Great Lakes and Ohio River Division

Great Lakes Coastal Resiliency Study

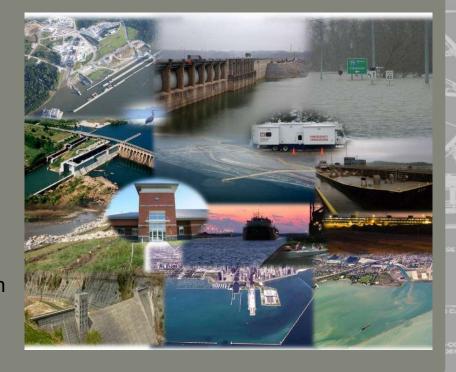
Lake Michigan Monitoring Coordination Council (LMMCC) Webinar

David Bucaro Bradley Watson

Planning Branch Deputy Director

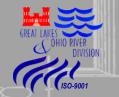
USACE, Chicago Coastal States Organization

04 May 2017



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Great Lakes Coastal Resiliency Study: BLUF

- Purpose: provide a summary of the proposed study
 - Coastal resiliency is a major focus of many federal, state and regional partners within the Great Lakes
 - Superstorm Sandy highlighted coastal vulnerabilities
 - LRD is requesting a new start study in FY19









Great Lakes Coastal Resiliency Study: Summary

Study Goal

To develop a collaborative risk-based decision framework that utilizes a systems approach to identify potential opportunities to improve coastal resilience over a range of future conditions across the Great Lakes built and natural environments.

USACE Approach

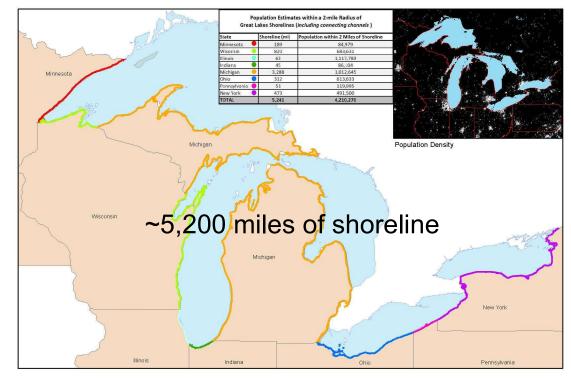
- Study conducted across three GL districts: Buffalo, Chicago, Detroit
- Technical/collaboration assistance by IWR, ERDC, PCX-CSRM
- Approach inspired by NAD's recently completed North Atlantic Coast Comprehensive Study (NACCS)

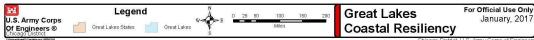
Partnerships

- Federal partners: NOAA, USGS, USEPA, FEMA, etc.
- Regional partners: Great Lakes states, CSO, GLC, IJC, Conference of Great Lakes and St. Lawrence Governors and Premiers, etc.

Budgeting

- Watershed Planning Study Authority: Section 729, WRDA86, as
 - ☐ 75% Federal / 25% Non-Federal cost-sharing
- > FY2019 USACE new start budget request
 - Non-Federal sponsor letter(s) of intent
 - □ Federal agency support letters
- ➤ USACE lead development of a study scope/budget/schedule to support budget request
 - ☐ Developed in partnership with federal, state and regional partners/stakeholders
 - ☐ Utilize all applicable data, analyses, plans either completed or underway













Great Lakes Coastal Resiliency Study: Definitions

Coastal Resilience -

the ability of a coastal environment to withstand, recover from, and adapt to disturbances and underlying stresses in order to maintain and improve economic, environmental, and social/cultural values over time. Coastal resilience applies to both built and natural environments.

Built Environment

- Populations
- Buildings
- Infrastructure
- Social/Cultural Resources

Natural Environment

- Ecosystems
- Coastal Landscapes
- Natural Processes

Future Conditions to Consider

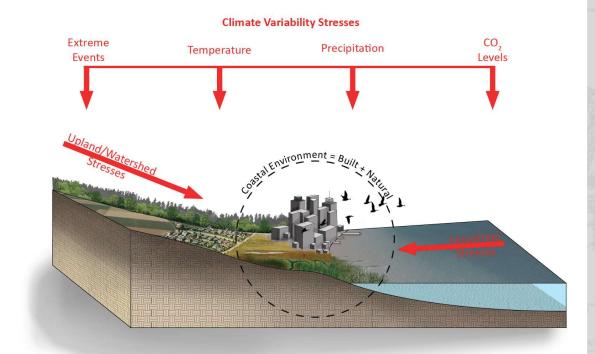
- Climate Variability
 - Coastal storm damage/frequency
 - Precipitation
 - Temperature

Development and Land Use Patterns

- Stormwater
- Agricultural runoff

Natural Processes

- Littoral transport
- Lake level fluctuations



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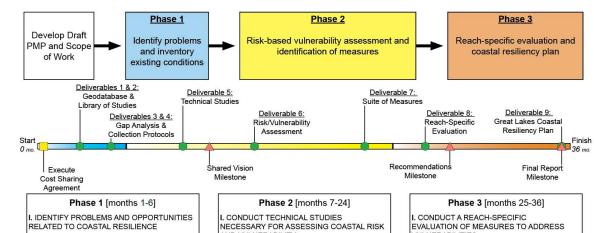


Great Lakes Coastal Resiliency Study: Framework

Major activities

- Identify problems and opportunities in each of the five Great
 - Collaboration with Federal, State and Regional stakeholders
- Inventory and analysis of Great Lakes coastal environments
 - Use and build on existing datasets
 - Identify information gaps to be filled
- Conduct technical studies to fill in identified data gaps
- Assess risk and vulnerability within the built and natural coastal environment
 - Forecast future conditions
 - Risk and vulnerability mapping
 - Identify 'hotspots'
- Formulate measures to improve coastal resilience (including benefits, impacts, parametric costs)
 - Structural. non-structural
 - Beneficial use of dredged material
 - Living shoreline restoration, natural and nature-based features
 - Institutional/regulatory
- Reach-specific multi-criterial evaluation of measures to improve coastal resilience
 - Develop metrics
 - Suitability assessment (siting)
 - Specify reach extents
- **Programmatic Great Lakes Coastal Resiliency Plan**
 - Includes risk communication tools

BUILDING STRONG® and Taking Care of People!



- a. Stakeholder outreach and soliciting input from additional partners
- b. Build upon national policies, regional frameworks, state priorities, and existing
- II. INVENTORY RELEVANT EXISTING DATA AND STUDIES
- a. Develop geospatial database and analysis
- b. Compile relevant research and published studies
- III. SYNTHESIZE AVAILABLE DATA AND PERFORM GAP ANALYSIS
- a. Identify data gaps requiring further baseline study
- b. Recommend protocols for future data collection and archival

AND VUI NERABILITY

a. To be determined based upon problems and identified data gaps

II. ASSESS RISK AND VULNERABILITY WITHIN THE BUILT AND NATURAL COASTAL ENVIRONMENT

- a. Identify the range of future conditions to be evaluated
- b. Risk and vulnerability identification and mapping (future without project)
- c. Identify high-risk coastal areas or 'hotspots'

III. FORMULATE MEASURES TO ADDRESS PROBLEMS AND OPPORTUNITIES IN VULNERABLE COASTAL AREAS

- a. Develop range of measures to improve or protect coastal resiliency
- b. Identify examples, design, constraints, benefits, impacts, life-cycle costs

VUI NERABII ITIES

- a. Develop evaluation criteria for assessing ability to improve or maintain coastal
- b. Conduct a suitability assessment for siting formulated measures along the
- c. Specify reach extents for evaluation
- d. conduct reach-specific multi-criteria evaluation of measures (future with project)

II. DEVELOP PROGRAMMATIC GREAT LAKES COASTAL RESILIENCY PLAN

- a. Interagency review
- b. Final report/decision framework preparation







Great Lakes Coastal Resiliency Study: Collaboration

- Coastal States Organization annual meeting (15SEP16, Milwaukee, WI)
 - HQUSACE, Chief Planning & Policy (Mr. Tab Brown, SES) expressed strong support
 - Expressed interest from CSO and Great Lakes state coastal management program managers
- Regional meeting of Coastal Management Program Managers (26-29SEP16, Clayton, NY)
 - Expressed state funding support from Great Lakes coastal program managers
- Inter-governmental collaboration meeting (01DEC16, Chicago, IL)
 - In-person attendance from all Great Lakes states and four Federal agencies (NOAA, USGS, FEMA, USEPA)
 - USACE-LRD (Ms. Clay), IWR (Mr. Chesnutt), LRB, LRC, LRE all attended
 - Identified major activities, available data sources, budget/schedule, and partnership opportunities.
- Scoping Work Group meetings (8 phone mtgs JAN-APR17)
 - CSO, 8 state reps, NOAA, USGS, FEMA, USACE
 - Collaboratively developed a draft scope for the study









Great Lakes Coastal Resiliency Study: Next Steps

- Draft PMP developed collaboratively (24FEB17)
 - States met on 1MAR17 in Washington, DC to solidify support for study
 - USACE is incorporating feedback recieved
- Non-Federal sponsor letters of intent (30APR17)
 - All eight GL states have expressed willingness to provide letters stating support and intention to serve as cost sharing sponsors
 - Received 5 of 8 (IL, MI, MN, NY, WI); 3 forthcoming (IN, OH, PA)
 - NOAA, USGS and CSO provided a support letters; FEMA support letter forthcoming
- FY19 New Start Budget submission (01MAY17)
 - LRD to submit new start budget request to HQUSACE
 - \$12M total study cost inline w/ similar studies (NACCS, Texas Coastal)
 - \$9M Federal cost over 4 years: FY19-\$1.2M, FY20-\$3.6M, FY21-\$3.6M, FY22-\$0.6M
 - \$3M non-Fed cost: states will provide their share as WIK



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ciated allocation of Federal funds provided through the annual Congressional appropriations pro-ted, the WCMP is interested in being a part of a Watershed Assessment Cost Sharing Agreement duty with the USACE based on a Project Management Plan and a cost-share allocation agreed to with

st-sharing for the study is based on a 75% contribution by the Federal government, with the Great Lakes and other non-federal partners, jointly responsible for a 25% contribution provided in cash, or through in-kind is. The WCMP's participation is also contingent upon NOAA approvide, authorization, and funding to use State election 305 (including non-federal NOAA 1: match funds provided by the State) and CZM Section 309 funds

is award that this letter constitutes an expression or internet to initiate a study partnership to specified water resources problems and is not a contractual obligation. We understand that work by cannot commence until it is included in the Administration's budget request, funds are d by the Congress, and an agreement is signed, it is understood that we or the USACE may opt to the study at any time after the agreement is signed but will commit to work logether as purtners to the study at any time after the agreement is signed but will commit to work logether as purtners to

WCMP looks forward to working with the USACE and other Great Lakes states on this stu-









