

SYNOPSIS - AN INVESTMENT STRATEGY FOR THE WESTERN LAKE ERIE BASIN (WLEB)

Summary: An investment in the restoration, protection and sustainable use of the Western Lake Erie Basin (WLEB) will yield dividends in the form of enhanced environmental health, economic well being and quality of life. A federally-authorized assessment identified **810** potential actions, totaling over **\$2.41 Billion** in public funding needs, within the three state (OH, MI, IN), 12 county study area. Categories include *Flood Risk Management, Water Supply, Sedimentation, and Bank Erosion* (238 projects, **\$510.2M**); *Water Quality* (374 projects, **\$1.7B**); *Resource-based Recreation* (35 projects, **\$45.8M**); *Fish and Wildlife Habitat* (135 projects, **\$111.1M**); and *Recreational and Commercial Navigation* (28 projects, **\$53.8M**) (See Tables S-1 and S-2).

Introduction: Section 441 of the Water Resources Development Act (WRDA) of 1999 authorizes a study of the WLEB to “develop measures to improve flood control, navigation, water quality, recreation, and fish and wildlife habitat in a comprehensive manner....” Ten study areas were assessed to identify existing conditions, opportunities, unmet needs, and findings and potential actions, and included the Blanchard, Ottawa, Lower Maumee, Upper Maumee, Tiffin, St. Joseph, St. Marys, Auglaize and Portage River watersheds, as well as Maume Bay. (Note: The white triangular area depicted on the map was excluded from the study authorization). Document review, intergovernmental working sessions, and stakeholder meetings and consultation yielded numerous potential actions to restore and protect the health of the WLEB and improve the economic well being of residents.



The Resource and its Significance: The WLEB encompasses 4.9 million acres of land (drained by the Maumee, Portage and Ottawa Rivers), as well as the open waters of Maume Bay- the region’s gateway to Lake Erie and one of the most biologically diverse, productive and economically important areas of the Great Lakes system. Approximately 1.2 million people live in the WLEB, distributed between three urban centers (Toledo, Ohio; Fort Wayne, Indiana; Lima, Ohio) and numerous smaller cities and towns. The connection between the water resources and economic health of the area is remarkable. Water-based tourism in Ohio’s lakefront counties alone generates more than \$7.4 billion annually, exclusive of contributions of Lake Erie sport fishing and boating (NRCS 2005). Agriculture is the predominant land use (66.0%), with annual market values exceeding \$1.2 billion (NRCS 2008 projection of 2002 Census of Agriculture). The mouth of the Maume River is home to the Port of Toledo and a vibrant recreational boating and fishing industry.

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Flood Risk Management, Water Supply, Sedimentation, and Bank Erosion: The WLEB is vulnerable to seasonal and catastrophic flooding due to flat, low lying agricultural lands, poorly



drained soils, developed floodplains and the historic loss of wetlands. Water supply is generally adequate but faces an uncertain future. Sedimentation due to agricultural and streambank erosion is a leading environmental and economic issue; the Maumee River contributes more sediment to the Great Lakes than any other tributary. *An investment of \$510.2M in 238 projects will reduce flooding risks, ensure adequate water supply, and substantially reduce soil erosion and sedimentation impacts.*

Water Quality: Water quality ranges from very poor in the lower reaches of the Ottawa River (a fishing and swimming ban has been in place since the 1991) to good quality in portions of the Portage River. Adverse impacts include unsewered communities, combined sewer overflows (CSOs), flow and habitat modifications, point source contributions (e.g., industrial outfalls, wastewater treatment plants, leaking hazardous waste landfills), failing septic systems, and excessive sedimentation and nutrient inputs from poor agricultural practices. Water quality in western Lake Erie has improved substantially since the 1970s, but recent years have seen decreasing trends with a recurrence of algae problems and anoxic conditions (i.e., “dead zone”) in the central basin. The lower main stem of the Maumee is a designated Area of Concern (AOC) under the U.S.- Canada Great Lakes Water Quality Agreement. *An investment of \$1.7B in 374 projects will substantially improve water quality by controlling point and nonpoint pollutant sources and advancing associated ecosystem restoration goals.*

s-1. Summary of estimated costs by study category.

WLEB Study Category	Projects	Cost
Flood Risk Management (1)(2)	238	\$510,219,115
Water Quality	374	\$1,684,723,568
Resource-based Recreation	35	\$45,787,752
Fish and Wildlife Habitat	135	\$111,099,855
Commercial/Rec. Navigation	28	\$53,815,000
Totals:	810	\$2,405,645,290

(1) includes also Water Supply, Sedimentation, Bank Erosion
 (2) \$360,069,975 is for Flood Risk Management

Resource-based Recreation: While significant recreational amenities (e.g., Oak Openings Region, western Lake Erie boating and sport fishing opportunities) are present, recreational potential has been significantly compromised by extensive land use alterations resulting in reduced/degraded fish and wildlife habitat, environmental contamination, limited public access, and constraints on fishing, swimming, and related water-based activities. *An investment of \$45.8M in 35 projects will enhance recreational opportunities (and local revenues) by improving both access to, and the quality of the recreational experience.*

S-2. Estimated costs by State.

State	Projects	Cost
Indiana	139	\$512,815,089
Michigan	8	\$16,175,000
Ohio	644	\$1,857,737,201
WLEB	19	\$18,918,000
Totals:	810	\$2,405,645,290

Fish and Wildlife Habitat: The quantity, quality and biodiversity of fish and wildlife habitat have been reduced via land use practices of the past two centuries (e.g., draining of the Great Black Swamp, conversion to agricultural, urban development patterns, environmental contamination). Protecting existing high quality areas is essential via reforestation, wetlands restoration, linking fragmented habitat areas, and continued environmental improvements. *An investment of \$111.1M in 135 projects will improve fish and wildlife habitat, advance ecosystem restoration goals, and provide environmental, economic and quality of life benefits.*

Commercial and Recreational Navigation: The full potential of recreational navigation will be realized if an investment is made in public access infrastructure, coupled with water quality improvements and fish/wildlife habitat enhancements. Commercial navigation on the Lower Maumee (i.e., Port of Toledo) is substantial, but could increase if annual dredging requirements are met, dredged material disposal challenges are resolved, and turning basin/infrastructure improvements are made. *An investment of \$53.8M in 28 projects will collectively ensure the future vitality of recreational boating as well as the growth and competitiveness of the commercial navigation industry.*

Next Steps: Potential projects identified in the watershed assessments provide guidance to public and nongovernmental entities with a role and responsibility in the restoration, protection and sustainable use of the water and natural resources of the WLEB. Next steps include establishing priorities, identifying existing/needed authorities, identifying lead entities, accessing funding sources, and establishing implementation schedules.

