



DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS
441 G STREET NW
WASHINGTON, D.C. 20314-1000

CEERD-HV-Y

11 May 2012

MEMORANDUM FOR Chief of Engineers

SUBJECT: Recommendations for Research and Development Needs from the Board on Coastal Engineering Research

1. The Board on Coastal Engineering Research held an Executive Session on 7-8 February 2012 to review the role of the Board to provide you its advice and recommendations pertaining to coastal engineering. The Board continues to endorse the importance of investing in research that supports science and systems-based understandings and technology development. The Board further recommends the following Research and Development (R&D) needs developed during this meeting.

a. The Board recognizes the need to: (1) have a consolidated Federal picture of future coastal risk, (2) identify knowledge gaps, and (3) develop strategic recommendations. Therefore, the Board recommends that the US Army Corps of Engineers (USACE) convene an interagency collaborative group to establish a Federal vision and framework for understanding and managing coastal risk for anticipated future storm extremes and local sea level change. Products should include assessment of the change in risk over time, a clear strategy for communicating this risk assessment to non-Federal partners and the public, and recommendations on sustainable and adaptive solutions using conventional, environmental, and non-structural approaches. In the interest of communicating the possible gravity of future coastal conditions to a wide audience, it will be expeditious to render future scenarios for the US range of coastal regions and situations.

b. The Board recognizes the need to provide quantitative scientific and engineering foundations in support of the USACE ecosystem restoration and mitigation missions. We recommend that USACE advance coastal ecosystem science and technology to provide improved process understandings (including ecological function analysis and modeling), monetization of ecosystem services, and appropriate adaptive engineering solutions (including improved estuarine and coastal wetland flow, elevation, modeling, and management). These advancements will promote improved coastal ecosystem restoration and remediation, enhance environmental function, and reduce adverse risk in coastal flood zones.

c. The Board recommends that USACE further advance science and modeling for coastal sediments, including beach sediments, fine-grained sediments, and channel mud. USACE project performance would be improved and maintenance costs reduced through improved Regional Sediment Management for coastal storm damage reduction, deep draft navigation, and ecosystem remediation and restoration projects.

d. The Board recommends that USACE extend research of traditional and "green" coastal protection works (revetments, levees, and seawalls). There are many opportunities to reduce the cost of these works by using smaller stone or grass armor near the crest of these structures. By using grass/vegetation instead of stone or other "hard" elements, "green" coastal protection works may be more environmentally acceptable to certain stakeholders.

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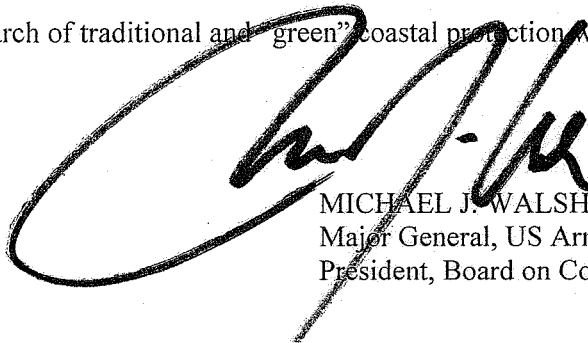
2. In summary, the Board recommends that USACE consider:

a. Convening an interagency collaborative "fusion cell" to establish a Federal vision and framework for understanding and managing coastal risk for anticipated future storm extremes and local sea level change.

b. Advancing coastal ecosystem science and science-based engineering technology to provide improved process understandings.

c. Advancing science and modeling for coastal sediments, including beach sediments, fine-grained sediments, and channel mud.

d. Extending research of traditional and "green" coastal protection works.

A large, stylized handwritten signature in black ink, appearing to read 'M. J. Walsh', is positioned over the typed name and title.

MICHAEL J. WALSH
Major General, US Army
President, Board on Coastal Engineering Research