



Profiling the Ottawa River VI

*Friendship Park Senior Center
2930 131st Street Toledo, Ohio
Weds., September 25, 2002
6:30PM – 9:30PM*

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Overview of the Maumee RAP and its Projects

Matt Horvat, Maumee R. Coordinator, TMACOG/Maumee RAP

Combined Sewer Overflow/Sanitary Sewer Overflow Update

Scott Sibley, Project Manager, City of Toledo

Toledo's Waterways Initiative: Wastewater Treatment Plant Improvements

Bob Williams, Director, Toledo Waterways Initiative, City of Toledo

Ottawa River Sediment Remediation Priorities Project

John Hull, President, Hull & Associates, Inc.

Progress Toward Recreational/Navigational Dredging

Michele Hope, Project Manager, Army Corps of Engineers, Buffalo District

Summary of Accomplishments & Plans for the Future of the Ottawa River

Ed Hammett, Chair, Ottawa River Remediation Team

Questions and Answers Session

Mary McCarron, Public Involvement Coordinator, Ohio EPA

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Overview of the Maumee RAP and the Ottawa River Action Group

Matthew Horvat
Maumee River Coordinator, TMACOG/Maumee RAP

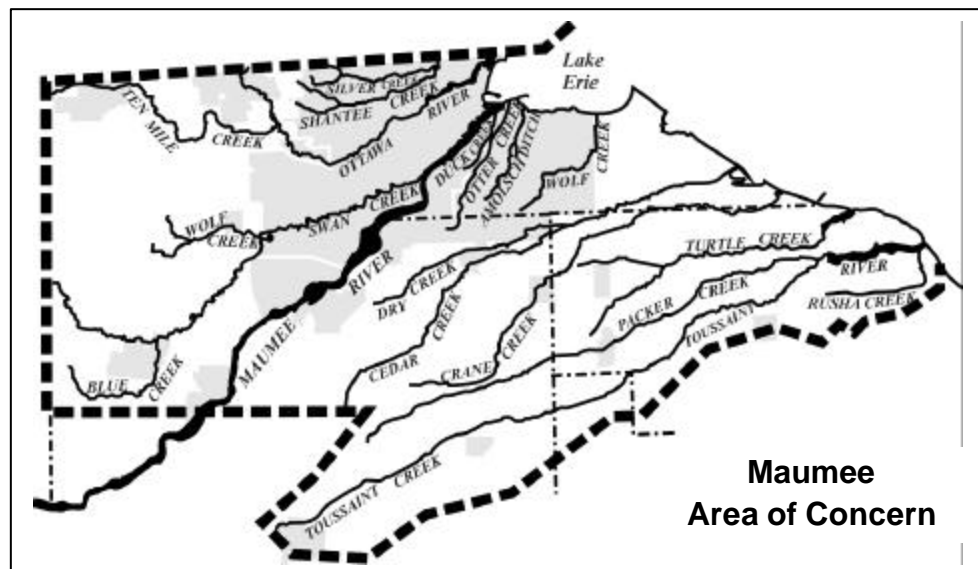
The International Great Lakes RAP (Remedial Action Plan) Program was created by the International Joint Commission (IJC). The IJC is a bi-national organization established to advise the Governments of the United States and Canada on preventing and resolving problems along their common boarder. This includes addressing pollution problems of the Great Lakes. In 1985, based on the recommendations of the Great Lakes states and Canadian provinces, the IJC's Water Quality Board identified forty-two Areas of Concern (AOCs) in the Great Lake basin. An AOC is an area where water uses are impaired or where objectives of the Great Lakes Water Quality Agreement or local environmental standards are not being achieved. There are four AOCs in Ohio: Ashtabula, Cuyahoga, Black, and Maumee rivers.

The Maumee Area of Concern includes: the Lower Maumee River from the Bowling Green water intake near Waterville to Maumee Bay, as well as other tributaries to Maumee Bay and Lake Erie such as Swan Creek, Ottawa River, Duck Creek, Otter Creek, Crane Creek, and the Toussaint River.

The Maumee RAP covers most of Lucas County, the northern third of Wood County, and the northwest half of Ottawa County.

A RAP is to be developed for each AOC that identifies the problems, implementation activities to restore

the uses, and develops methods to keep the uses restored. Maumee RAP is the local organization responsible for this task. The Maumee RAP is a cooperative effort that involves a diverse cross-section of environmentally concerned businesses, industries, government agencies, non-profit organizations, educators, and citizens to restore the waters of the Maumee AOC to "fishable and swimmable" conditions. The ultimate goal of the Maumee RAP is to restore the beneficial uses of the Maumee AOC and to be in full attainment of Ohio's Warmwater Habitat Use designations. Using these and other measurements the Maumee RAP hopes that the Maumee AOC will eventually be de-listed as an AOC.



Fourteen beneficial use impairment (BUI) measurements are used to identify environmental problems and to measure eventual improvement of the water bodies. BUIs are defined as a change in the physical, chemical or biological integrity sufficient to cause any of the following:

- 1) Restrictions on fish and wildlife consumption;
- 2) Tainting the fish and wildlife flavor;
- 3) Degradation of fish and wildlife populations;
- 4) Fish tumors and other deformities;
- 5) Bird or animal deformities or reproduction problems;
- 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 closing;
- 11) Degradation of aesthetics;
- 12) Added costs to agriculture or industry;
- 13) Degradation of phytoplankton and zooplankton populations; and,
- 14) Loss of fish and wildlife habitats.

The Maumee RAP has a local governing board, the Maumee RAP Committee. It makes the official decisions for the Maumee RAP organization and provides general program oversight. The Maumee RAP Committee has action groups (or sub-committees) that are integral to the progress of the Maumee RAP. These action groups address specific issues that affect the Maumee AOC, such as open space, wetlands, agricultural, rural, and urban concerns. The Maumee RAP has placed great deal of focus on public outreach and education. This is an ongoing activity primarily coordinated through its own action group. There are also two action groups utilizing a comprehensive watershed approach to improving Swan Creek and the Ottawa River. The *Profiling the Ottawa River VI* has been sponsored by the Ottawa River Action Group.

The purpose of the Ottawa River Action Group is to return the Ottawa River to fishable and swimmable conditions with ecological and recreational value. The Ottawa River Action Group is working to restore the river to previous conditions by reducing the pollution sources that have contributed to its demise. The action group has several projects underway or just recently completed. The group, in collaboration with numerous partners, conducted the Eighth Annual Clean Your Streams Day on Saturday, September 11, 2004. Over 320 people volunteered to pick up trash from 22 streambank sites and 2 boating sites in the Maumee AOC, and perhaps learned more about the importance of improving water quality.

The Ottawa River Action Group in partnership with TMACOG and the Ohio EPA through a grant from the US EPA Great Lakes National Program Office has recently completed the Ottawa River Priorities Project that is also being addressed as part of *Profiling the Ottawa River VI*. The results of this study will be posted on the Maumee RAP web site as soon as they are available. The action group is also trying to obtain funding to conduct a fecal coliform sampling project on the Ottawa River to determine the levels and possible sources of fecal contamination to the

stream and has helped to prepare a \$1.2 million environmental cleanup proposal for the US EPA Great Lakes Legacy Act funding.

The Maumee RAP in conjunction with many community partners is currently drafting a Watershed Restoration Plan (Stage 2 Report) that focuses on the Maumee AOC, plus the headwaters of the Ottawa River and Swan Creek. It will include a comprehensive list of tasks to be completed to help meet the goals of the RAP. The completion of this plan expected in the spring of 2005.

In addition, the Ottawa River Remediation Team, a partnership of environmental professionals working to expedite the remediation of the Ottawa River, has identified major tasks and a time line to complete these tasks. A major focus of this group has been the recreational/navigational dredging of the lower portion of the Ottawa River. This issue will also be addressed as part of *Profiling the Ottawa River VI* program.

The Maumee RAP is striving for abundant open space and a high quality natural environment; adequate floodwater storage capacities and flourishing wildlife; citizens who take local ownership in their resources, and river, streams, and lakes that are clean, clear, and safe for recreational use. This will stimulate economic growth, secure jobs, and assure quality of life.

You are invited to get involved in the effort to restore the waters of our Area of Concern. Join the Maumee RAP Ottawa River Action Group or perhaps one of the other action groups. More information on 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 the chair of the action group directly.

Maumee RAP Contacts

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Urban Runoff Action Group	Scott Sibley, Chair (419)936-2851

Coordinator Contacts

Local Coordinator - TMACOG	Matt Horvat (419)241-9155 ext. 123
State Coordinator - Ohio EPA	Cherie Blair (419)352-8461
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Combined Sewer Overflow and Sanitary Sewer Overflows on the Ottawa River

Scott B. Sibley, Administrator
Division of Engineering Services, City of Toledo

The Ottawa River is subject to both combined sewer overflows (CSOs) and sanitary sewer overflows (SSOs) from the City of Toledo sewer system. Combined sewers, conveying both sanitary wastewater and storm water, serve the central portion of Toledo. This flow is normally conveyed to the Bay View Water Reclamation Plant, but during large storms the flow spills out to local watercourses. Sanitary sewer overflows occur from sewers that are designed to carry only sanitary sewage. These sewers can also become overloaded during storms because of rain water and groundwater entering the sewers from downspouts, inappropriately connected yard drains and catch basins, and leaking main line and service lateral sewers.

Basement flooding from sanitary wastewater is also a common occurrence in some parts of the City. Operation of the sanitary sewer overflows (SSOs) serves to relieve the sewer system and reduce the number and frequency of basement flooding events.

There are six locations where combined sewers can overflow to the Ottawa River. These are located between Lagrange Street and Monroe Street as follows:

- ❑ Lagrange Street at Manhattan Boulevard
- ❑ Windermere Boulevard at Manhattan Boulevard
- ❑ Detroit Avenue at Phillips Avenue
- ❑ Lockwood Avenue at Hillcrest Avenue
- ❑ Ayers Avenue at South Cove Boulevard, and
- ❑ Monroe Street on the east side of the Ottawa River Bridge.

Sanitary sewer overflows on the Ottawa River are present in both Point Place and West Toledo. The most significant of these are in Point Place where sewage can overflow at two locations on the Ottawa River: 290th Street at Ottawa River Road and 145th Street at Edgewater Drive. There is also an overflow to Maumee Bay at 129th Street and Edgewater Drive. Two other SSO locations were recently identified in West Toledo: Mt. Vernon, east of Parkside, and in the 2100 block of Wyndhurst. These SSOs overflow into adjacent storm sewers which then flow to the Ottawa River just upstream and downstream of Ottawa Park.

Recorded combined sewer overflow data for April 1 to September 1, 2003 monitoring period is as follows:

Location	Occurrences	Duration (hrs)
Lagrange St.	25	92.1
Windermere	32	102.0
DeVillbiss	4	1.8
Lockwood Ave.	29	117.1
Ayers Ave.	20	102.0
Monroe St.	20	51.6

Sanitary sewer overflow data for 2001 is as follows:

Location	Occurrences	Volume (MG)
129 th St.	28	1.68
290 th St.	22	8.36
145 th St	16	0.56
Mt. Vernon	no data	
Wyndhurst	no data	

The Mt. Vernon and Wyndhurst SSOs are currently unmonitored but have only been observed to overflow during very large storms, estimated at 2 to 3 times per year.

These sewer overflows contain raw sewage mixed with large quantities of rainwater; therefore, the resulting discharge is very dilute. However, the sewage contains contaminants that can pollute the receiving stream and make it unsafe for human contact. These pollutants include bacteria, solids and floatables, biochemical oxygen demand, and heavy metals.

Remediation Work To Date

The City has been working since the late 1970s to alleviate the effects of CSOs and SSOs. To date, the City has spent over \$61 million to abate the effects of these overflows on the Ottawa River alone. Most of this expenditure has been for the Ten Mile Creek Relief Interceptor constructed in 1982. The completed and ongoing projects are:

<u>Project</u>	<u>Completed</u>	<u>Cost (\$ million)</u>
□ Planning, I/I Study, and installation of monitoring equipment	1976	\$0.62
□ Ten Mile Creek Relief Sewers, CSO regulator modifications, tide gates, and closure of Monroe North regulator	1982	48.64
□ Updated CSO Facilities Plan	1995	0.125
□ CSO regulator renovation	1995	0.97
□ Partial separation of Devilbiss area	1997	0.20
□ Relocated tide gate on Lockwood regulator	1997	0.10
□ Combined Sewer Overflow Impact Study	1997	0.95
□ Partial separation of Lagrange area	2000	1.20
□ Point Place Relief Pump Station	2000	1.60
□ Eliminate 32 Cross Connections	1999	1.10
□ Cleaning and Televising of All Sewers in Pt. Place	1999	0.60
□ Sewer Lining in Point Place	2002	0.9
□ 290 th Force Main	2004	3.2
□ Parkside Sewer System Evaluation Survey	2004	1.1
□ 290 th Pump Station	2005	2.2
□ Edgewater Pump Station	2005	4.0
□ Phase 2B Force Main and Relief Sewer	2005	2.6

Planned Work

On July 9, 2002, the voters of the City of Toledo authorized the Mayor to sign a Consent Decree with the USEPA that spells out a 15-year, \$400 million program for improving the wastewater system. Part of this program is directed at CSOs and SSOs. Part of these CSOs and SSOs discharge into the Ottawa River.

CSOs

The Consent Decree's plan for CSOs calls for development and implementation of a CSO Long Term Control Plan (LTCP). This plan has been underway since 2003. As part of the study various sewer flow and water quality studies have been performed to better define the impacts of CSOs on the receiving streams

These studies found upstream fecal coliform levels in the Ottawa River to be generally high with some localized wet weather impacts observed in the CSO reach of the river. The upstream maximum fecal coliform criterion (2,000 per 100ml) was exceeded approximately 20 % of the time. The upstream fecal coliform exhibits a trend of increasing from around 200-300 #/100ml in the spring to 1,000-3,000 #/ml in the summer. Dry weather sampling showed fecal coliform decreasing from a high of approximately 1,000 #/100ml upstream to below 100#/100ml at the downstream boundary. During two wet weather sampling events fecal coliform became elevated upstream and increased through the CSO area before decreasing at the river mouth. In both cases, fecal coliform returned to background levels within two days of the storm events.

Dissolved oxygen (DO) during dry weather averaged approximately 6 mg/l upstream, decreased to a low of 5 mg/L at River Mile 6 and increased significantly to a high of 13 mg/l at River Mile 3. During the wet weather events, DO started from about 8 mg/l upstream and decreased through the CSO area. It increased markedly at the downstream station for one event but stayed relatively constant at around 7 mg/L for the other. The river geometry changes substantially in the vicinity of River Mile 6 with a significant increase in river cross-sectional area, and a corresponding decrease in velocity. These are most likely factors contributing to the observed reduction in dissolved oxygen, in addition to any CSO impacts.

Ammonia concentrations ranged from less than 0.1 mg/l to 0.72 mg/l, with concentrations generally higher during the wet weather events.

The final LTCP is due to the USEPA by approximately October 2005. The LTCP will use the results of the above studies to assess the costs, effectiveness and water quality benefits of a wide range of alternatives for eliminating or reducing and treating CSOs. These alternatives will include such things as complete or partial sewer separation, construction of storage basins or tunnels, and construction of remote treatment facilities for sedimentation, screening and disinfection. Public input will be sought through public forums and a public information program. A Community Workshop on the LTCP was held on September 16, 2004. The LTCP will identify and select an alternative or combination of alternatives for implementation and an expeditious schedule for design and construction. Completion of all construction must occur no later than August 31, 2016. The current Department of Public Utilities Capital Improvement Plan budgets for Ottawa River CSO improvements beginning in 2009 and extending through

2015 at a cost of over \$45 million. A more precise schedule and budget will not be available until after completion of the LTCP.

SSOs

The Consent Decree's plan for SSOs in Point Place closely follows Findings and Orders issued by the Ohio EPA on July 2, 1999. Phase 1 of a two-phased approach, recommended in a 1997 sewer study was completed in 2001. That phase included construction of the Point Place Relief Pump Station in Detwiler Park at Manhattan Boulevard and Summit Street, sewer repairs to eliminate 32 cross connections between storm and sanitary sewers, cleaning and televising of all of the sewers in Point Place, and lining of 15,000 feet of sewer which was found to be in poor condition. The total cost of these improvements was \$4.2 million.

A General Plan for Phase 2 improvements to completely eliminate the SSOs in Point Place was submitted to Ohio EPA in April 2002 and subsequently approved.

The Phase 2 plan calls for construction of:

- Pump station at 290th Street and Ottawa River Road
- Pump station at Edgewater School on Edgewater Drive
- A force main pipe from the new Edgewater Pump Station, along Edgewater, 129th, 306th, 125th, 304th, 117th, Ottawa River Rd., and 290th Street, then directly south, across Detwiler Park, to Manhattan Boulevard.
- A relief sewer on Edgewater Drive from 129th Street to 149th Street
- A relief sewer on 117th Street from 290th Street to Summit Street, then south on Summit Street to 116th.

These improvements will eliminate sewer overflows in Point Place and reduce basement backups. The estimated cost of these improvements is \$18.2 million. Construction got underway on these improvements in January 2004. The 36-inch 290th Street force main is now complete. Both Pump Stations are currently under construction with the 290th Street Pump Station scheduled for completion in January 2005 and the Edgewater Pump Station in April 2005. The Edgewater Force main and 117th/Summit relief sewer is currently under construction and scheduled for completion in August 2005. Completion of these projects will eliminate the SSOs at 290th Street and 129 Street.

Construction of the Edgewater Relief Sewer, which will eliminate the SSO at 145th Street is scheduled for construction in 2006.

To address SSOs and basement backups in the Parkside area, an area roughly bounded by Monroe, Douglas, Nebraska, and Upton, the City recently completed a Sewer System Evaluation Survey. This study calls for a phased program costing in excess of \$10 million through 2014.

Toledo's Waterways Initiative

Wastewater Treatment Plant Improvements

2004-2007

Robert R. Williams P.E., Director
Toledo Waterways Initiative, City of Toledo

The City of Toledo's Bay View Wastewater Treatment Plant (WWTP) treats wastewater for about 345,000 people from the City of Toledo and nearby cities, approximately 75 million gallons per day. The Plant, located near the mouth of the Maumee River, went into service in November 1922 as a pump station transferring early sewer outfalls to a central discharge point. Primary treatment began in June 1932 with secondary treatment via activated sludge with pre-aeration and grit removal improvements coming online in 1959.

Today the Plant includes screening, grit removal, skimming, swirl concentrators, primary clarification, aeration, final settling, and disinfections. Excess phosphorous is removed with the aid of ferrous salts (waste pickle liquor) and polymer that are added prior to primary treatment. Conventional and step-aeration activated sludge processes are used for secondary treatment. Residue from screens, grit and scum are land filled, while sludge is treated via gravity thickening and dissolved air flotation, followed by digestion and dewatering. Dewatered sludge is recycled in a farmland application program that started in 1973.

The Bay View WWTP staff has responsibility for some major components of the sewer system as well, including interceptor sewers, the Bay View, East Side, Reynolds Road and Windermere Pump Stations, 26 sanitary lift stations, 9 stormwater lift stations and 33 combined sewer overflow regulators. Wastewater in this system is approximately 21% from industry, 30% from domestic or commercial sources and 49% from extraneous sources. This 49% is a large part of the total wastewater volume and is a result of the age of some of Toledo's sewers and the combined sewer inflows to the system.

The Federal Judge signed the Consent Decree on December 16, 2003. The national engineering firm of Black & Veatch was retained by the City of Toledo under a 15-year contract to meet the requirements of the consent decree. The Consent Decree deals with three major areas of concern. The first is the elimination of existing sanitary sewer overflows. Work is underway in Point Place and soon to begin in the River Rd area to eliminate these overflows. The second is Treatment Plant Capacity. The third is dealing with Combined Sewer Overflows.

The Consent Decree requires the design and construction of flow equalization and wet weather treatment facilities at the Bay View Wastewater Treatment Plant (WWTP) to eliminate bypassing of any untreated flow. The sizes of facilities required are 60 million gallons (MG) for flow equalization and 185 million gallons per day (MGD) peak flow capacity for the wet weather treatment facilities. Associated with the above facilities are additional influent pumping facilities, preliminary treatment facilities, an additional final clarifier, and effluent pumping facilities.

A number of these projects are currently under construction. Namely the East Side, Bay View, Windermere and Bayview pump station upgrades. The 4 major construction projects on the horizon are:

- Wet Weather Grit Facility
- Ballasted Flocculation Facility
- Equalization Basin
- Effluent Pump Station

Construction on the first of these facilities is to begin in the spring of 2005 and completion of the last facility will be completed in late 2007. This will result in the maximum capacity of the plant to increase from 195 MGD to 400 MGD.

Ottawa River Sediment Remediation Priorities Project

John H. Hull, P.E., President, Hull & Associates, Inc.
(narrative co-authored by BBL)

Background

A legacy of industrial use, urbanization, and agricultural activity has left the Ottawa River with deposits of contaminated sediment that pose environmental risks, and is a primary reason for U.S. EPA designating the Maumee River area as a Great Lakes Area of Concern (AOC). Remediating Ottawa River sediments is one of the Maumee Remedial Action Plan's (RAP) top priorities to restore the environmental health of local river systems.

Several sediment sampling studies show that elevated concentrations of polychlorinated biphenyls (PCBs) and metals (including lead) occur in sediments within the lower reaches of the river at levels posing potential ecological and human health risks. Such risks depend on many factors, including the areas inhabited by specific receptors, potential pathways for contaminant exposure and uptake (bioaccumulation), and the physical stability of sediments that influences the long-term availability of contaminants.

Much has been done to address sources of contamination to the river. Efforts to further reduce environmental risks posed by sediment are continuing, but additional information is needed to identify and prioritize areas for remediation and to determine the appropriate methods of remediation.

Ottawa River Sediment Remediation Priorities Project Objectives

The Ottawa River Sediment Remediation Priorities Project (Project) was conceived to provide the information needed to implement appropriate additional sediment remediation measures on the river. The Project is primarily funded by a grant from the U.S. EPA Great Lakes National Program Office (GLNPO) to TMACOG. TMACOG hired Hull & Associates, Inc. (Hull) of Toledo and Blasland, Bouck & Lee (BBL) of Ann Arbor to provide environmental consulting services. The Project report will be publicly available this fall.

The primary objectives of the Project are to:

- Identify and prioritize areas for further sediment remediation;
- Estimate the location, spatial extent, and volume of targeted sediments in the priority areas;
- Identify remediation approaches for targeted areas using proven, accepted techniques, which may include dredging, in situ capping or treatment, or monitored natural recovery (MNR);
- Estimate remediation costs.

An ancillary objective of the Project, which was addressed mid-way through identification of the priority areas and remediation approaches, was the definition of a focused sediment removal project targeted at PCB hot spots for which remediation funding was requested through the Great Lakes Legacy Act program. Hull and BBL are supporting TMACOG in the funding request by providing various technical information and initial planning activities. The Legacy Act funding request will not be eligible for the 2004 cycle, but the project is under further consideration by U.S. EPA for future funding.

Summary of Project Activities: 2003 Sediment Sampling Program

Previous Ottawa River sediment studies and risk assessments served as the basis for this Project. To further characterize the nature and spatial extent of sediment contamination in the lower Ottawa River (i.e. from RM 0 at Maumee Bay to RM 8.8), additional sediment core sampling was conducted in fall 2003 by Ohio EPA at locales and depths selected by the Hull/BBL team. Belmont Labs conducted sediment chemical analyses.

The 2003 sampling activities included: (1) collection of 59 sediment core samples, from near surface to a sediment depth of up to 10 feet; (2) river bottom probing at each sampling location to assess soft sediment thickness at each core location; (3) stratigraphic logging and photographing of core samples; (4) physical analysis of selected core sections; and (5) chemical analysis for selected core-specific constituents, including specific PCB aroclors and total PCBs, multiple polycyclic aromatic hydrocarbons (PAHs), lead, and total organic carbon. Samples were collected from the following river reaches: Reach 4 – RMs 6.5 to 8.8; Reach 3 – RMs 4.9 to 6.5; Reach 2 – RMs 3.2 to 4.9; and Reach 1 – RMs 0.0 (mouth) to 3.2.

Preliminary Project Findings

Preliminary findings indicate the following:

- Upstream reaches are more erosional in nature, characterized by a narrower river channel, higher flow velocity, limited deposition, and coarser sediment. Downstream reaches are more depositional, with a broader, shallower channel (except at bridges), thick soft sediment deposits, lower flow velocity, and finer sediments;
- Detectable levels of PCBs exist throughout the lower river. PCB levels are lowest in Reaches 1 and 4 (consistently less than 10 ppm) and highest in Reaches 3 and 2 (greater than 100 ppm in a number of samples);
- Elevated levels of PCBs in Reach 3 are found at or near the sediment surface in a number of samples. In Reach 2, elevated PCB levels are generally found at greater depths;
- In Reach 2, just downstream of Stickney Avenue, contaminant profiles reflect long-term sedimentation. This area is the first depositional zone downstream of the “landfill section” and there is a distinct difference versus contaminant profiles in downstream areas;
- Spatial variability in contaminant concentrations is lowest in Reach 1 and highest in Reach 3;
- In Reach 3, one sediment core contained PCB concentrations up to 1,142 ppm, and several locations with surface sediment PCBs between 40 and 90 ppm; and
- Many samples in Reach 3 with lead concentrations above ecological screening levels are co-located with high PCB levels. The maximum lead concentration (680 ppm) occurred within the same core as the maximum observed PCB concentration (1,142 ppm).

Priority Area Identification

Priority areas for further remediation were identified based on available sediment data, findings of the risk assessment, locations of source and depositional areas, and consideration of the hydrodynamic and sediment transport characteristics of the lower Ottawa River. Prioritization of these areas for remediation considered various technical and economic factors, including:

- Locations of apparent PCB hot spots indicated by sediment sampling data;
- PCB mass distributions in the sediment;
- Sediment stability, which reflects potential for sediments to act as continuing sources;
- Physical accessibility of significantly targeted sediments for removal by dredging;

- Natural recovery potential in depositional areas, as indicated by sediment chemistry profiles;
- Potential for habitat disruption or impairment as a result of remediation;
- The role of good habitat in attracting receptors and providing higher likelihood of exposure;
- Project funding mechanisms (a determining factor in identifying the Priority 1 project); and
- Potential for collaborative remediation approaches among stakeholders and other parties.

Although the initial focus for sediment remediation is to address potential risks associated with total PCBs in sediments, it should be noted that significant risk reductions for other co-contaminants, like lead and PAHs that also occur in relatively high concentrations (compared to other areas of the river) in these same areas will also be realized by remediation activities. The final report will include a summary of estimated costs for implementing specific priority based remedial efforts within specific locations of the river.

Priority Area 1: Based on preliminary findings and the above rationale, PCB contamination occurring within Reach 3 appears to merit initial focus and attention. This reach is not hydrodynamically-favorable to long-term deposition and contains elevated PCB and lead concentrations at or near the sediment surface. Three specific sampling locations within this reach represent apparent “hot spots.” The conditions in these priority hot spots result in these locations being prime candidates for remediation by sediment removal. The impacted areas/volumes surrounding these sampling locations are still being evaluated, but preliminary estimates indicate 600+ pounds of PCBs could be removed from the river by removing 2,000 cubic yards of sediments from these areas. During such a removal, appropriate dredging equipment, methods and controls (including silt curtains) would be utilized to minimize potential impacts from re-suspended sediments. Sampling would document concentrations/masses of PCBs removed and residual levels of PCBs to establish post-removal baseline conditions. Legacy Act funds were requested for targeted dredging of these priority hot spots.

Priority Area 2: The second remediation priority identified is in the downstream portion of Reach 3 and also has sediments with elevated PCB and lead concentrations. The long-term effectiveness of sediment remediation in this area to permanently reduce risks depends on whether sources have been adequately controlled. In addition to further sampling to delineate target areas, residual source assessment may be needed.

Priority Area 3: The third priority area for sediment remediation is the “Stickney Avenue Depositional Zone (SADZ).” This area, at the upstream end of Reach 2, is highly depositional, with total sediment thicknesses of more than 10 feet and contaminant profiles showing deeply buried historical peak concentrations. This is the first major depositional zone downstream of the landfill section of the river and has apparently provided an effective sediment and contaminant “trap” because contamination in this area is distinctly different from that observed in downstream portions of Reach 2. The characteristics of the SADZ make this area suitable for less invasive methods such as in-situ capping, in situ treatment or MNR.

Next Steps

The implementation of this initial project is being pursued through a cooperative effort with GLNPO. After addressing these priority hot spots, the community at large should identify and evaluate the input of the initial effort and pursue subsequent complementary projects.

Progress Toward Recreational/Navigational Dredging: An Update on the Ottawa River Navigation Study

**Michele L. Hope, Project Manager
U.S. Army Corps of Engineers, Buffalo District**

Background

The Corps main mission areas are: navigation, flood damage reduction, and ecosystem restoration. Today, the Corps maintains more than 12,000 miles (19,200 km) of inland waterways and operates 235 locks. These waterways -a system of rivers, lakes and coastal bays improved for commercial and recreational transportation - carry about 1/6 of the Nation's inter-city freight, at a cost per ton-mile about 1/2 that of rail or 1/10 that of trucks. The Corps also maintain 300 commercial harbors, through which pass 2 billion tons of cargo a year, and more than 600 smaller harbors.

Toledo area residents have long supported a project to dredge a channel in the Ottawa River into Lake Erie to relieve the siltation problem and provide added safety for those entering the harbor when strong southwest winds depress the water levels. Overall low water depths impede passage of recreational boats.

The Corps of Engineers first evaluated this project in 1938 where the preliminary examination proved unfavorable for navigation improvement; again in 1976 where, although the benefit/cost ratio was 1.57 to 1, the project was terminated due to the lack of a non-Federal partner; and in 1992 where the project was found to have insufficient commercial navigation benefits to warrant Federal interest.

Current Phase

In an effort to step up the process, the City of Toledo contracted with Hull and Associates to prepare a limited reevaluation report according to Corps specifications. The fiscal year 2002 appropriation provided \$300,000 to the U. S. Army Corps of Engineers to “complete the reevaluation report and initiate plans and specifications for the Ottawa River, Ohio project.” The fiscal year 2004 appropriation added \$75,000 for the same purpose. In addition, in coordination with Congresswoman Kaptur, the Corps reprogrammed \$100,000 internally for Ottawa River.

The Hull report was the basis for the Corps report which included the Buffalo Commander's recommendation. The alternatives and assumptions in this report are the same as those in the Hull report, which Dale Rupert and Paul Hotz briefed you on in September 2002 at the last “Profiling the Ottawa River” event. The District Commander signed the Limited Reevaluation Report in December 2003. He recommended continuing forward with the project only to the amount appropriated by Congress. Because the project relies on recreational navigation benefits for economic justification, the Corps of Engineers cannot budget for this project. The report was then distributed for agency and public review, as required by NEPA. The comment period closed and five comment letters were received. Of these, Michigan DEQ opposed the project. With the assistance of the Ottawa River Remediation Team, discussions are in progress to resolve these concerns.

When the issues in the comment letters are resolved, the report will be finalized and forwarded up the management chain for review. The package must include a current Letter of Intent from the City of Toledo indicating that they understand the cash commitment required for construction and that they are ready, willing and able to provide it. The letter should also indicate that the City is willing to be the non-federal sponsor and that they are willing to execute a project cooperation agreement. The project construction costs, in May 2003 dollars, is \$3.9 million. The cost share between the government and the non-federal sponsor would be 50-50.

One of the things that the Corps is acutely aware of is that the City's funds are largely committed from various Fiscal Year 2005 budgets. A delay in the project construction would risk losing those funds, as they will not necessarily carry over. And to further complicate matters, not all the fiscal years start and end at the same time.

Cognizant of the fact that this project has stalled in the past due to the lack of a non-federal sponsor, the Corps has made every effort to use the money appropriated by Congress to best benefit the City of Toledo and this effort. To save time, we are moving in a two-pronged approach: 1.) The planning effort and 2.) The preparation of plans and specifications for construction. The planning part is awaiting the Letter of Intent from the City of Toledo.

The Corps began the survey of the proposed project route in June and completed it in August. This information is being used to prepare plans and specifications, which are anticipated to be completed by the end of the fiscal year, this month. When final, these products will be turned over to the City of Toledo.

What's next

There are presently no funds in the President's fiscal year 2005 budget or the House Energy & Water bill. The Corps will continue to participate in Ottawa River Remediation Team meetings and preparation of the Project Cooperation Agreement as long as funds hold out. There is approximately \$40,000 left of the project funds.

We share the enthusiasm of the area residents towards this project and look forward to doing further work as directed by Congress.

Summary of the Accomplishments and Plans for the Future of the Ottawa River

Ed Hammett, Chair
Ottawa River Remediation Team

Restoration progress on the Ottawa River has been based upon a steady effort for the past 15 years. In 1991 the *Maumee RAP Recommendations Report* called upon the community to address the many issues facing the Ottawa River; which has been characterized as one of the worst rivers in Ohio. As the Maumee RAP sponsors the sixth *Profiling the Ottawa River*, I have been asked to review our progress and future challenges. Before, I do, I would like to explain the Ottawa River Remediation Team and the many organizations that are collectively responsible for restoration of the Ottawa River.

Ottawa River Remediation Team

The Ottawa River Remediation Team (ORR-Team) was formed in early 1998 at the request of the Maumee RAP Ottawa River Action Group. The agencies and organizations working on the Ottawa have responded by being better organized in order to cooperate and participate in projects to improve the Ottawa River. The ORR-Team is a partnership of environmental professionals, including federal state and local governmental agencies, working with citizens to expedite the restoration of the beneficial uses through strategic watershed planning and coordination. This focus is working.

Member Organizations of the Ottawa River Remediation Team

- Federal Agencies and Organizations
 - USDA - Natural Resources Conservation Service, US Army Corps of Engineers, US Fish & Wildlife Service, US Environmental Protection Agency
 - State Agencies and Organizations
 - Ohio Environmental Protection Agency, Ohio Department of Health, Ohio Department of Natural Resources, Michigan Department of Environmental Quality
 - Local Agencies and Organizations
 - Maumee RAP, City of Toledo, Lucas County, TMACOG, Ottawa River Kleanup Association (ORKA)
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The ORR-Team developed goals to clarify what the team wants to jointly accomplish. These goals 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 fish consumption advisories on the Ottawa River.
- ◆ Achieve full attainment of the State of Ohio's Water Quality Standards.

The ORR-Team defined four (4) basic concerns to be addressed: Water Quality, Contaminant Sources, Sediment Quality, and the Restoration of the Upland and Aquatic Ecosystem. The team has identified projects for each of these four concerns. Some of the progress is noted below.

Next Steps

Water Quality: Projects such as the *Maumee Area of Concern Project* (conducted by Ohio EPA with funding from US EPA) have built the data base needed to identify and prioritize problems. General assessment of water quality conditions has been completed. Major sources of pollutants have been identified and targeted for clean up. Monitoring will need to continue in order to document the improvements, but the time for extensive study and data collection is past.

Water Quality and Sediment Assessment Sampling (1992-2004)

- Maumee Area of Concern Project ('92-'98)
- Ottawa River Sediment Screening Survey ('94-'95)
- Maumee AOC Contaminated Sediment Project ('94-'95)
- Sediment Toxicity Survey (1998)
- Ottawa River Geographic Initiative ('99-'00)
- Human and Ecological Health Risk Assessment ('99-'01)
- Sediment Remediation Priorities Project ('02-'04)

Contaminant Sources: Source elimination has been a major implementation step toward improving the Ottawa River. Since 1991, there has been a substantial effort expended by federal, state, and local agencies, as well as, private entities to remove or remediate sources of pollution throughout the Maumee Area of Concern. Many significant projects are completed or in progress. Significant progress has been made to control the wall-to-wall landfill issues that we faced in the early 90's. The remaining step is to monitor the response of the stream to these improvements to assure they are effective. The removal of Sanitary Sewer Overflows in Point Place and the elimination or reduction of Combined Sewer Overflows (CSOs) as described by Scott Sibley will be very significant bacterial pollutant source reductions. The wastewater treatment plant improvements highlighted by Robert Williams will further reduce discharges of partially treated sewage to our area waterways.

Source Elimination and Contaminant Reduction

- Dura Avenue Landfill*
- Stickney Avenue Landfill*
- Tyler Street Landfill*
- Royster/Incorporated Crafts
- AquaBlok™ Demonstration Project
- Combined Sewer Overflows
- Agricultural Runoff
- North Cove Landfill
- King Road Landfill
- XXKem*
- Toledo Tie Treatment Facility
- Urban Storm Water Runoff
- Fraleigh Creek*
- Home Septic Systems

* Completed

Sediment Quality: While the numerous source elimination activities have or are being completed, other work is underway to identify the next steps for the restoration of the Ottawa River. Between 1994 and 2000, Ohio EPA conducted extensive sediment core sampling to identify general areas and depths of contaminants in the lower and middle segments of the river. In 2001 TMACOG, with funding from US EPA's Great Lakes National Program Office, completed the *Human and Ecological Health Risk Assessments* to identify sediment hot spots and guide future remediation utilizing Ohio EPA sediment, water quality, fish and macroinvertebrate data. John Hull has described the results of the Sediment Remediation Priorities Project, which has resulted in the clear identification of next steps in sediment remediation. TMACOG and the City of Toledo have been pursuing these next steps through USEPA's Great Lakes National Program Office. A grant for developing the plans and specifications for cleaning up these sediment hot spots is just getting underway. We are hopeful that additional funds will be made available for implementing these cleanup plans through such programs as the Great Lakes Legacy Act.

Restoration of the Upland and Aquatic Ecosystem: The tasks for addressing this concern are being developed by the ORR-Team. Several approaches to restore the ecosystem will be considered including:

- ◆ **Free flowing stream restoration** projects that involve removing dams and other obstructions that serve as barriers to fish movement or restrict or alter flow conditions.
- ◆ **Wetland restoration** that allows for returning areas to their original important wetland functions affecting stream quality, hydrology and wildlife habitat.
- ◆ **Stream bank restoration** projects will provide habitat while reducing bank erosion that threatens property and contributes sediment to degrade stream quality.
- ◆ **Upland habitat restoration** is important to developing a thriving wildlife community, with an emphasis on plants and animals that are water dependent but not solely aquatic.
- ◆ **Aquatic habitat restoration** is needed to support stream quality that will allow for a diversity of fish and wildlife more like those that previously existed in the Ottawa River area.

The Future

We have come a long way in the 10 years since the first profiling session on the Ottawa River. The wall to wall dumps have mostly been addressed. There is a clear path to reduce SSO and

CSO contributions to the river. Sediment remediation is moving forward. The Ottawa River Navigational/Recreational dredging project described by Michelle Hope will allow boaters to enjoy the fruits of these clean up efforts. We can foresee opportunities for the restoration of a healthy ecosystem in the Ottawa River. We can even see that the restoration of uses in the Ottawa River may eventually allow contact and fish consumption advisories to be lifted.

Progress to date has been made through cooperation and funding. Partnerships such as the Maumee RAP and the Ottawa River Remediation Team have helped move things forward. Funding commitments from the City of Toledo, Great Lakes National Program Office of USEPA, TMACOG, and many others are allowing progress.

The primary challenge will be to maintain this cooperation and continued funding. They will be essential to finish the job of restoring the uses and condition of the Ottawa River to a fishable and swimmable condition along with the ultimate delisting of the Maumee Area of Concern.