

Integrated Assessment on Water Level Variability and Coastal Bluff Erosion in Northern Milwaukee County and Southern Ozaukee County, Wisconsin

Phase 1 Report – Interdisciplinary Synthesis of Existing Research
Draft – May 8, 2016

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EXECUTIVE SUMMARY

The Lake Michigan coast from Shorewood to Port Washington in southeastern Wisconsin is characterized by coastal bluffs ranging from 70 to 140 feet in height. Lake Michigan water levels were below the long-term average from 1999 to 2013, but began to rise in March 2014. This rapid rise in Lake Michigan water levels in the past two years is causing concern among property owners and local officials about impacts to beaches and the stability of coastal bluffs. Parallel with changes in Lake Michigan shores caused by rising water levels, the state enabling legislation for shoreland zoning and comprehensive planning in Wisconsin has undergone significant changes. Shoreland zoning, enabled by state law and implemented by local governments, is a primary management tool for addressing development along both inland and Great Lakes waters in Wisconsin. The combination of these natural and legislative events has precipitated a need to synthesize existing research on coastal bluffs and engage coastal communities and riparian property owners to explore a broader range of policy options and decision tools for increasing the integrity of coastal bluffs in the face of possible increases in the variability of water levels.

In March 2015, a team of investigators representing disciplines including coastal engineering, geology, urban and regional planning, law, policy studies, ecology, landscape architecture, and social science led by the University of Wisconsin Sea Grant Institute received a planning grant from the Graham Sustainability Institute at the University of Michigan to explore the impact of changing water levels on coastal bluffs in northern Milwaukee County and southern Ozaukee County. The key activities associated with the planning grant included information gathered from interviews with 19 stakeholders, partners and investigators on their perceptions of the issues, solutions, barriers, and information needs related to changing Lake Michigan water levels and coastal bluff erosion and a workshop held in late July 2015 to connect stakeholders, partners and investigators. A discussion and vote during the last hour of the July workshop indicated there was support for continued participation in the Great Lakes Water Levels Integrated Assessment. In November 2015, Wisconsin Sea Grant received word that it was one of four teams to receive funding from the University of Michigan to collaborate in a full Integrated Assessment (IA) lasting 18 months and building on the findings of the planning grants.

The full IA consists of three phases: synthesis of existing data and information, identification and assessment of a range of policy alternatives and adaptive actions, and integration of local findings into a regional report. The first phase included a synthesis workshop on March 31, 2016 with investigators and partners in Madison, Wisconsin. The workshop leveraged a new online bibliography of over 100 studies relevant to coastal hazards in the study area and prioritized the most relevant reports, studies and data for the IA. Phase 2 will include extensive community engagement to identify and prioritize policy alternatives and adaptive actions. This engagement will be led by a pair of experienced community facilitators and the Social Science Outreach Specialist at Wisconsin Sea Grant and will include three rounds of community conversations. The first round will consist of workshops in three locations during Summer 2016 to introduce the project; listen to hopes, wishes, concerns and issues for a healthy and vital future for coastal bluffs; and identify the widest possible range of potential policies and actions. The second round in late Summer 2016 will identify preferred policies and actions, while the third round in Fall 2016 will present the draft project report to the University of Michigan for endorsement. The final phase covers developing a final report to serve as a vehicle to integrate Wisconsin findings with those of other project teams. The desired outcome of the IA would be adoption of a select set of policy alternatives by local governments and adaptive actions by coastal property owners leading to a measurable increase in the resilience of bluffs in the study area to coastal erosion.