is agricultural land in the RAP Area, but the Maumee Basin is much larger than just Lucas and Wood Counties: it includes most of Northwest Ohio, and parts of Michigan and Indiana as well. Lowering the nitrate levels in the Maumee means reducing the sources from the entire basin.

## Whitehouse Taps In

The Village of Whitehouse has completed its sewer interceptor and is about to tap into the Maumee River Wastewater Treatment Plant which is operated by Lucas County. Whitehouse outgrew its own sewage treatment plant several years ago. There was more sewage produced than the treatment plant could handle and the average flow was more than the plant's design capacity. As a result, the plant's effluent did not meet discharge standards and was a serious pollutant in Swan Creek.

The Village's problem was particularly severe during wet weather when rain water would infiltrate the sanitary sewers. Under these conditions, the flow in excess of the treatment plant's capacity had to be bypassed untreated. The excess flow, if it went through the plant, would upset the treatment pro-

cess and prevent the system from working.

The interceptor connection consists of a pumping station and 27,000 feet of force main, which were built at a cost \$1.35 million. With completion of the new interceptor, Whitehouse will be able to receive sewage treatment services from Lucas County. The Maumee River Wastewater Treatment Plant, operated by Lucas County, originally was designed to handle flow from Whitehouse. This plant discharges to the Maumee River and has a good operating record. The Whitehouse sewage treatment plant will be abandoned and its discharge to Swan Creek (via Disher Ditch) will be completely eliminated. Its elimination will be an important step toward improving the water quality of Swan Creek.



# Maumee River RAP Advisory Committee

Strong public involvement is the key to the successful development of the Maumee River Remedial Action Plan. Only through a consensus of goals, needs and ideas can a realistic, implementable plan for the restoration of all beneficial uses be developed.

The Maumee River Remedial Action Plan Advisory Committee (RAPAC) was established in January 1988. The RAPAC is an ad hoc committee composed of individuals representing the Areawide Water Quality Planning Council, various organizations and individuals who are either linked to or have an interest in the water quality of the Maumee River and organizations, agencies, corporations or individuals who will be responsible for implementing the RAP.

The recent addition of the Fish and Wildlife Subcommittee to the RAP process has brought the number of technical, issue-oriented subcommittees under the RAPAC to nine. They are:

1. **Steering Committee** - provide overall subcommittee support and process final recommendations,

2. **Water Quality and Water Uses** - recommend ways to improve overall water quality and define the future desired conditions for the Maumee River,

3. **Dredge Disposal** - study the impact of dredging material from the shipping channel and where it will be deposited,

4. **Landfills, Dumps, Pits, Ponds and Lagoons** - develop recommendations to address all active or closed waste disposal sites in the AOC,

5. **Agricultural Run-off** - recommend actions to lessen the effect of agricultural activity on area streams,

6. **Public and Industrial Dischargers** - investigate the water quality impact of point and nonpoint sources of pollution,

7. **Home Sewage Disposal** - recommend policies to make home treatment systems less of an aesthetic and environmental nuisance,

8. **Education Committee** - disseminate information to the public on water quality and the RAP process and

9. **Fish and Wildlife** - develop recommendations for wetlands protection, managing habitats of endangered species and fisheries management.

Up to now, the subcommittees have concentrated on preparing materials for the problem identification portion of the RAP, "the Investigation Report". Their next function will be to establish the future desired water quality goals of the Maumee River AOC and to develop recommendations, to be submitted to Ohio EPA, for remedial actions which will make the desired future goals a reality. Ohio EPA will use the recommendations to develop the final set of remedial actions which will resolve the water quality problems and restore beneficial uses.

## Fish Contaminate Levels: An Update

Toxic substances in Great Lakes fish have been a popular topic for news stories in the past year, although the extent of contamination and the areas affected generally have remained unclear.

Lake Erie has escaped most of the contaminant problems experienced in Lakes Michigan, Huron and Ontario. Although four industrialized harbors on the lake have been designated "Areas of Concern", fish from the open waters off Lake Erie are considered to be among the cleanest in the Great Lakes area.

Still, certain toxic substances are present in fish at low levels. In recent years, public attention has focused on dioxin, PCBs and mercury. Other chemicals, such as DDT, dieldrin and chlordane have been found, but only in minute amounts, and thus have raised little concern especially since their use in the United States has been banned.

### CONTAMINANTS OF GREATEST CONCERN

Dioxin is the name for a class of 75

toxic chemicals, but the most toxic form, 2,3,7,8-TCDD, causes the greatest concern. The substance is formed as a byproduct in the manufacturing of the herbicide 2,4,5-T. There is very little agreement currently on a safe level for dioxin in fish to be consumed by humans. Ontario issues consumption guidelines for fish exceeding 20 parts per trillion (ppt) of dioxin. The U.S. has no uniform guidelines, although the United States Environmental Protection Agency (USEPA) Region V has set trigger values of 5 ppt in fish filets and 10 ppt for whole fish for 2,3,7,8-TCDD.

PCBs are highly stable man-made substances once used as fire retardants, plasticizers and in electrical insulating fluids. Although no longer manufactured in the United States, the substances are still leaking into the environment from landfills and broken electrical equipment and are being transported by water runoff. Both the U.S. and Ontario issue consumption guidelines for fish having more than 2.0 parts per million (ppm) in the edible portion.

Mercury is the only substance that actually provoked public health precautions by Ohio in the open waters of Lake Erie prior to 1987. Mercury contamination in walleye and smallmouth, stemming from the operation of chlor-alkali plants on the St. Clair River, resulted in a temporary moratorium on sport and commercial fishing for these species in 1970. The U.S. Food and Drug Administration has set a tolerance limit of 1.0 ppm for mercury in fish; Ontario's tolerance limit is 0.5 ppm for fish consumed by children and women of childbearing age, with precautions for other adults for fish containing 1.0 to 1.5 ppm of mercury in the edible portion.

Organic substances like PCBs, DDT and dioxin are concentrated in fatty tissues, so careful trimming during fish cleaning and cooking methods which render the oil can reduce the amounts of these contaminants in the fish you eat. Mercury, on the other hand, is found uniformly in all tissues.

continued on page 4...



## SUMMARY AND OUTLOOK

Although public concern has been raised over dioxin and PCBs in Great Lakes fish in recent years, contamination of fish from Lake Erie's open waters has been very slight. The contaminant providing the most reason for concern in Lake Erie continues to be mercury, an old enemy which still hasn't been beaten completely. But as mentioned above, only the larger specimens of a few species from particular areas contain mercury at levels which might cause concern.

Fortunately, the trend in fish contaminants is downward for nearly all Lake Erie species. Contaminant levels have dropped significantly since the 1970s and it is reasonable to expect that contamination will continue to decline in the future.

It should be understood that health advisories are recommendations, not bans on consumption. The Ohio Department of Health has issued an advisory against eating channel catfish and carp from Lake Erie.

Ontario's advisories are more specific. Their government recommends that children under 15 years of age and women of childbearing age should not eat fish containing over 0.5 ppm mercury, 2.0 ppm PCBs, 5.0 ppm DDT, 0.1 ppm mirex or 20 ppt dioxin. Other adults are advised to eat no more than 0.5 pound per week of fish containing 0.5 to 1.0 ppm mercury and no more than 0.3 pound per week of fish containing 1.0 to 1.5 ppm mercury. Fish containing organic contaminants above the

guidelines listed for children and young women should be limited to one or two meals per week.

## How Can You Become Involved?

Everyone is encouraged to participate in the Maumee River RAP Process. There are several ways you can become part of it:

- Attend Advisory Council Meetings.
- Become familiar with the problems affecting the Maumee River, Lake Erie and the Great Lakes.
- Contact the persons representing State and local groups and the local citizens who already participate in the RAP Advisory Committee and/or Subcommittees and communicate your ideas to them.
- Participate in the Subcommittees by offering your knowledge of the Maumee River and Lake Erie.
- Write letters to your local newspaper editor or state and local officials to let them know your opinions.

For more information or to volunteer your time you may contact the persons listed below.

## How Will This Newsletter Serve You?

The Maumee River RAP Newsletter will serve to keep the organizations and citizens up-to-date on the progress of RAP activities in the area. The Newsletter will provide progress reports and discussions of area cleanup as well as federal and state environmental protection agency programs and activities. The Newsletter will provide a forum to communicate any of the community's issues concerning the RAP. It will be published four times a year and can be received in the mail (if you are on the Maumee River RAP mailing list) or picked up at either the Ohio EPA District Office in Bowling Green or TMA-COG Office in Toledo.

### For Further Information Contact:

**Larry M. Antosch**  
Maumee River RAP Coordinator  
Ohio EPA, DWQP&A  
P.O. Box 1049, 1800 WaterMark Dr.  
Columbus, Ohio 43266-0149  
(614) 644-2131

**Kurt Erichsen or Mike Ringler**  
Toledo Metropolitan Area Council  
of Governments  
123 Michigan Street  
Toledo, Ohio 43624  
(419) 241-9155

# Maumee River

A Publication of the Maumee River  
Remedial Action Plan Advisory  
Committee

This is a Cooperative Effort with Ohio  
EPA's Public Interest Center


Richard F. Celeste, Governor  
Richard L. Shank, Director

# tmacog

TOLEDO METROPOLITAN AREA COUNCIL OF GOVERNMENTS  
123 Michigan Street / Toledo, Ohio 43624

Non-Profit Org.  
U.S. Postage  
PAID  
Toledo, Ohio  
Permit No. 79





# Maumee River

Issue #2

Remedial Action Plan Newsletter

May, 1990

## Swan Creek Clean Up: A Success Story

Last October, Swan Creek found hundreds of friends. Seven hundred seventy-nine volunteers turned out at Highland Park and removed 164 tons of trash from the creek and its banks. The volunteers covered Swan Creek from Eastgate Road to the mouth, removing grocery carts, tires, furniture, building materials, appliances, office equipment, barrels, kitchen cabinets, sinks, bikes, motorcycles, pipes, bed springs, styrofoam, car parts, many bottles and cans, and broken glass.

The clean up project was a joint effort of Clear Water, Inc. and the Neighborhood Improvement Foundation of Toledo (NIFTI). These organizations spearheaded the event and made numerous contacts to organize the event.

And out came the National Guard; Marine Safety Office, Coast Guard; Toledo River Gang (a group of canoeing enthusiasts), churches, schools, unions, boy and girl scouts, youth clubs, civic organizations, city employees and divisions, and professional associations.

Food for the workers, rubber gloves, decontamination suits, wash down units, trucks, canoes and many other things needed for the activity, all were donated by businesses wanting to be a part of the clean up. Swan Creek, indeed, had found some friends.

Much remains to be done to continue the clean up. Clearing 26 major log jams is a high priority. The logs were too large to be removed as part of this clean up. On the advice of experts, the planning committee decided to wait until a qualified crew could remove the jams safely. NIFTI intends to get such a crew and find an appropriate disposal site for the debris.

The clean up was nucleus of citywide interest to continue the effort for the protection and preservation of Swan Creek. The public sees a need for health and pollution codes to be stringently enforced. Dumping of industrial chemicals and sludges must be stopped. Household dumping must, also be curbed. Construction of the new four mile pipeline storage of the combined sewer overflow regulators must stay on schedule.

NIFTI and Clear Water plan on making the clean up effort an annual event. The aim is to return Swan Creek to the great natural resource and beautiful stream that it can be in the heart of the City of Toledo. Early planning is also underway for Ottawa River and Buckeye Basin clean-ups.

### What is a RAP?

Forty-two areas around the Great Lakes have serious enough water quality problems to be declared "Areas of Concern," or "AOCs" for short.

That designation comes from the International Joint Commission, the agency which oversees the Great Lakes Water Quality Agreement. The Lower Maumee River and Maumee Bay are an Area of Concern because beneficial uses of the water are impaired. That basically means that because of water quality problems, you can't swim in the streams, and you shouldn't eat some of the fish.

The RAP — Remedial Action Plan — is the first step toward cleaning up the Maumee. The Maumee RAP is being prepared through a partnership of TMACOG (Toledo Metropolitan Area Council of Governments) Ohio EPA, and the RAP Advisory Committee. The Advisory Committee is made up of concerned citizens and organizations, State agencies, and representatives of all the communities in the RAP Area.

That area takes in the Maumee as far upstream as the Bowling Green water intake, and covers most of Lucas County, the northern third of Wood County, and the northwest corner of Ottawa County.

The first step was to issue a detailed report on present water quality — both what we know, and what we need to find out. This step has been completed. The second phase is to identify what needs to be done to solve each of the many water quality problems in our area, who needs to do it, how much it will cost, and where the money should come from.

The purpose of this newsletter is to inform concerned citizens of the problems, and what needs to be done. You can help, and your input is welcome. See the box on page 4 for more information.



## More Dumps Found!

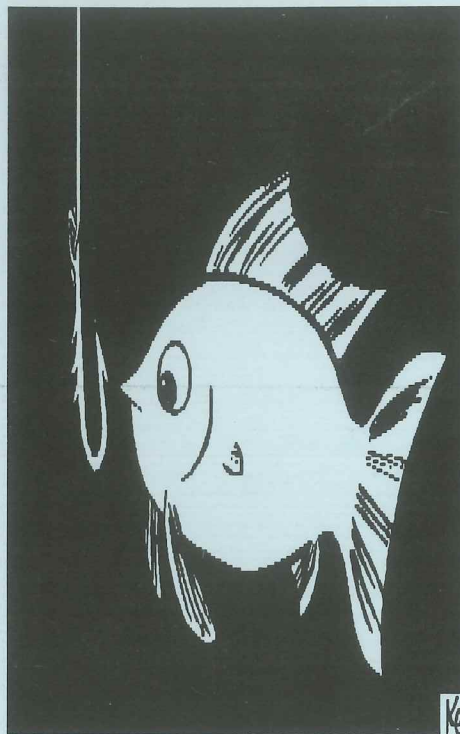
The Landfill and Dumps Subcommittee of the RAP Advisory Committee just knew that more dumps would turn up. It isn't that the investigative work to locate dumps was not thorough. Thirty days after the first printing of the Investigation Report, a biggie turned up. Polynuclear Aromatic Hydrocarbons (or coal tars) at a depth of 6 to 15 feet deep were found near the site of the Millard Avenue overpass west of Duck Creek.

It is speculated that the hazardous waste (PAHs) at this site could be from the Coal Gas Reservoir once located at Front and York Streets. A US EPA report warns that coal tar wastes can usually be found buried not far from demolished manufactured gas facilities.

A few months later a report came in to check out South Avenue at Woodsdale Avenue near Bethel Lutheran Church. The church office confirmed that it had built on a dumpsite in 1953. This site is also the location of the City of Toledo/Corps of Engineers flood project for the north bank of Swan Creek between Detroit and South Avenues. The wastes are demolition and household wastes from around the neighborhood.

Just recently a fellow who hauled refuse between 1945 and 1950 called to ask if we knew about the various dumpsites along Swan Creek. We invited him in to check our lists. He identified a few more and confirmed those listed. The new dumps all were low areas (floodplains) along Swan Creek:

- 1401 to 1463 Western Avenue, household and commercial wastes, closed in 1930.
- Chester Street to the creek, household and commercial wastes, operated from 1948 to 1955.
- Louie Street to the creek, household and commercial wastes, operated from 1920 to 1955.
- South side of Swan Creek and west of Champion Street to the creek, household and commercial wastes, about 10 acres, operated from 1945 to 1950.
- And he remembered taking wastes to a five acre site on the west side of Irwin Road north of Angola Road from 1948 to 1952. This is sand country and some wet prairies.



Our hauler wants to join the Dumps and Landfills Subcommittee to help become a part of the solution. We welcome him!

### Environmental Education on Swan Creek

From Waite to Swanton, schools along Swan Creek are teaching students about the ecology of the creek. Twelve schools — mostly high schools — Clean Water Inc., and the RAP Advisory Committee are working together to teach students first hand about water quality.

Students from science classes and clubs will study the creek at fifteen sites — each school studying a different location. The curriculum involves ten class periods, followed by a two-week program for the students to test the water quality and analyze the results.

Following the study and monitoring, the program will culminate with a Student Congress on May 18th. The students from all the schools will meet and present their findings.

The program started out on a shoestring, with Clear Water securing funding the supplies and equipment: Water Quality Test Kits (\$7,000), the computer tie-in with the University of Michigan (\$700), and Field Manuals (\$360). TMACOG is coordinating the meetings to organize the project.

A Swan Creek Education Steering Committee, comprised of educators from the high schools and the University of

Toledo, and environmental professionals, has been meeting since last July. Dr. Peter Fraleigh, an aquatic biologist with the University of Toledo who chairs the RAP Water Quality and Water Uses Subcommittee, is co-chairing the Steering Committee with June M. Brown, Director of Energy Management/Environment for TMACOG and Secretary of the Board of Trustees of Clear Water, Inc.

The students aren't the only ones who are learning. The project has brought teachers together with environmental professionals, planners and scientists, who are providing the technical details of water quality monitoring and stream biology. Before the students go out to the creek, the teachers and advisors will meet in a workshop to finalize the details of the monitoring program.

The education program is planned as a continuing part of each school's curriculum. Sustaining the program on a yearly basis is important. The steering committee is considering how to expand the education program to include the other watersheds in our area: the Ottawa River, Otter Creek and Grassy Creek. These streams also have severe pollution problems.

The Schools participating are: Rogers, Waite, Libbey, Bowsher, Macomber, Maumee, Anthony Wayne, Springfield, and Swanton. There is one Junior High: Brynedale; and two private schools:

## HOT LINES

### Ohio Department of Health

#### Lake Erie Fish Advisories

1-800-282-0546

For current information on what Lake Erie fish you should and should not eat. At publication date, there is an advisory on Carp and Channel Catfish due to PCB contamination. Other Lake Erie fish are safe to eat.

### Ohio EPA

#### Environmental Hotline

1-800-686-6930

For reporting pollution problems to Ohio EPA



Notre Dame Academy and Maumee Valley Country Day School.

## I-280 Taps In

Ohio Turnpike Interchange 5 at Interstate 280 is one of the most heavily used interchanges in the state. With all that traffic, it's a good place to build restaurants, truck stops, motels, and mobile-home parks. Unfortunately, there was no sanitary sewer system in the area — but development went ahead.

Since there was no public sewage system, each motel, each restaurant, and truck stop built its own treatment plant. Between US 20 and Ayres Road, there were 23 of these "package" plants. Some were well maintained, but many were not. These plants were usually operated by personnel with little or no training, and were frequently neglected. The result: 350,000 gallons per day of untreated or incompletely treated sewage going into local streams.

In late 1989, Wood County completed the sewer extension along Interstate 280, a \$4.2 million project, built without State or Federal money. This sewer project covers I-280 between Truman and Latcha Roads, and eliminated 12 package plants. Another project around SR 795/Lemoyne Road took out three more plants.

There are hundreds of other package plants around northwest Ohio. The Interchange 5 area was one place where

there were so many package plants so close together to cause a severe pollution problem. Eliminating them was an important step toward cleaning up Crane and Cedar Creeks.

## Toxic Sediments

Persistent toxics in stream sediment is a major concern in the Lower Maumee River Basin. Sediment contamination is one of the primary reasons the lower Maumee was designated as an Area of Concern. The heavy metals and organic chemicals bioaccumulate, or are suspected of causing cancer in aquatic organisms.

The Maumee River sediments are moderately to heavily polluted for heavy metals from Rossford to the Maumee Bay, with the highest concentrations at or slightly above the mouth. The metals of found in the sediments include: chromium, copper, lead, nickel, zinc, manganese, cadmium and arsenic.

From Rossford downstream, and into the Bay, the metals show up in Perch and Channel Catfish. In Swan Creek the heavy metals are worst between Hawley and Collingwood. Otter Creek is severely impacted by arsenic leaking from settling ponds created over thirty years ago. This creek has been a known "industrial sewer" for over twenty years, with oil soaked banks, and nickel, arsenic, and cyanide in its waters.

Organic chemicals in the sediments include polynuclear aromatic hydrocar-

bons (PAHs), polychlorinated biphenyls (PCBs) and phthalates. There are more suspected sources of these chemicals than definitely proven sources. Leachate from the Dura dump includes PCBs, metals, and organic chemicals. The other abandoned dumps in the floodplain of the Ottawa River may well be discharging these and other toxics. The City of Toledo has posted the area advising persons to avoid contact with the water, sediments and fish.

Bottom dwelling fish cannot exist in highly contaminated areas. They may, however, survive with lower levels of toxics. This means that they are exposed throughout their lives, and the contaminants accumulate in their bodies. When these fish are eaten — by other fish, or by humans — the contaminants start to move up through the food chain.

Most of the studies of Toledo Harbor sediments have not tested for pesticides. Based on the few samples taken to date, pesticides are not present at levels high enough to arouse concern.

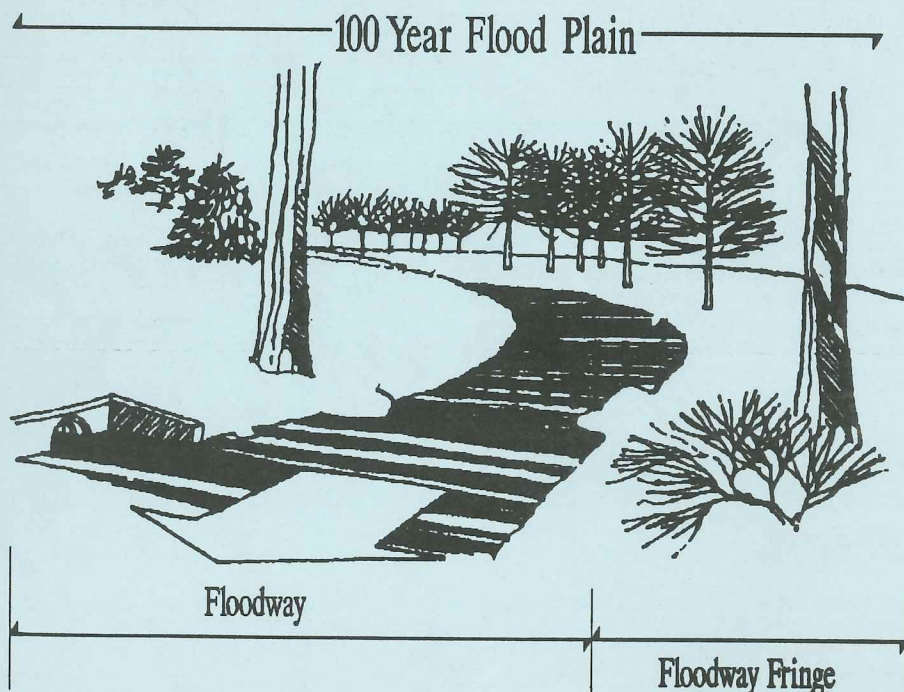
## Flood Plains: Vital to Flood Protection

Flood plains are a natural part of river systems that store water during storms. This storage reduces flooding, protecting other low-lying land from damage. Filling of flood plains reduces the storage, and increases flood damage.

The National Flood Insurance Program allows some filling of part of the flood plain. The 100 year flood plain is divided into a *floodway* and a *floodway fringe*. The *floodway* is the stream plus the flood plain area needed to carry a 100 year flood without more than a foot increase in water height. The remainder of the flood plain is the *floodway fringe*. The fringe can be filled only after obtaining a permit from the County. This policy balances floodway development against flood hazard.

The floodway fringe is particularly important in our area because of the flatness. Even before loss of floodplain, many of our streams cannot carry a 100 year storm. Filling of the floodway fringe should be tightly restricted. This will also protect riparian wetlands, and the wildlife and water quality benefits they provide.

The Lucas County Commissioners are currently considering a resolution to prohibit future floodplain filling. Passing this resolution will help protect other landowners from flooding, and preserve natural areas along our streams.





## Toledo Looks at Swan Creek

A committee of officials from departments of the City of Toledo, has been meeting throughout the past year to review the conditions of Swan Creek and make recommendations to the Mayor and Council. The Swan Creek Task Force has issued its findings to help maintain Swan Creek and protect it from further degradation.

Develop a Non-tidal Wetlands Protection Ordinance. The Law Department of the Toledo City Parks Department of Natural Resources is preparing a Toledo Ordinance to protect wetlands from further encroachment. The Task Force recommends the same protection should apply throughout Lucas County, and any community which impacts Swan Creek.

- Minimum maintenance standards for Swan Creek. The Department of Public Utilities has prepared a plan and cost estimates for basic maintenance service: removing log jams, litter, and debris.
- Reduce combined sewer discharges. Continue with the multi-phase project to build sewage storage tunnels along Swan Creek, and reduce bypassing. The first two sections of tunnel are now under construction.
- Enforce illegal dumping ordinances. Not enough effort is given to catching people who dump trash into the stream and onto the banks.

- The Fish and Wildlife subcommittee is considering these recommendations for inclusion in the Remedial Action Plan.

The Task Force considered dredging Swan Creek to create a channel from the mouth at the Maumee River to the dam at South Avenue. This would improve flow through the creek, and help prevent it from getting stagnant. It would also deepen the stream, and improve access for boating. And finally it would remove many years' accumulation of sludge from the bottom.

The Task Force recommended pursuing this project when the combined sewer project is complete, and the sources of sludge have been substantially reduced. As the dredging work would cost nearly \$1 million, outside funding will be needed to pay for it.

### Riga Township Low-Level Radioactive Waste Dump

Riga Township in southeast Michigan is the site selected for a proposed low-level radioactive waste dump. Michigan and Ohio are part of the Midwest Compact of states formed to deal with radioactive waste.

The site has caused an uproar in southern Michigan as well as northwestern Ohio. The Institute of Social Research of the University of Michigan has measured social and cultural impacts for such a site to reach a radius of 30 miles from the installation. Many communities with this potentially

affected area have passed resolutions in opposition to the site.

It would affect the RAP area if proposed site comes to pass. More than half of Riga Township is in the headwaters of the Ottawa River watershed. Many area experts oppose this site being placed in this area because of the ecological and hydrological implications. However, since the actual site would be outside the RAP area, it will not be formally addressed in the recommendations. The RAP Newsletter gives us an opportunity to keep you updated about this on-going debate.

## FOR MORE INFORMATION

**Ohio EPA**

**614-644-2131**

Larry M. Antosch  
Maumee RAP Coordinator  
Ohio EPA Div. WQP&A  
PO Box 1048, 1800 Watermark  
Columbus, Ohio 43266-0149

**TMACOG**

**419-241-9155**

Kurt Erichsen,  
Judy Jones, or  
June Brown  
123 North Michigan Street  
Toledo, Ohio 43624-1996



Toledo Metropolitan Area Council of Governments  
123 North Michigan Street  
Toledo, Ohio 43624-1996

**Non-Profit Org.**  
**U.S. Postage**  
**PAID**  
**Toledo, Ohio**  
**Permit No. 79**

# Maumee River

This Publication is a joint effort of the Maumee River Remedial Action Plan Advisory Committee, Ohio EPA, and the Toledo Metropolitan Area Council of Governments.





# Maumee River

Issue #3

Remedial Action Plan Newsletter

July, 1990

## Combined Sewers: A Big Problem

Pollution from many sources contaminates the Maumee River and its tributaries, but three types are particular problems. Farm runoff, contaminated stream sediments, and combined sewer overflows are why the International Joint Commission has designated the Maumee an Area of Concern.

This issue of the RAP Newsletter focuses on combined sewer overflows, or "CSOs". What are they, why are they a problem, and what's being done?

### How Combined Sewers Happened

Ever since their founding, Toledo and the neighboring cities have needed drainage to carry away rain water, and sewers were built. The communities grew, and with the in-

roduction of indoor plumbing in the late 19th century, people had to get rid of the sewage. It was easy — just drain it into the sewer. Together, the rain water and sewage went to the Maumee or Ottawa Rivers, or Swan

Creek. These sewers are still in use, and since they collect both storm and sanitary flow, they are called "combined sewers." Around 1920 the Ohio Department of Health required cities to catch the flow from these

## What is a RAP?

Forty-two areas around the Great Lakes are seriously polluted, and have been declared *Areas of Concern*, or "AOCs".

That designation comes from the International Joint Commission, which oversees the Great Lakes Water Quality Agreement. The Lower Maumee River and Maumee Bay are an Area of Concern because you can't swim in the streams, and you shouldn't eat some of the fish.

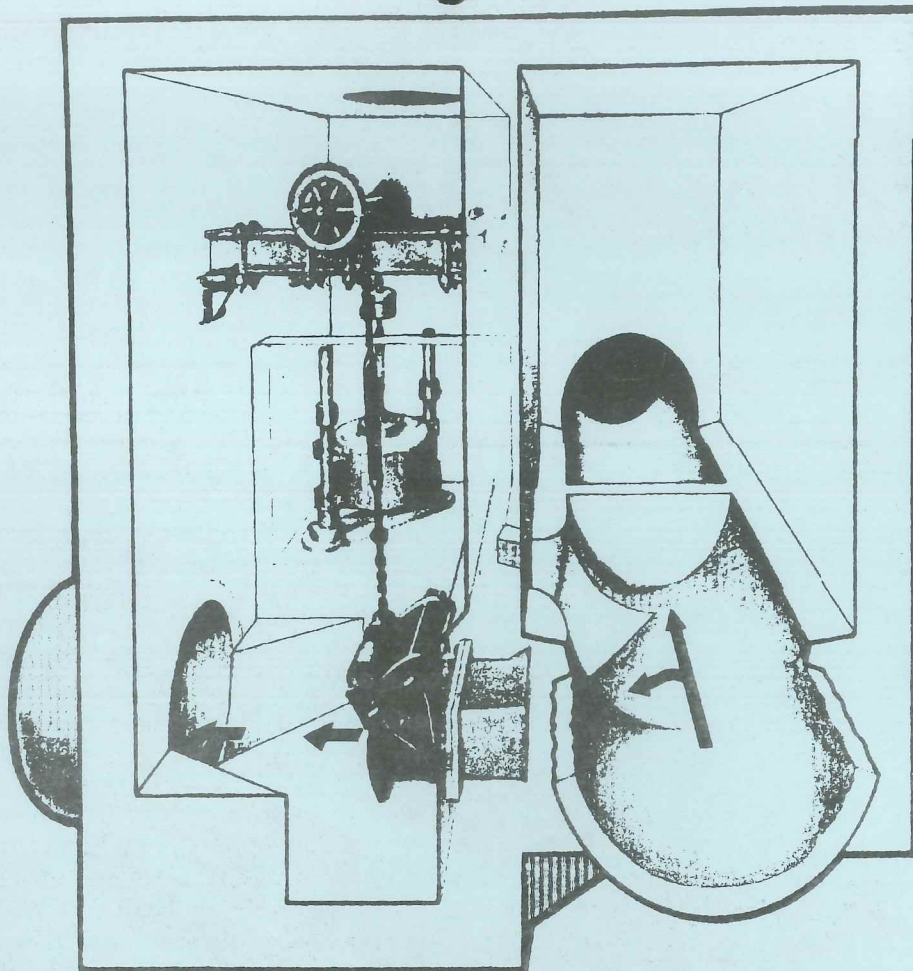
The RAP — *Remedial Action Plan* — is a step toward cleaning up the Maumee. The Maumee RAP is being prepared through a partnership of TMACOG (Toledo Metropolitan Area Council of Governments) Ohio EPA, and the RAP Advisory Committee. The Advisory Committee consists of concerned citizens and organizations, State agencies, and representatives of all the communities in the RAP Area.

That area takes in the Maumee as far upstream as the Bowling Green water intake, and covers most of Lucas County, the northern third of Wood County, and the northwest corner of Ottawa County.

The first step was to issue a detailed report on present water quality — both what we know, and what we need to find out. This step has been completed. The second phase is to list what needs to be done to clean up the pollution from the many sources, who needs to do it, how much it will cost, and where the money should come from.

The purpose of this newsletter is to inform the public about the problems, and what needs to be done. You can help, and your input is welcome. See the box on page 4 for more information.





*A combined sewage regulator from the inside. Normally, the gate is open, and the sewage takes a left — to the treatment plant. During a storm, the gate is closed, and the water keeps going over the weir, and out to the river.*

discharges and convey them to a treatment plant through interceptor sewers.

During dry weather all sewage is treated. When a storm occurs, there's too much water for the interceptor sewers to carry. Relief points bypass the excess flow during storms. These relief points are mechanical devices called "regulators".

The regulators control the amount of flow from the combined sewers to the interceptor sewers. A float mechanism closes a gate if the combined sewer water level rises. This action isolates the combined sewer from the main interceptor. The excess flow in the combined sewer goes over a weir and into the stream. Hence the term "combined sewer overflow" — or "CSO."

This was satisfactory for a long time, until environmental concerns began to focus on the receiving streams. Combined sewers are a source of

biological oxygen demand, oil, grease, bacteria, and solids which effect the streams and their use.

### Separate Sewers

In the 1940s, sewer system design changed. New neighborhoods were built with two sets of sewers, not just one: the sanitary sewer to carry sewage, and the storm sewer to drain rain water from your roof, foundation drains, and the catch basins in the street.

Since storm water and sewage are kept separate, there are no regulators, and sewage never bypasses into a stream.

### What to do About CSOs?

Fixing combined sewer problems is expensive. But very broadly speaking, there are two approaches:

- Separate the storm water from the sewage by building new sewers.

*Sewer separation is disruptive as well as expensive. It means digging up streets to put in the new sewers. But sewer separation does completely eliminate bypasses.*

- Store as much of the combined sewage as possible until the storm's over. Then treat it as the system is able to handle it.

*Storage is less expensive than separation, but it only reduces sewage bypasses. Storage does offer one environmental advantage, though — it results in treating some of the storm water.*

### What Is Being Done

In the Maumee River Area of Concern, Toledo, Maumee, Perrysburg, Whitehouse, Swanton, Rossford, and Northwood have some combined sewers or sewer overflow of one kind or another. In Oregon, Sylvania, Waterville, Holland, Walbridge, Millbury, and unincorporated areas, the sewer systems are separate.

#### TOLEDO Storage Tunnels

Toledo has the biggest CSO problem in the area. About a third of the city is served by combined sewers, which discharge to the Ottawa River, Swan Creek, and the

## HOT LINES

Ohio Department of Health  
Lake Erie Fish  
Advisories  
1-800-282-0546

For current information on what Lake Erie fish you should and should not eat. At publication date, there is an advisory on Carp and Channel Catfish due to PCB contamination. Other Lake Erie fish are safe to eat.

Ohio EPA  
Environmental Hotline  
1-800-686-6930

For reporting pollution problems to Ohio EPA



## Toledo's Storage Tunnels

<b>Phases 1 &amp; 2</b>	Downtown
<b>Phases 3 &amp; 4</b>	Swan Creek (north) from I-75 to Sterling Park
<b>Phase 5</b>	Swan Creek (north) from Sterling Park to Highland Park
<b>Phases 6 &amp; 7</b>	Swan Creek (south) from Hawley Street to Highland Park
<b>Phase 8</b>	Swan Creek separation: eliminate regulator at St. Clair & Williams
<b>Phase 9</b>	Maumee separation: eliminate regulator at Summit & New York

Maumee at thirty points. A number of improvements have been made, but others remain to be done. The combined sewer areas include most of the east side, and the inner city area on the west. The Tenmile Creek interceptor, completed in 1983, was built to carry the excess flow that the old sewers in that area couldn't handle. This project didn't eliminate any overflow points, but did reduce the amount of sewage bypassed.

In 1988, tide gates were installed on all of the sewage overflow regulators. The purpose of the gates was to keep river water from flowing into the system, and flooding the sewers and the treatment plant.

In 1989, Toledo began a seven year, \$46.9 million CSO program for Downtown and Swan Creek. A

series of underground tunnels — 13 and a half foot diameter pipelines, 40 to 50 feet deep — are being built to store the combined storm water and sewage until it can be treated. A few areas along Swan Creek are being separated, where this was less expensive.

The City of Toledo's overall CSO abatement project consists of 9 phases to be completed between 1990 and 1996, and costing a total of \$46.9 million. Phases 1 and 2, the Downtown storage tunnel, began operation in June. This tunnel is under St. Clair Street, 5,400 feet long from Monroe to Lagrange. It holds a total of 6 million gallons of storm water. Phases 3 and 4 are under construction. On the north side of Swan Creek, the tunnel is under

Hamilton and Buckingham Streets; on the south side, it will be under Walbridge Avenue. The tunnels are built by a boring machine, so most of the construction is not visible from the street.

## MAUMEE Sewer Separation

Maumee is approaching the half way mark in its twelve year, \$6.4 million sewer separation program. Phase 1, the White Street area, has been completed. Phase 2, the Allen Street area, is under construction. Phases 3 and 4 are scheduled for 1993 and 1996; these will be the Sackett Street and Duane Street areas, not necessarily in that order.

## PERRYSBURG Sewer Separation

The City of Perrysburg plans to reduce its CSOs by 90% through a separation program. Eventually, all the sewers in the city will be separated, at a cost of \$11 million. Perrysburg's priority has been to expand its treatment plant so that it will handle present and future sewage flows. That will be completed by August, 1991, and the City can turn its attention to combined sewers. The entire program is expected to take twenty years to complete. The Elm Street area will be taken care of in the first two phases, and the third will be a new storm sewer outlet to the river at East Boundary Street. The first three phases will be complete by September, 1991. The remaining phases are in the planning stage.

## WHITEHOUSE Sewer Separation

Until recently, Whitehouse's problem was its overloaded sewage treatment plant. Whitehouse is now connected to the Lucas County sanitary sewer system, and does not have a treatment plant of its own. Whitehouse had eight overflow points, which are now eliminated. One pump station still has an overflow. It bypasses during heavy rains — about 2 inches.

## SWANTON Storage Lagoon

Swanton's sewage treatment system includes a storage lagoon. This

## The First Flush

If you were in a storm or combined sewer line when a thunderstorm hit town, you would see a flash flood coming down the pipe at you. The torrent of water washes away street debris and accumulated sludge from the sides and bottom of the pipe.

This is *The First Flush*.

The first flush is the most polluted part of the combined sewage bypass. If you can catch the first flush and treat it, you can keep the worst part of the combined sewage from contaminating the stream.

Catching the first flush is the idea behind Toledo's combined sewage storage tunnels, and Swanton's lagoon. But as enormous as these facilities seem, they can't hold all the storm runoff.

### Separation: Is It Better?

Sewer separation eliminates bypasses, but is it better than storage? The downtown storage tunnel catches a first flush of a quarter inch. This tunnel will hold all the runoff for about half the rain storms. The Swan Creek tunnels will hold a little more than half an inch. But storage does have an environmental advantage over separation.

The first flush isn't just sewage. It's also "relatively clean" storm water that includes motor oil, leaves, litter, fertilizer from gardens, and dog excrement. In separate sewer areas, all this goes into the creek. Combined sewers with first flush storage capture and treat the worst of this pollutant loading.

Does that make up for bypassing the rest of the combined sewage and stormwater? Possibly; but the data needed for a definite answer doesn't exist. It depends on how much of a first flush is captured, how much sludge in the sewer and debris in the street have accumulated since the last storm — and how intense the rainfall is.



pond holds 2.5 million gallons of combined sewage, which is treated after a storm. Swanton also has two storm sewer projects underway, which will eliminate some combined sewers.

## NORTHWOOD

Northwood has some combined sewers, but no overflow points. The combined sewers are in the western part of the town, and flow north into east Toledo, which also has combined sewers.

## ROSSFORD

Rossford's sewer system was separated in the early 1970s. Each of the three sewage pumping stations, however, has an overflow; one to the Maumee, and two to Grassy Creek. Sewage bypasses during severe storms, or when equipment malfunctions.

## Who Pays?

In two words: *the taxpayers.*

Sewage grants, which paid 75% of construction costs until the early 80s, have been victims of Federal cutbacks. Grant money diminished steadily throughout the 1980s, and is about to be discontinued completely. Toledo is the only city in Ohio to receive Ohio EPA grants for CSO projects. But the \$15 million in CSO grants still leaves more than \$31 million to be paid for locally. The price of cleaner water — for all communities with CSOs — will be as-

essments and higher sewer rates, and/or local income taxes.

## What You Can Do

As these CSOs projects are being planned or built, the rain keeps falling, and the sewers continue to overflow. Can the average citizen do anything to help? Yes, a little. Consider this: if it's raining, what goes down your drain will probably end up in the creek. If you can wait till an hour after the rain stops to do the dishes, or wash clothes, or take a shower, do it.

## The Rest of the CSOs

When Toledo finishes its CSO program in 1996, what then? With sewage bypasses greatly reduced, Swan Creek will need a good cleaning to remove the old sludge. Dredging the lower part of the stream is expected to cost over \$1 million. The City has plenty of time to pursue funding for the Swan Creek Cleanup — but if there's no grant money available, the money will have to come from local taxes.

*And what about the Ottawa River, and the Maumee, north and south of downtown, and on the east side?*

There are presently no plans for CSO projects in these areas. The Swan Creek and Downtown CSO projects went first because these areas had the worst problems.

*Will separation or storage tunnels be needed in the remaining combined*

*sewer areas? The Tenmile Creek Interceptor has reduced overflows, but has it been enough? Combined sewers overflow into the Maumee from 14 other regulators. It's less noticeable on the Maumee because of the dilution. What should be done? The Remedial Action Plan Advisory Committee will address these questions in the coming year.*

## FOR MORE INFORMATION

Ohio EPA

614-644-2131

**Pat Dorman**

Maumee RAP Coordinator

Ohio EPA Div. WQP&A

PO Box 1048, 1800 Watermark

Columbus, Ohio 43266-0149

TMACOG

419-241-9155

**Kurt Erichsen,**

**Judy Jones, or**

**June Brown**

123 North Michigan Street

Toledo, Ohio 43624-1996



Toledo Metropolitan Area Council of Governments  
123 North Michigan Street  
Toledo, Ohio 43624-1996

(419) 241-9155

*Maumee River*

This publication is a joint effort of the Maumee River Remedial Action Plan Advisory Committee, Ohio EPA, and the Toledo Metropolitan Area Council of Governments.

Non-Profit Org.  
U.S. Postage  
PAID  
Toledo, Ohio  
Permit No. 79



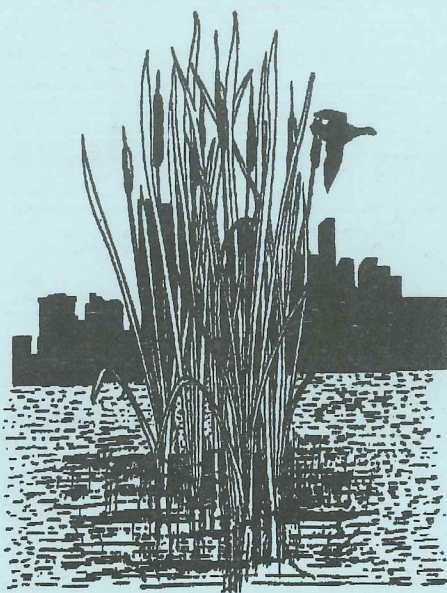


# Maumee River

Issue #4 Remedial Action Plan Newsletter

December, 1990

## A CLEAN WATER AGENDA



### Fish and Wildlife: The Ecosystem

Water quality isn't just about getting sewage effluent under 1 part per million phosphorus, or sediment cadmium below 0.38 parts per billion. The *goal* is to improve our *use* of the water — for drinking, fishing, swimming, and commerce. The chemical standards are the *means*.

The tough part is what to *do*, and who should pay? The RAP, through its committee structure, recommends a course of action. In fact, *many* actions for corporations, municipalities, organizations, and ordinary citizens to

take. These actions are not punitive. The recommendations target no single person or group, but all pollution sources.

The Maumee RAP goals include:

- All streams should be fishable and swimmable
- Reduce and virtually eliminate toxics from discharges
- Sustain and increase the fish stock, and recreation
- Protect and restore wetlands and floodplains
- Acquire and preserve natural areas

### What is a RAP?

Forty-two areas around the Great Lakes are seriously polluted, and have been declared *Areas of Concern*, or "AOCs".

That designation comes from the International Joint Commission, which oversees the Great Lakes Water Quality Agreement. The Lower Maumee River and Maumee Bay are an Area of Concern because you can't swim in the streams, and you shouldn't eat some of the fish.

The RAP — *Remedial Action Plan* — is a step toward cleaning up the Maumee. The Maumee RAP is being prepared through a partnership of TMACOG (Toledo Metropolitan Area Council of Governments) Ohio EPA, and the RAP Advisory Committee. The Advisory Committee consists of concerned citizens and organizations, State agencies, and representatives of all the communities in the RAP Area.

That area takes in the Maumee as far upstream as the Bowling Green water intake, and covers Lucas County, the northern third of Wood County, and a corner of Ottawa County. The first step was to issue a detailed report on present water quality — both what we know, and what we need to find out. This step has been completed. The second phase is to list what needs to be done to clean up the pollution from the many sources, who needs to do it, how much it will cost, and where the money should come from.

The purpose of this newsletter is to inform the public about the problems, and what needs to be done. You can help, and your input is welcome. See the box on the last page for more information.

- Provide environmentally sound access to Lake Erie
- Support the *North American Waterfowl Management Plan*
- Inform the public how it can protect water quality
- Establish a citizens' group to track the Clean-up progress

The RAP recommendations are organized by the type of action. The first section, "The Ecosystem Approach," covers actions to improve fish and wildlife habitat throughout the Area of Concern. The other sections deal with pollution sources, such as sewage



treatment plants, dumps, or agricultural runoff.

Throughout, we have listed costs. We don't pretend these figures are complete — they're just the best available. For some actions, we don't and can't know the cost yet. The bottom line — the total cost to *everyone* — \$220 to \$430 million *plus* \$2.75 million per year for ongoing programs. Clean water isn't cheap.

## HOT LINES

Ohio Department of Health  
Lake Erie Fish Advisories  
1-800-282-0546

For current information on what Lake Erie fish you should and should not eat. At publication date, there is an advisory on Carp and Channel Catfish due to PCB contamination. Other Lake Erie fish are safe to eat.

Ohio EPA  
Environmental Hotline  
1-800-686-6930

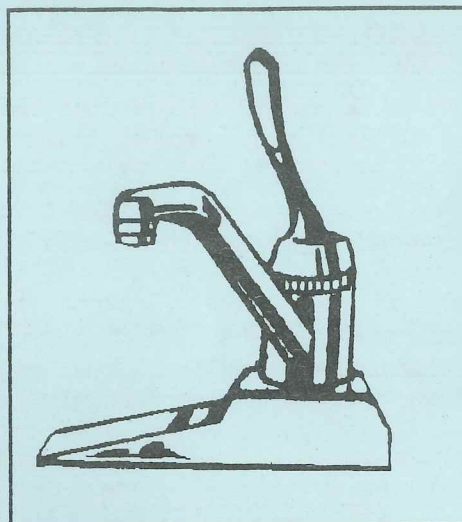
For reporting pollution problems to Ohio EPA

## Waste Water Treatment

Where there are enough people to make a big city, count on enough sewage to make a big mess. Sewage treatment around the Toledo area has improved, but the job's not done. Toledo, Lucas County, Oregon, and Perrysburg all need treatment plant or sewer improvements. Toledo, Perrysburg, Swanton, and Maumee also have combined sewer projects to build. Estimated cost: \$144 to \$447 million, total. US EPA used to award

grants for these projects. Now the money has to come from sewer customers, as assessments or rate increases.

The story of industrial waste is similar. There's been progress, but there's more to do. The RAP found seven industries that have wastewater problems. Ohio EPA requires industries to clean their wastewater. Estimated cost: over \$22 million. The industries will pay for the clean-up, but consumers should expect to see it in price tags.

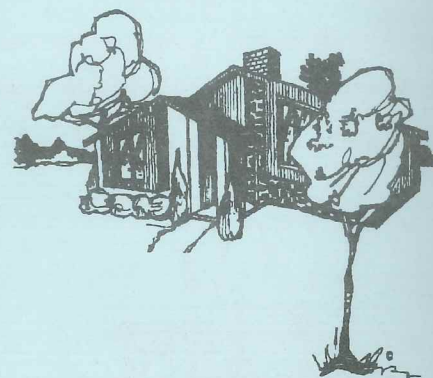


## Water Treatment Sludge

Toledo, Oregon, and Waterville use surface water for drinking. Lime is added to remove sediment and algae, and to soften it. The used lime, algae, and sediments make up water treatment sludge.

All three cities have stored lime sludge in lagoons. In time, the lagoons overflowed, and built up deposits in neighboring streams. This sludge isn't toxic, but in a stream, deposits can be harmful to fish. The cities are removing these deposits.

The RAP recommends *reusing* water treatment sludge by spreading it on farm land. Many farmers apply lime for pH control. Using lime sludge saves the farmer money, and turns a "waste" material into a resource.



## Home Sewage Disposal

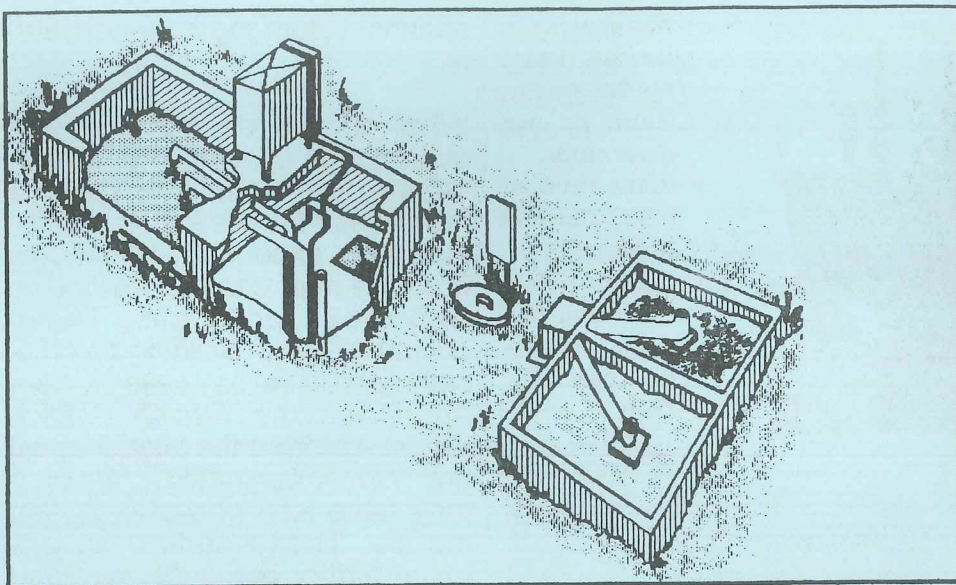
Some 20,000 houses in the Area of Concern use septic systems. Tanks should be pumped out every three years or so. Many homeowners don't. The result: the tank and leach field tiles fill with solids. The system clogs, and sewage backs up into the house. Too often, the homeowner solves the problem by putting in a pipe from the septic tank to the ditch or storm sewer, and drains raw sewage to the nearest stream.

The RAP recommends that the Health Departments:

- Set up a program to inspect septic systems.
- Require proper maintenance.

The RAP recommends funding the inspections with a \$25 annual fee for houses with septic tanks. Up to now, sewage disposal outside the city has been free: no sewers, so no sewer bill. Our streams pay the price.





## Package Treatment Plants

A "package" plant is a sewage treatment plant where a septic tank would be too small. They serve restaurants, trailer parks, and subdivisions, where there's no sewer.

These plants need trained operators, just like a city treatment plant. In theory, the same permit system that applies to Toledo and Lucas County also covers package plants. In practice, package plants fall through the cracks.

The Lucas and Wood County Health Departments inspect package plants. That's good, but some plants fall outside of their programs because of regulatory restrictions. And there's still no training, and there are no effluent standards. The RAP recommends:

- Issue special "Package Plant Permits" since the usual system has been ineffective.
- Operator training should be *mandatory*.
- Revise inspection fee rules to eliminate exemptions.

The cost? An inspection fee of \$250 per year for each plant. That doesn't include training, or the cost of running the plant correctly.



## Urban Stormwater

When it rains, the city gets a bath. The shower washes off topsoil and fertilizer, car oil and road salt, decaying litter and leaves, industrial chemicals spilled at a loading dock. Any debris or waste that people dump in a parking lot, driveway, or street, or pour down a catch basin, will end up in the Maumee.

What do we do about polluted stormwater? Find and eliminate the pollution source. That may sound simple, but it's not. Someone who dumps a can of used paint thinner down a catch basin on a Sunday afternoon probably won't get caught. (Yes, it *is* against the law).

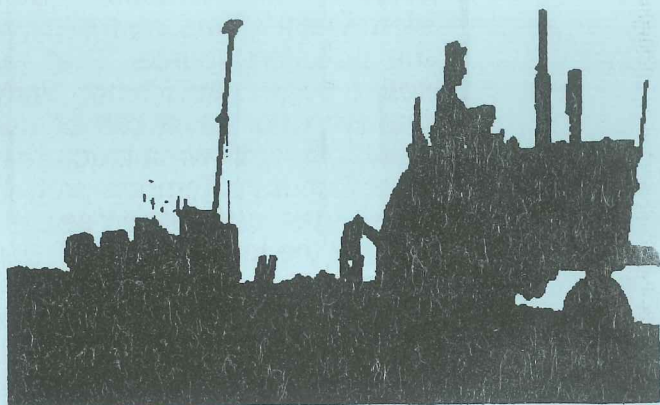
Second, reduce the erosive force of stormwater by slowing it down. Preserving floodplains and wetlands helps; so does soil conservation at construction sites. But stormwater doesn't respect municipal boundaries. An urban area with many political jurisdictions needs regional management to control stormwater.

The RAP recommends the following actions:

- Establish a regional stormwater management district
- Add erosion controls to construction site regulations
- Identify potential stormwater pollution sources
- Education: *What you dump on the ground ends up in the river.*

US EPA has issued regulations to mandate stormwater permits. A rough estimate puts Toledo's *applying for* the permit at \$600,000, plus half a million per year to run the program. Including the suburbs could double those figures. Where would this money come from? Possibly from property taxes, based on the amount of runoff. Large parking lots, which produce a lot of runoff, would pay the most.





## Agricultural Runoff

The RAP stresses three farm runoff pollutants:

**Phosphorus & Sediment** Crops need phosphorus. It's a nutrient. It makes corn and soybeans more productive, and algae, too. Algae blooms decrease fish populations. The sediment — *mud* — is valuable topsoil in places where it's not wanted. It clogs ditches, and fills in the Toledo Harbor shipping channel.

**Nitrate** — Another fertilizer nutrient. Nitrate in drinking water can be harmful to infants and elderly persons. During spring and fall, river concentrations are high. Bowling Green, Waterville, and Oregon have issued advisories because of nitrate.

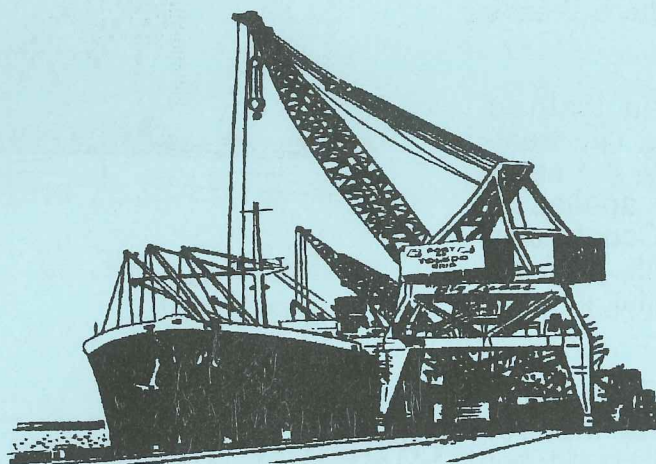
**Pesticides** Many farmers use pesticides to kill weeds. But the chemicals can wash off in a rain storm, and at times exceed US EPA health advisory levels. Atrazine is a particular concern, because it's so widely used.

The RAP recommends:

- Conservation tillage
- Leave strips of grass between the field and the ditch to trap the sediment

- No plowing in the fall. Leave residue on the field, or use cover crops.
- Plant rows of trees to serve as windbreaks
- *Manage* fertilizer and pesticide application carefully. Don't over-apply.
- Require training and certification for fertilizer and pesticide vendors and applicators.

The cost: \$1.75 million per year, for Ohio DNR, the thirteen county Soil and Water Conservation Districts in the Maumee basin, and cost sharing to farmers.



Graphic Courtesy Toledo-Lucas County Port Authority

## Dredge Disposal

The muddy sediment flows with the river down to Maumee Bay. As the stream widens, the water slows down, and the mud settles. It fills in the shipping channel, which is vital to our economy. To keep the Port of Toledo open, the US Army Corps of Engineers dredges a million cubic yards of

sediment from the channel yearly.

What do you do with a million cubic yards of mud? Put it back on the farm land that it came from? That makes sense, but it's incredibly expensive. Sediments from the river channel are mixed with urban pollutants. These sediments go to building an artificial island in the bay called a *Confined Disposal Facility* (CDF). Sediments from the lake channel are "uncontaminated" because they have less phosphorus and metals. These sediments are taken further out in the lake and dumped.

Open-lake dumping is being phased out. Next year will be the last. Still, as long as all that mud keeps coming down the Maumee, annual dredging will have to continue. How can the sediment be *used*? The RAP recommends:

- Expand the present CDF, and develop it for future recreational use.
- Rebuild Woodtick Peninsula, which has mostly washed away.
- Use it to build a ski hill
- Use it as topsoil, since the sediment came from farm land.

That last recommendation in fact has happened. Dredge sediment, mixed with lime and sewage sludge, and then aged, is being marketed as a low-cost topsoil. The other recommendations are under pressure for action, because 1991 will be the last year for open lake dumping. Total cost: \$23 to \$46 million.



---

## Landfills and Dumps

---

It seemed like a good idea at the time. For most of the past 150



years, people thought they were killing two birds with one stone. Toledo had a lot of low, swampy areas along streams that needed to be filled in, *and* there was a lot of trash and industrial waste to get rid of. Fill in the swamps with the trash, and *both* problems are solved!

Today we're beginning to pay the price. *Now* we know some of that trash contained toxic or carcinogenic chemicals.

So far, the RAP has identified 58 dumps and landfills, and 36 impoundments. Of these 94, the RAP has recommended action at 41. The owner of the site is responsible for the clean-up. The person or company who produced the waste, or who dumped it there, can also be held liable.

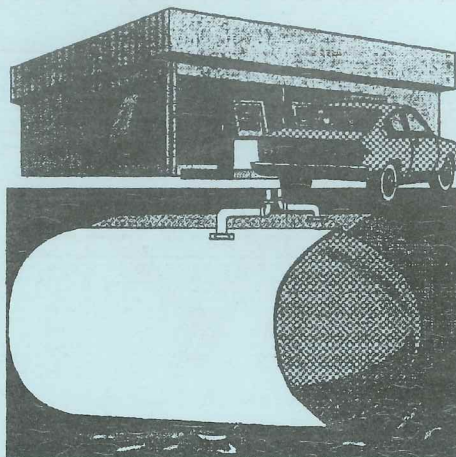
The clean-up will be expensive. Estimates to clean up the Dura dump range from \$25.8 to \$34.8 million. Most of the other 93 should not be *that* expensive — Dura is one of the worst. Another site, where three transformers containing PCBs were buried, is

expected to cost \$50,000. The RAP committee estimates the total cost of the 41 high priority sites at \$200 million.

---

## Underground Storage Tanks

---



Graphic Courtesy Toledo Blade

Underground storage tanks hold gasoline, fuel oil, or liquid chemicals. If they leak, the chemicals can pollute groundwater. In all Lucas, Wood, and Ottawa Counties there are 4,000 tanks registered. There may be many more unregistered tanks. About 2% have *reported* leaks — no telling how many do, but haven't been reported.

New tanks have more stringent standards than two years ago. But what about tanks that have been in the ground many years, and are slowly deteriorating? The RAP recommends:

Give priority to RAP Areas of Concern in monitoring and remediation efforts.

Stricter standards for construction and installation of new tanks.

The cost? Information on leaking tanks is very sketchy, so the RAP committee did not try to guess at the cleanup cost. The RAP *does* suggest putting \$15,000 per year into a training program for inspectors.

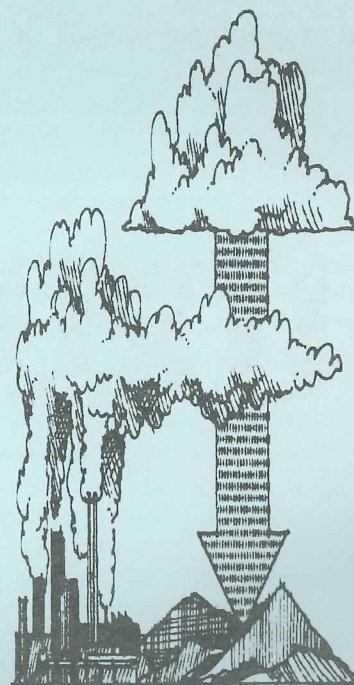
---

## Atmospheric Deposition

---

Doesn't the air seem fresher after a rain storm? With good reason — the rain washed pollutants out of the air, and into the Maumee. What goes up from tail pipes and smoke stacks must come down again.

We hear a lot about acid rain on the national news; do we have it here? Yes. Our rain *is* acidic — but the streams aren't. In fact, they're basic, and we find no ill effect from acid rain. Our limestone bedrock may be neutralizing the acid. In short, we give, but do not receive. Toledo's contribution to acid rain goes east with the wind.





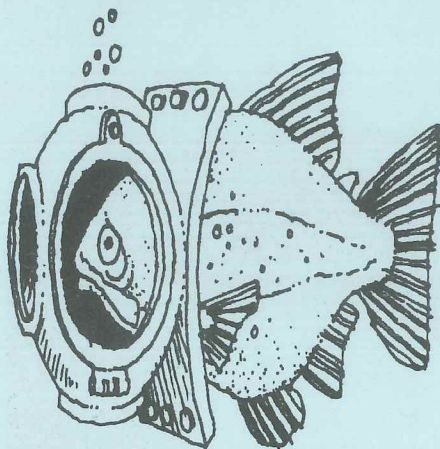
## Contaminated Sediments

Storm sewers, dumps and landfills, and industries discharge chemicals. Over many years, chemicals have accumulated at the bottoms of our urban streams. There are heavy metals — cadmium, chromium, lead, and others. There are also PCBs and PAHs — petroleum-based chemicals, some of which are carcinogenic. Because of the PCBs, the public has been advised not to eat bottom feeding fish: channel catfish and carp. Other fish are safe to eat.

Where *exactly* are these chemicals coming from? How much from dumps, from illegal dumping into storm sewers, and how much from industry? What's the best way of dealing with the contaminated sediments? The streams could be dredged to remove them, but the sediment would be difficult to dispose of. Sediments from the Ottawa River and Swan Creek may even be a "hazardous waste," and have to be put in a special landfill, or incinerated.

Detailed investigation of the sources is being planned. The cost of the clean-up is anybody's guess.

Dredging the lower Ottawa River, from Suder Avenue to Lost Peninsula, is planned. Congress has authorized 50% funding for



the \$13.2 million project. As for Swan Creek, the City will complete combined sewer storage tunnels in 1996. It may be best to put off dredging there until the tunnels are done.

## Summing Up

The job ahead of us is big. We have made a lot of progress

toward cleaning up our streams, primarily thanks to public sewage systems. That took hundreds of millions of dollars, and fifteen years, and there were big government grants to help. That was the *easy* part. To continue the cleanup, many people will have to act, and spend millions more. In the end, the cost will trickle down to taxes, rates, and price tags. It's a cost that will have to be borne for Northwest Ohio's environmental and economic well-being.

## FOR MORE INFORMATION

Ohio EPA  
614-644-2131

**Pat Bulzan**  
Maumee RAP Coordinator  
Ohio EPA Div. WQP&A  
PO Box 1048, 1800 Watermark  
Columbus, Ohio 43266-0149

TMACOG  
419-241-9155

**Kurt Erichsen,**  
**Judy Jones,** or  
**June Brown**  
123 North Michigan Street  
Toledo, Ohio 43624-1996

Non-Profit Org.  
U.S. Postage  
PAID  
Toledo, Ohio  
Permit No. 79

# maumee

Toledo Metropolitan Area Council of Governments  
123 North Michigan Street  
Toledo, Ohio 43624-1996

This publication is a joint effort of the Maumee River Remedial Action Plan Advisory Committee, Ohio EPA, and the Toledo Metropolitan Area Council of Governments.