

Wisconsin Briefs

from the Legislative Reference Bureau



Brief 04-6

April 2004

REVITALIZING THE LOWER FOX RIVER

INTRODUCTION

From the mid 1950s until the early 1970s, manufacturers released roughly 250,000 pounds of polychlorinated biphenyls (PCBs) into the Lower Fox River that contaminated its river bed sediment. The removal of this contaminated river bed sediment became necessary because PCBs are possible human carcinogens.

After years of investigation, the Wisconsin Department of Natural Resources (DNR) and the U.S. Environmental Protection Agency (EPA), in June 2003, jointly issued a Record of Decision (ROD) for the Lower Fox River. The ROD calls for the dredging and disposal of 7.25 million cubic yards of sediment beginning in the summer of 2004. Completion is expected to take at least seven years at an estimated cost of \$400 million.

BACKGROUND

Two watersheds feed the Lower Fox River: the Wolf River and the upper Fox River. They merge at Poygan Lake in Winnebago and Waushara Counties and drain into Lake Winnebago at Oshkosh. The Lower Fox River begins where the water exits Lake Winnebago. It flows in a northeasterly direction along a 39-mile route from Neenah to Green Bay, where it empties into Lake Michigan.

The Fox River Valley is one of several urbanized regions in Wisconsin. It has a sig-

nificant concentration of pulp and paper industries, with 20 mills located along or near the Lower Fox River. Proudly identified as the “paper valley”, the area paper companies produce more than 5.8 million tons of paper and paperboard annually. In 2001, paper manufacturing activities was valued at \$6.6 billion for Wisconsin.

Paper mills began locating along the Lower Fox in 1853. In 1954, the paper mills began manufacturing carbonless copy paper coated with a PCB emulsion, and PCBs were released into the river through manufacturing processes by five area paper mills.

PCBs are a classification given to a group of 209 chemicals that were produced in the U.S. between 1929 and 1978 for industrial use. They are known as hydrophobic compounds which means they dissolve more easily in fats and oils than in water, and that created a problem. In 1971, companies on the Fox River made an environmental decision to drop PCBs from the paper making process. Subsequently, in 1976, the U.S. Congress banned most applications of PCBs. While they were being used, the potential health and environmental effects of PCBs were largely unknown. According to the DNR, over 98% of the PCBs found in the Lower Fox River were discharged by the early 1970s and a portion of these had settled into the river sediments. Wildlife researchers have also detected PCBs in many fish and bird species in the Lower Fox River and Bay of Green Bay.

HISTORICAL DEVELOPMENT OF THE LOWER FOX RIVER

- **1850s:** Dams built at Neenah, Menasha, and De Pere. First Fox River paper mill built in Appleton in 1853.
- **1880s:** U.S. Army Corps of Engineers completes system of 17 locks and 12 dams on the Lower Fox River in 1884.
- **1920s:** Monsanto Co. in Anniston, Alabama, first produced PCBs in 1929.
- **1950s:** Paper industry, and municipalities begin installing wastewater treatment systems. State and federal officials urge the paper industry to produce more recycled-fiber paper. PCBs first introduced to the Lower Fox River through de-inking for recycling and coating of carbonless copy paper.
- **1960s:** Swedish research suggests first evidence of global PCB contamination in 1964.
- **1970s:** In 1972, Congress enacts the Clean Water Act, and the Wisconsin Department of Natural Resources begins investigating PCB pollution in the Lower Fox River. In 1976, Congress bans PCB manufacture, and the Wisconsin DNR issues its first fish advisories for the Lower Fox River. In 1977, the manufacture of PCBs ends in the United States.
- **1980s:** Congress passes the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) more commonly called "Superfund". The "Superfund" gave the federal government the authority and money to act in emergencies, to clean up spilled or dump chemicals threatening public health or the environment. The "Superfund" was applied to chemicals released or discharged before the law's passage, and paper mills were held liable for their previous actions. In 1986, the DNR

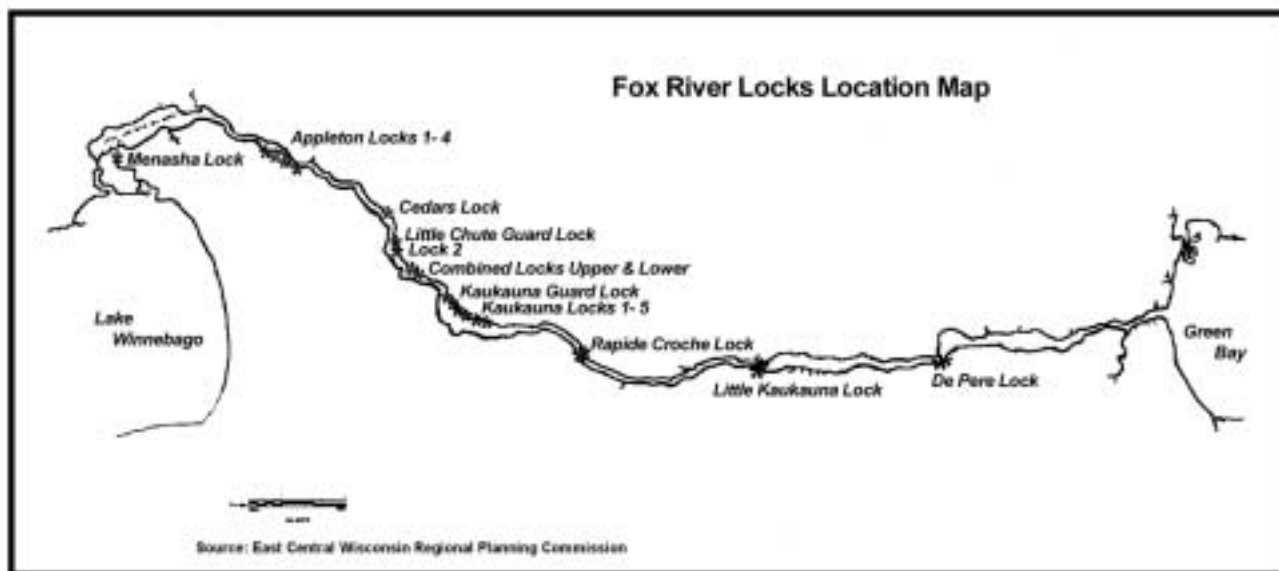
initiates the Green Bay Remedial Action Plan process, which was a joint effort of government, industry and academia.

- **1990s:** Solutions for the PCB problem are sought. In 1995, the DNR, EPA, and a public-private group called the Fox River Coalition investigate distribution of PCBs along the Lower Fox River. In 1996, the EPA lists PCBs as possible human carcinogens. In 1997, paper companies and the DNR sign agreement dedicating \$10 million to fund test cleanup projects along the Lower Fox River. In 1998, the EPA seeks official "Superfund" status for the Fox River (which never materialized), and the DNR begins dredging of PCB deposits near Kimberly (completed in 1999). In 1999, the DNR releases comprehensive study of health risks and cleanup feasibility.
- **2000s:** The DNR and EPA release a Fox River cleanup plan for public comment in 2001 with the comment period ending on January 21, 2002. In 2003, the DNR and EPA issue a "Record of Decision" cleanup report. 2003 Assembly Bill 915, which failed to pass, would have prohibited the operator of a solid waste disposal facility from accepting dredged materials containing PCBs.

THE LOWER FOX RIVER PCB CLEANUP PROJECT

Site Characteristics

A total of 12 dams and 17 locks harness the Lower Fox River. The river is relatively narrow, generally less than 1,000 feet wide over much of its length, and ranging up to approximately 20 feet deep in some areas. Where the river widens significantly, the depth generally decreases to less than 10 feet (except in the main channel). Main channel depth ranges from 6 to 20 feet. The Lower



Fox River is the single largest tributary of the Bay of Green Bay, contributing about 42% of the total drainage, over 95% of the PCB load, and 70% of the suspended sediments.

Site Cleanup Planning/Funding

Formal planning for a cleanup of the Lower Fox River began with a state-led effort in 1992. The U.S. Environmental Protection Agency joined in the cleanup effort in 1997. The EPA suggested the Lower Fox River as a potential Superfund site, a designation which Wisconsin chose to opt out of. Without Superfund status, Wisconsin has more control over the project and is relying on the five area paper companies that caused the PCB pollution to fund the cleanup. The Wisconsin DNR is the lead agency for the cleanup, which is being administered by agreement between Wisconsin and the federal government.

The current plan for the Lower Fox River cleanup calls for placing the contaminated sediment in landfills. Completion is expected to take at least seven years at an estimated cost of \$400 million. According to the original remedial action plan for the Lower Fox River and the Bay of Green Bay,

however, the cost for dredging plus off-site disposal for the five operative units from Lake Winnebago to and including the Bay of Green Bay totals \$307.6 million. To date, paper companies have paid \$60 million for dredging projects.

Where are the PCBs? Researchers have found as many as 360 different chemicals in water, sediments, fish, and wildlife from the Lower Fox River, including PCBs, dioxins, mercury, ammonia, DDT, and other pesticides.

A 1998 investigation by the DNR confirmed the presence of 35 individual contaminated sediment deposits in the Lower Fox between Lake Winnebago and De Pere. From the De Pere dam downstream to the mouth of the river at Green Bay, there is a continuous layer of contaminated sediment.

Developments Since the Record of Decision

2003 Wisconsin Act 33, the executive budget act, exempted dredging projects from the \$3 per ton recycling fee if the project has over 200,000 cubic yards contaminated with PCBs.

Disposing of PCB contaminated sediments in local landfills has led to opposition

from people living near the landfills. As a result, private concerns have offered alternatives and a bill was introduced to prohibit acceptance of dredge materials at landfills.

One alternative discussed is “vitrification”. Vitrification is a process that uses heat to convert PCB-contaminated sediments into usable building materials. The cost factor apparently makes this alternative prohibitive.

Another alternative to landfills is to use naturally occurring bacteria to eliminate PCB contamination. Two companies have demonstrated this technology in controlled laboratory settings. They have offered to test this approach on the Lower Fox River at their expense.

On February 26, 2004, Representative Carol Owens introduced 2003 Assembly Bill 915 that would have prohibited the operator of a solid waste disposal facility from accepting dredged materials containing PCBs.

Representative Owens introduced AB-915 in response to concerns raised by residents in and around the Town of Vinland in Winnebago County which is one of the planned landfill sites for a portion of PCB-contaminated sediment from the Lower Fox River. Upon introduction, the bill was referred to the Assembly Committee on Natural Resources where a public hearing was held on March 1, 2004, and, subsequently, it failed to pass.

On March 18, 2004, Governor Jim Doyle announced that the Wisconsin DNR and the U.S. EPA had reached agreement with Georgia-Pacific Corporation and NCR Corporation on design work for the cleanup of sediment contaminated with PCBs in the Lower Fox River. This agreement covers four sections of the Lower Fox River from Little Lake Butte des Morts to the mouth of the river and the Bay of Green Bay.