US Army Corps of Engineers
St. Paul District

Crosscurrents

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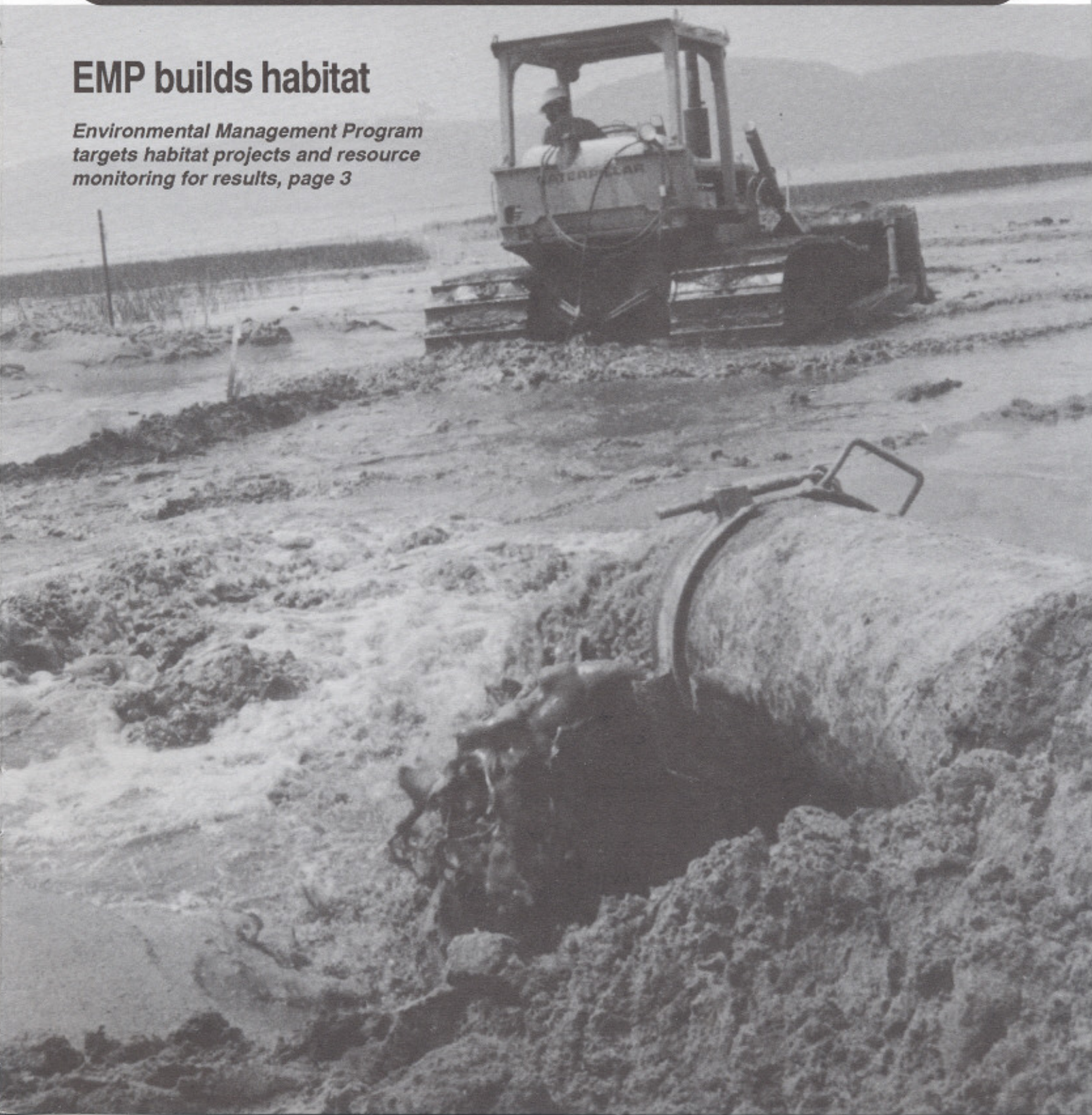


EMP builds habitat

Environmental Management Program targets habitat projects and resource monitoring for results, page 3

"We began with 100 potential projects and the top 25 are now in the program. Five of 25 projects are done, and seven are scheduled to be under construction this year."
— Don Powell, project manager

Upper Mississippi River System EMP habitat projects

Habitat Project	Total Cost ($000) (Reflects federal and non-federal estimates)	Status/remarks
Island 42, Minnesota	262	Done. Monitoring on-going. Good year-round fish habitat.
Blackhawk Park, Wisconsin	309	Done. Evaluating project performance.
Guttenberg Ponds, Iowa	343	Done. Bussey Lake project is modifying ponds to enhance operation of moist soil units.
Lake Onalaska, Wisconsin	2,271	Done. Monitoring of higher than desired flows. Dissolved oxygen levels met.
Pool 8 Islands, Wisconsin-Minnesota	330; 2,102 (multiple contracts)	Stage 2 island construction done. Now seeding. Basically complete.
Pool 9 Islands, Wisconsin	1,657	Preparing supplemental report.
Bussey Lake, Iowa	1,721; 519 (multiple contracts, cost share)	State 1 completed. Evaluating sites.
Lansing Big Lake, Iowa	918	Plans and specifications underway. Awaiting ASA approval.
Finger Lakes, Minnesota	1,460	Under construction. Biological monitoring is on-going.
Indian Slough, Wisconsin	532; 266 (multiple contracts)	Riffle pool construction completed. Stage 2 dredging awarded for this season.
Cold Springs, Wisconsin	439	Awaiting construction approval by ASA. Plans and specifications underway.
Spring Lake, Wisconsin	335	Awaiting construction approval by ASA. Plans and specifications underway.
Polander Lake, Minnesota	2,088	Awaiting construction approval by ASA. Plans and specs underway.
Trempealeau NWR, Wisconsin	3,252	Preparing preliminary draft of project report.
Long Lake, Wisconsin	293	Construction approved.
Peterson Lake, Minnesota	2,680	Developing alternative designs.
Mississippi River Bank Stabilization, Minnesota, Wisconsin, Iowa	2,500 (multiple contracts)	Final site selection in process.
Pool 8 Islands, Phase II, Wisconsin	3,680	General design begins FY 93.
Pool Slough, Iowa-Minnesota	950 (cost-shared project)	General design begins FY 93.
East Channel, Wisconsin-Minnesota	1,880	Received funds to begin general design.
Rice Lake, Minnesota	600	Received funds to begin general design.
Spring Lake Island, Wisconsin	1,930	Received funds to begin general design.
Whitewater River, Minnesota	2,110	General design delayed to FY 94 due to on-going studies.
Capoli Slough, Wisconsin	2,360	Scheduled to begin general design FY 94.
Long Meadow Lake, Minnesota	2,250	Scheduled to begin general design FY 94.

Environmental Management Program targets habitat projects and resource monitoring for results

Editor's note: The cover photo by Ken Gardner provides an upclose view of how slurry discharge is building an island from the bottom up in Pool 8 on the Mississippi River. This EMP project improved fish habitat. The bulldozer helped to shape the island into a crescent .

By Peter Verstegen, public affairs specialist

Like tributaries creating a new river, streams of data are beginning to flow from the Corps' Environmental Management Program (EMP). The emerging results are helping resource managers gain a new understanding of the Upper Mississippi River System (UMRS).

Recently completed EMP-funded surveys show both the importance of the river as an economic engine and as a complex ecosystem. For example, the nationwide economic impact of recreation at developed accesses along the system is $1.2 billion, with a total of $550 million for the states of Minnesota, Wisconsin, Iowa, Illinois and Missouri. And U.S. Fish and Wildlife Service scientists, in a separate component under the Corps-managed EMP, are documenting system-wide changes in aquatic vegetation.

The Water Resources Development Act of 1986 authorized the EMP and recognized the national significance of both the ecosystem and commercial navigation in the UMRS. Congress gave the nation's water resource manager, the Corps, the money and the responsibility to manage the program.

"The 1986 act recognized the Mississippi as a multi-purpose, multi-use system," said Don Powell, an EMP project manager. "Navigation, flood control, recreation and fish and wildlife are among these."

The law states that the river system includes "those river reaches having commercial navigation channels on the Mississippi River main stem north of Cairo, Illinois; the Minnesota River, Minnesota; Black River, Wisconsin; St. Croix River, Minnesota and Wisconsin; Illinois River and Waterway, Illinois; and Kaskaskia River, Illinois." The St. Paul, Rock Island and St. Louis Districts encompass these systems.

The Water Resources Development Act of 1992 extended the program through the year 2002.

In fiscal year (FY) 1992, the Corps spent nearly $19.5 million on EMP. The North Central Division (NCD) oversees the program. Three districts in the

St. Paul District file photo

An EMP project on Lake Onalaska, Wisconsin, created a crescent-shaped island to break up waves and restore vegetation. The photo was taken last summer.

Midwest share major responsibility for EMP. In FY 92, St. Paul's share was $4.5 million. Rock Island District received $5 million and the St. Louis District received $3 million. Finally, the U.S. Fish and Wildlife Service's Technical Center at Onalaska, Wisconsin, received $6 million in FY 92 for the long-term resource monitoring (LTRM) program.

Since 1986, the EMP has set its priorities, established a solid program and has some initial results to show for its work.

EMP addresses four priorities: habitat rehabilitation and enhancement projects, LTRM, economic impacts of recreation, and navigation monitoring. A fifth part, recreation projects, is unfunded. Ninety-five percent of the EMP budget in the three districts targets two priorities — habitat projects and LTRM.

Rebuilding habitat

In 1992, the St. Paul District spent $3.5 million for construction of habitat projects. "Normally, habitat projects are relatively small, in the neighborhood of $200,000, up to $4 million each," said Powell. "It's very rewarding to see the projects go from planning to construction in as little as three years. We began with 100 potential projects and the top 25 are now in the program. Five of 25 projects are done, and seven are scheduled to be under construction this year." (See table, page 2)

"The Corps looks at the available funding, how the project achieves diversity and variety, whether it is constructible and will get good results, the location, the impact on the local area and the system, and the state jurisdiction. We want to pursue projects with a high degree of merit," said Powell.

The projects require extensive coordination. "In the St. Paul District, the River Resources Forum endorses the projects. They are a group of state and federal agencies which help set priorities," said Powell. "The Fish and Wildlife Work Group is an organization of field biologists set up by the forum that advises the forum on river matters. The district works closely with the work group and the forum to establish biological goals and priorities for its projects. This partnership with other state and federal agencies is the strength of the program."

Long-Term Resource Monitoring

LTRM provides scientifically valid information to help resource managers manage the river for competing uses. This is the mission of the Environmental Management Technical Center (EMTC), operated by the U.S. Fish and Wildlife Service and funded by the Corps. The U.S. Fish and Wildlife Service receives nearly $6 million for the EMTC, located in the Mississippi River community of Onalaska, Wisconsin.

The EMTC employs 34 scientists and specialists — many recognized in their field of expertise. The EMTC is studying the impacts of navigation, sedimentation, water-level fluctuations, the decline of aquatic vegetation and reduced fish populations.

An additional 45 specialists work out of six state-operated field stations, from Lake City, Minnesota on the north to Cape Girardeau, Missouri, on the south, and on the Illinois River. The stations monitor water, sediment, fish, vegetation, land cover, land use, and invertebrates. The EMTC staff analyzes the data collected by the field stations in order to predict future trends in the river environment.

"The EMTC gives long-term resource monitoring of the river a science-driven approach," said Dan Wilcox, a fisheries biologist with the St. Paul District. Wilcox works half-time to provide support for the EMTC. "The EMTC staff coordinates resource monitoring, conducts research, makes technical presentations, publishes scientific articles and a newsletter and trains resource managers in the application of technology," said Wilcox.

"The EMTC has documented a decline in vegetation in the river system. The EMTC is now looking at the factors limiting growth of aquatic plants in the UMRS," said Wilcox.

Economic Impacts of Recreation study

"The EMP recreation study documented spending patterns of recreationists who enjoy the river. In the 76 counties along the river in the study area, the total annual impact of recreation spending during the study year was $400 million, supporting over 7,000 jobs. At the national level, the impact was $1.2 billion, and over 18,000 jobs," said Bruce Carlson, regional economist and recreation impacts study manager.

"Congress authorized this study of the economic impacts of recreation as part of EMP," said Carlson. "The study focused on human behavior and produced a basin-wide estimate of the total number of recreation visitors, the activities they engaged in, the amount of money spent on recreation, and the patterns evident in their spending." Complete results from the $750,000 study will be published this year.

The study estimated that over 12 million visitor-days of recreation took place during the study year. Boating, fishing, and sightseeing were the most common activities. Over 86 percent of the use took place in the St. Paul and Rock Island District stretches of the Mississippi, with 75 percent of visitors living in counties that border the UMRS. "Total boating and spending declines the farther south you go on the river," said Carlson.

Photo by Marc Krumholz

Island 42 in Pool 5, downstream of Alma, Wisconsin, is an EMP project that improved fish habitat by dredging a channel to allow for the flow of water into the island backwaters. The mouth of the channel contains a gate to control flow. Island 42 was the first EMP project built by the St. Paul District.

Spending was largely associated with trips to developed areas and marinas. Visitors spent an average of $15.84 per day during their trips.

"The study focused on uses of recreational areas that were most closely associated with management issues of the UMRS," Carlson said. These included over 600 developed recreation areas and sightseeing overlooks; 18,000 marina slips; and 2,800 permitted boat docks. "Recreational use and spending related to other types of river access are not represented in these results."

Study participants also offered their opinions on river-related issues. "Environmental quality was the most important issue for 40 percent of those surveyed, and another 40 percent cited water levels, boat traffic, safety and channel maintenance," said Carlson.

Carlson says that "the study gave us a comprehensive snapshot in time, and created a powerful tool for other agencies to use in future planning." The study will help ensure that all significant values can be considered when evaluating management options involving multiple uses of river resources.

Navigation monitoring

The Corps' EMP Traffic Monitoring Program in the Rock Island District issued a benchmark report in 1989, "Report on the Upper Mississippi River and Illinois Waterway Navigation Systems." The report provides information on the physical characteristics of the navigation system, commodities shipped, historic and projected traffic levels, and other information related to the system and the barge transportation as a whole.

The report says the inland waterways handle 57 percent of the United States grain exports, 20 percent of its coal, and 40 percent of its petroleum products. By moving large volumes of these commodities at a low unit cost per ton, the system helps to make our exports more price competitive. Barge transportation provides the competitive means to move these commodities in large volumes.

The Rock Island District, the St. Paul District and the St. Louis District are cooperating on a follow-up study to improve system capacity.

Reconciling multiple uses

The EMP recognizes the Upper Mississippi River system's many uses, balances those uses and protects the system for future generations. The EMP gives the Corps the duty to manage the use and development of the system. Through partnerships with other public agencies and various studies, the Corps continues to gather the solid data to help resource managers throughout the river system to understand and manage the Upper Mississippi River in light of its multiple uses.

Thomsen succeeds with neighborliness and safety

By Rosemarie Braatz
Writer-Editor, Construction-Operations

La Crosse Resident Engineer Arne Thomsen found that it pays to go through channels to get the job done. His savvy on the State Road Coulee Flood Control Project was one factor that earned him the "Hard Hat of the Year" award.

The project follows Pammel Creek on the east side of La Crosse, Wisconsin, as it flows down State Road Coulee from the towering bluffs above the Mississippi River Valley. Through the years, debris plugging the narrow channel intensified flash flooding in the broad residential floodplain. Emergency levees, left after the frequent flood events, and siltation, had raised the channel bed. "Levees were 12 feet high in some places," said Thomsen.

Increased housing development on the bluffs overlooking the city, with the spectacular views into the valley, escalated the frequency and severity of flooding below. "Housing development led to cutting of trees, landscaping, paving — all of which resulted in greater erosion and increased runoff," said Thomsen.

Bids for construction began after the Corps and city officials executed a local cooperation agreement in 1988. The city's share of the $30 million project came to an estimated $7.3 million.

Construction of the project presented unique challenges. "The houses directly along the stream were less affected by the flooding than houses further away, on lower ground. Yet, the project would be constructed, literally, in their back yards," recalled Thomsen.

The project was designed to deepen the channel to 15 feet, with a rectangular concrete channel replacing the creek for 13,600 feet. The concrete walls rose two feet above ground. "The wall tops are as high as the pre-project channel invert," said Thomsen.

Photo by Rosemarie Braatz

Arne Thomsen's work on the State Road Coulee Flood Control Project in La Crosse, Wisconsin, contributed to his receiving the Hard Hat of the Year Award from the Chief of Engineers. He is the resident engineer on the project.

Contractors worked inside the channel to minimize adverse impact on adjacent residences. "There was so much earthwork involved with lowering and widening the channel that we tried to keep the equipment and disturbance as far away from the homes as possible," said Thomsen. "That often meant working from inside the channel and diverting the flow temporarily through culverts. We used portions of the completed channel as a road for construction equipment."

The project also featured an inlet structure, a stilling basin, three bridge replacements, and a terminus structure. "This will provide standard project flood protection, well above 100-year flood protection, and remove the neighborhood from 'flood plain' classification for insurance purposes," said Thomsen.

A potential safety problem arose when construction cranes at one stage had to work under 169,000 volt power lines. "We used hydraulic cranes, which allowed greater control of the booms, and we placed cane poles on the ends of the booms as spacers," said Thomsen. "If a cane pole, made of non-conducting wood, touched the high voltage line, the crane operator knew he was too close."

Even as work progressed, a summer storm dumped over five inches of rain — filling the channel to four feet and washing out the construction site and burying equipment in sand.

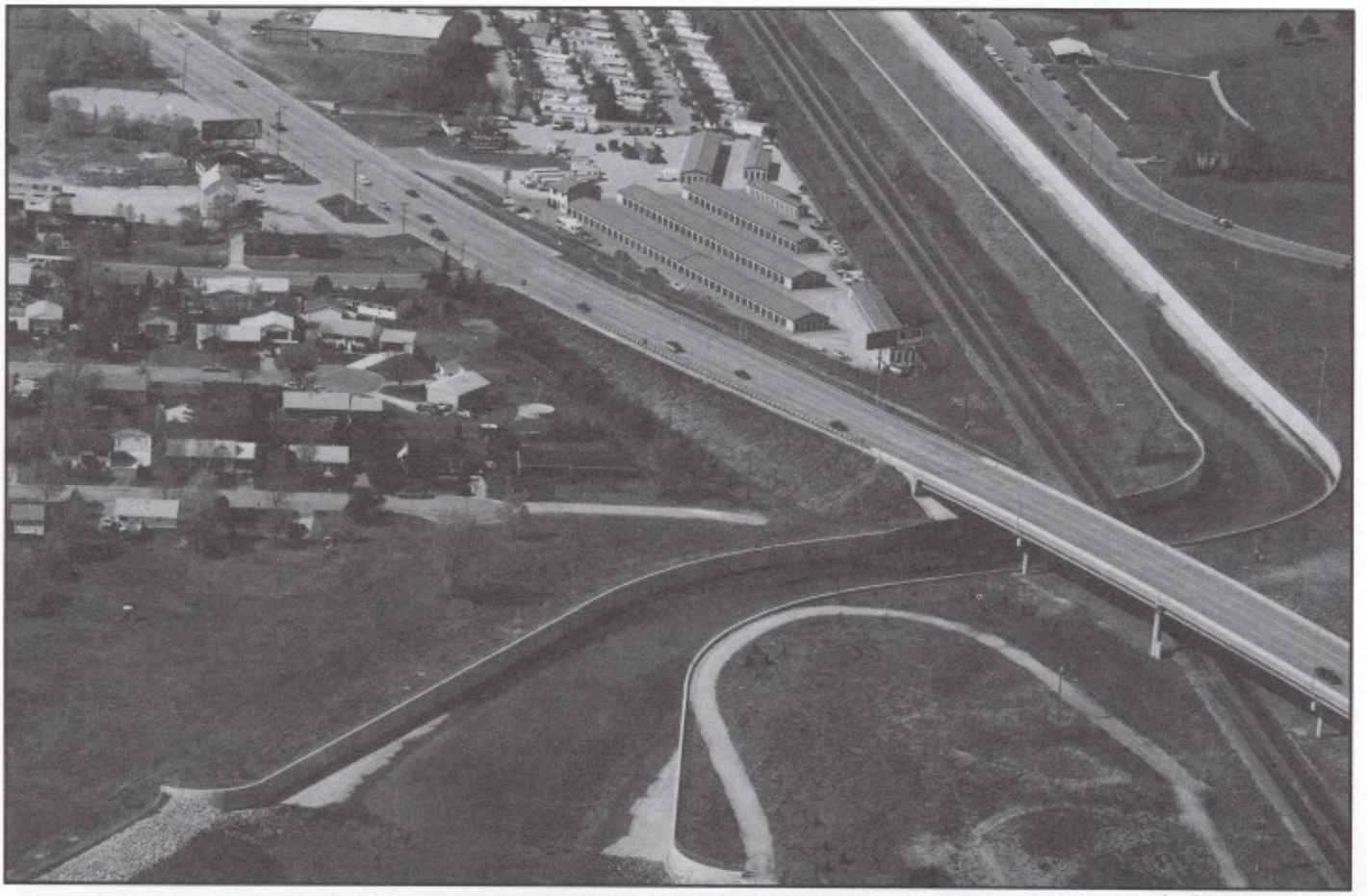
Despite the problems and setbacks, the project is nearing completion in 1993, ahead of schedule and under budget.

Project highlights

State Road Coulee Project protects La Crosse residences

St. Paul District photo

The State Road Coulee Flood Control Project is on Pammel Creek, a tributary of the Mississippi River at the south end of La Crosse in West Central Wisconsin. The $28.3 million project is designed to provide standard flood protection to residential areas. The photo at left shows how the contractor operated heavy equipment in the channel to reduce the impact on neighboring residents. The terminus structure (bottom photo) under U.S. Highway 61 slows the velocity of water flow to reduce channel scour and associated environmental impacts. The project, scheduled for completion in September 1993, is now in its third and final stage.



St. Paul District photo

Bits and Pieces

Dvorak commended

The American Association of Blood Banks commended Joe Dvorak, the lockmaster at Lock and Dam No. 1, with a plaque for giving 10 gallons of blood over 17 years. The blood bank acknowledged his "generosity to the ill and injured." Joe received his commendation at the Veterans Administration Hospital in early March.

Hernandez-Friske goes to U.S. Fish and Wildlife

Julie Hernandez-Friske, a contract specialist, Contracts Division, left March 4 for a comparable job at the U.S. Fish and Wildlife Service. She worked 10 of her 12 years at the St. Paul District in Contracts.

Hoglund leaves public service after 17 years

Pat Hoglund, a budget analyst, Construction Operations' Administration Branch, is leaving federal service after 17 years. She began her career with the St. Paul District in 1985 as an accounting technician in the old Comptrollers Division, now Resource Management and transferred in 1986 to the old Office Operations Branch, now Administration Branch. She plans to build a log cabin in Wisconsin, sleep late, enjoy nature, and spend time with her family.

Obituary

William H. Pagel, Jr., of North Minneapolis died March 8, 1993. He was a 32-year retired employee of the Corps of Engineers. He retired as chief from the old Office Operations Branch.

Speaking out

Ben Wopat, chief of Regulatory Branch, is one of four panelists who will discuss "Regulation of Wetlands: the Regulator's Viewpoints," at the Wisconsin Wetlands conference in Milwaukee, Wisconsin, May 13, 1993.

Bruce Carlson, an economist with Economic-Social-Recreation Branch, presented the results of a long-term recreation study of the Upper Mississippi River to the Upper Mississippi River Conservation Committee in Galena, Illinois, March 10.

On January 27, Don Olson of Regulatory Branch in Green Bay, Wisconsin, discussed Corps regulations and Wisconsin Department of Natural Resources section 103 involvement in the permit process with the Technical Advisory Committee of the Bay Lakes Regional Planning Commission. He also addressed the Soil Conservation Service in Northeast Wisconsin on Army Corps of Engineers regulations pertaining to SCS shallow water projects.

Hello

Construction-Operations Division
Jeffrey D. Lockington, lock and dam operator

Logistics Management Office
Lauretta L. Larson, clerk-typist

Good-bye

Resource Management Office
Carol J. Opdahl, staff accountant

Information Management Office
James C. Taylor, office automation clerk

Construction-Operations Division
Dennis H. Boardman, sandblaster
John J. Brunet, laborer
Michael A. Emmons, laborer
Kenneth L. Fleshner, sandblaster
Roger W. Gilman, painter
Douglas A. Grimsled, sandblaster
Royce A. Havlik, laborer
John K. Kochendorfer, laborer
Philip H. Kramer, laborer
Dennis J. Kupietz, sandblaster
Jerome K. Lyngdal, lock and dam operator
Wayne E. Piper, laborer
Robert A. Wildeisen, sandblaster
Duane W. Wilson, laborer

US Army Corps of Engineers
St. Paul District

Crosscurrents

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