



DEPUTY COMMANDING GENERAL
FOR CIVIL AND EMERGENCY OPERATIONS

SCOTT -
THANKS...
GREAT !!
WORK!!

(6)

CHIEF -

THIS IS OUR FORMAL REPORT TO YOU FOLLOWING
OUR COASTAL ENGINEERING RESEARCH BOARD (CERB)
BACK IN AUGUST.

OUR TRIP TO TOLEDO HARBOR WAS AN
IMPORTANT PART OF THIS SESSION. WE Brought
OUR EROC COMMUNITY TO THE STATE OF
OHIO'S PILOT PROJECTS FOR DREDGE MATERIAL
MANAGEMENT. WE ARE WORKING TO BRING
A GREATER BALANCE OF "PROGRAM-FOCUSED"
R&D TO OUR RESEARCH PRIORITIZATION PROCESS,
AND OHIO HAS A GREAT EXAMPLE OF THIS.

JOSE SANCHEZ & OUR TEAM ARE WORKING
TO ADDRESS GAPS IN OUR R&D STRATEGY
SO WE CAN MAKE A STRONGER ARGUMENT
TO THE HSA & OMB ON RESEARCH DOLLARS
IN OUR BUDGET. WE HAVE MUCH MORE WORK
TO DO, BUT READY TO GIVE YOU AN
UPDATE ON WHERE WE ARE AT YOUR CONVENIENCE
v/r SCOTT.

RECEIVED
6 NOV. 2019 SM
CERB

STAFF ACTION SUMMARY (HQUSACE) The proponent agency is CECS-X		CONTROL NUMBER 19-11-014		SUSPENSE DATE (YYYYMMDD)	
SUBJECT Outcomes from Board on Coastal Engineering Research's 96th Meeting					
OFFICE SYMBOL CECW-ZA	ACTION OFFICER MAJ SO, EARL	TELEPHONE NUMBER 202-761-4745	EMAIL earl.so2@usace.army.mil		
ROUTING <input type="checkbox"/> CS <input type="checkbox"/> CSM <input type="checkbox"/> DCG <input checked="" type="checkbox"/> CG					
FOR <input checked="" type="checkbox"/> INFORMATION <input type="checkbox"/> DECISION <input type="checkbox"/> READ-AHEAD <input type="checkbox"/> APPROVAL <input type="checkbox"/> SIGNATURE					
<p>1. Purpose. Provide Outcomes from Board on Coastal Engineering Research's 96th Meeting</p> <p>2. Background. The 96th Board on Coastal Engineering Research (CERB*) meeting was held from 13-15 August, 2019 in Detroit, MI, with the theme "Sediment Transport and Regional Sediment Management." Meeting outcomes identified Corps coastal research priorities as related to present and future Regional Sediment Management (RSM) challenges and opportunities. Meeting outcomes are related to USACE Campaign Plan Objectives 2b "Deliver the Civil Works Program using Innovative Solutions" and Objective 4a "Maintain and Advance DoD and Army Critical Enabling Technologies."</p> <p>Discussions centered around sustainable RSM practices and required coastal research. The Corps dredges and places more than 200 Million cubic yards of sediment each year. With coastal communities being impacted by coastal erosion as exacerbated by coastal storms, compound inland-coastal flooding, and rising water levels, it is critical to place sediment to reduce storm risks and enhance the environment.</p> <p>Four priority recommendations were: 1. Include Innovative Strategic R&D Targets such as sediment transport research. The present means of identifying R&D priorities is largely tactical; strategic research targets are needed to advance the Corps' innovative practices. 2. Identify sediment transport processes and RSM as a strategic research target within the modified R&D priority process. Sustainable RSM will reduce operational costs, enhance ecosystems, and reduce risks from coastal storms. 3. Establish a portion of R&D to be focused on basic research. Military programs (e.g., in ERDC, the Office of Naval Research, and others) support both basic and applied research, whereas Civil Works R&D focuses primarily on applied research in support of USACE Divisions and Districts. The Board recommended a portion of R&D funding be dedicated to basic research commensurate with other innovative R&D organizations (order of 10%). (4) Establish a CW R&D Account in the budget to highlight the Corps as a leader in innovative research and engineering.</p> <p>*The CERB was established in 1963 as an external advisory board to the Commander, to provide strategic recommendations for coastal engineering and science research in the Corps.</p>					
RELEASER MG Scott A. Spellmon, DCG-CEO (Concur 20191105; see CW Routing Sheet)		SGS 7 Nov 19 JA DCoS 8 Nov 19 CSM CoS 12 Nov 19 DCG CG 15 Dec 19			
RECOMMENDATION <i>SCOTT - GOOD NOTES THANKS FOR ALL. SEE MY NOTES ON LETTER.</i>					
ACTION <input type="checkbox"/> APPROVED <input type="checkbox"/> SEE ME <input type="checkbox"/> OTHER (Specify)					
COORDINATION					
ORGANIZATION	NAME	CONCUR/NONCONCUR	DATE (YYYYMMDD)		
CECW-ZA	CPT Hickey	Concur	20191028		
CECW	Rosati	Concur	20191008		

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

CECW-ZA

NOV 05 2019

MEMORANDUM FOR The Chief of Engineers

SUBJECT: Outcomes from Board on Coastal Engineering Research's 96th Meeting, Detroit, MI

1. I chaired the 96th Board on Coastal Engineering Research (CERB) meeting from 13-15 August, 2019 in Detroit, MI. The theme of this meeting was Sediment Transport and Regional Sediment Management with the intent to identify Corps coastal research priorities as related to present and future Regional Sediment Management (RSM) challenges and opportunities. The CERB selected this theme to highlight fundamental limitations in sediment transport knowledge and predictive capabilities, discuss the Corps' needs in operational dredging and placement technologies, and tie these limitations, capabilities and needs to sustainability of the Corps' Navigation, Coastal Risk Management, and Ecosystem Restoration missions. We planned the venue to highlight coastal processes, geology, changing environmental conditions, and ongoing innovations in RSM, coastal resiliency, and dredge material management in the Great Lakes, and identify how opportunities could be leveraged nation-wide.
2. The Detroit (LRE) and Chicago (LRC) Districts, as well as the Ohio Department of Natural Resources, presented discussion of research and development needs for regional sediment processes and management in the Great Lakes. These presentations highlighted the need to better understand unique and changing hydrodynamic and sediment transport processes on the Great Lakes, including fine sediment eroded from bluffs that is lost from the littoral system, changing ice cover on the lakes, and high lake levels that are exacerbating coastal erosion. LRE teamed with Ohio's Environmental Protection Agency to lead a technical tour of Toledo Harbor, the state-supported Great Lakes Dredged Material Center for Innovation, and visit sites experiencing record-setting high water levels. Subsequent presentations from ERDC researchers, the Corps' Philadelphia (NAP) District, and a University of Delaware researcher discussed gaps in sediment transport knowledge that hindered effective implementation of RSM for sustainable sediment management operations nation-wide. These initiatives are related to USACE Campaign Plan Objectives 2b Deliver the Civil Works Program using innovative solutions and Objective 4a Maintain and advance DoD and Army critical enabling technologies.
3. Technical presentations summarized ERDC's five priority areas of sediment transport research which were identified by ERDC researchers in a July 2019 workshop: development of an open-source modeling framework; improved remote and in situ measurement capabilities; field and lab measurements spanning a range of environments and time scales, available in an open-source format to the broader

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research community; use of a stochastic approach that quantifies natural uncertainty and model error; and better representation of interaction of sediment processes with ecological features (vegetation, biostructures, and biofilms). ERDC researchers identified a priority for field and laboratory data that span broader environmental settings, as well as temporal and spatial scales, for both cohesive and non-cohesive sediment environments. The Board also recognized the need for a national dredging laboratory that can examine innovative approaches to dredging and placing cohesive and non-cohesive sediments to optimize navigation, environmental, and coastal risk management mission goals. Broad consensus on sediment transport research topics, their relative priority, and strategies to address them requires expanded discussion and engagement with collaborators. The CERB was asked for feedback on priorities for sediment processes R&D, identification of collaborators, and best approaches to review and communicate R&D strategy.

4. As a result of these and other discussions, the CERB had several recommendations. These recommendations are targeted to structure the Corps be a leader in research and innovation, and empower coastal research to address long-term strategic needs. A complete list of the Action Items is included in Attachment A.

Agree →

a. **Modify the process for identifying R&D needs to include Strategic R&D Targets.** In the past 5 years, research priorities have followed a process defined by a field-driven, bottom-up approach in which USACE Districts submit Statements of Need (SoNs) to the research programs. Because of the origin of these needs, they tend to be tactical in nature and not focused on long-term goals (i.e., strategic targets) such as sediment transport research needs discussed previously. The CERB recommends a modified R&D approach in which top-down strategic targets can be considered, along with the bottom-up SoN process. With this modified process, priorities from USACE leadership and external advisory boards such as the CERB will create strategic R&D targets which can also steer tactical investments. A Coastal R&D Strategy documents these long-term strategic goals.

OK ✓

b. **Identify sediment transport processes and RSM as a strategic research target within the modified R&D priority process.** The USACE dredges and places more than 200 Million cubic yards of sediment each year. With coastal communities being impacted by coastal erosion as exacerbated by coastal storms, compound inland-coastal flooding, and rising water levels, it is critical to place sediment to reduce storm risks and enhance the environment. Sustainable RSM will reduce operational costs, enhance ecosystems, and reduce risks from coastal storms. The CERB recommends that sediment transport research priorities such as the initial concepts discussed during the meeting, and strategic needs as discussed in previous CERBs, form the foundation for strategic research targets for sustainable navigation, environment, and coastal and flood risk management missions. The Coastal R&D Strategy discussed above also documents these strategic R&D targets.

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OK

c. **Establish a portion of R&D to be focused on basic research.** Military programs (e.g., in ERDC, the Office of Naval Research, and others) support both basic and applied research, whereas Civil Works R&D focuses primarily on applied research in support of USACE Divisions and Districts. The CERB discussed that gaps in measuring and modeling sediment transport demonstrate a need to better understand the fundamental processes and interactions between hydrodynamics, sediment transport, and morphology. Additional basic research needs have been identified in previous CERB meetings. Ultimately, addressing these fundamental gaps in understanding does support District and Division's environmental, flood and coastal risk management, and navigation missions. The Board recommended a portion of R&D funding be dedicated to basic research commensurate with other innovative R&D organizations (order of 10%).

SOUNDS GOOD

d. **Establish an R&D Account in the budget.** Existing R&D programs are funded through General Investigations, Operations & Maintenance, and Construction General through several Remaining Items (RIs). The Office of Management and Budget has asked the Assistant Secretary of the Army for Civil Works to reduce the number and cost associated with all RIs. The breadth and impact of R&D accomplished through these RIs is often overlooked. The CERB recommends that R&D RIs be transitioned to an R&D Account in the USACE budget to highlight that the Corps seeks to be a leader in research and innovation, and minimize the perception that research is low-priority.

please check my AV AVAILABILITY

5. The next CERB Executive Session will be held March 3-4, 2020 in Corvallis, Oregon at Oregon State University (OSU) with theme: "Innovative Coastal Resilience." OSU's coastal physical modeling facilities will be a focus to inform the Engineer Research & Development Center, Coastal & Hydraulics Laboratory's physical modeling modernization plans. OSU recently hosted the Young Coastal Science and Engineers Conference, and part of the discussion will focus on this and other opportunities for academic researcher and student engagements. As you have been a champion of innovation, I invite you to attend our 2020 Executive CERB and consider giving the CERB a Charge to address a coastal topic and provide recommendations. I have several ideas we can discuss at your convenience.

6. For questions about topics discussed herein, please contact the Designated Federal Officer for the CERB, Dr. Julie Rosati, Julie.D.Rosati@usace.army.mil.



SCOTT A. SPELLMON
Major General, USA
President, Board on Coastal Engineering Research

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Attachment A: Action Items

NUMBER	ACTION ITEM	DUE [POC]
2019-Full-1	Share USACE innovation strategy with CERB	Fall 2019 [Sanchez, Wamsley]
2019-Full-2	Brief on previous industry partnerships (CPAR/REMR*) at next Exec session <i>*Construction Productivity Advanced Research; Repair, Evaluation, Monitoring, and Rehabilitation Research Programs</i>	2020 Exec CERB [Wamsley]
2019-Full-3	Identify Sediment R&D priorities	2020 Exec CERB [Smith]
2019-Full-4	Send CHL's strategic plan	December 2019 [Wamsley]
2019-Full-5	Send sediment R&D white papers to CERB	December 2019 [Smith]
2019-Full-6	Send Dr. Don Hayes' 2019 CERB presentation without animations	September 2019 [Rosati]
2019-Full-7	Identify Sediment R&D Needs to be incorporated in Ongoing Supplemental Activities	Fall 2019 [Wamsley, Sanchez]
2019-Full-8	Send CERB supplemental report on innovation	2020 Exec CERB [Moser, Rosati]
2019-Full-9	Send CERB R&D Statements of Needs	September 2019 [Rosati]
2019-Full-10	Compile R&D Needs that are summarized in each CERB talk	Continuing; at each CERB [Rosati]
2019-Full-11	Send CERB complete list of action items	Continuing; at each CERB [Rosati]
2019-Full-12	Status update on establishing R&D account in Budget	2020 Exec CERB [Wamsley]