CHIEF OF ENGINEERS
ENVIRONMENTAL ADVISORY BOARD
WASHINGTON, D.C. 20314-1000 (CECW-P)

Lieutenant General Todd T. Semonite
Commanding General and Chief of Engineers
U.S. Army Corps of Engineers
441 G Street NW
Washington, DC 20314-1000

November 13, 2019

Subject: Streamlining the CWA Section 404 Permit Process for Managing Reservoir Sedimentation

Dear LTG Semonite:

The U.S. Army Corps of Engineers' (Corps) Chief of Engineers Environmental Advisory Board (EAB), a Subcommittee of the Army Science Board, reviewed Corps' Regulatory staff experiences and expertise in evaluating permits for activities that involve sediment transport in riverine systems. The EAB recommends: (1) the development of a Regulatory Guidance Letter (RGL) to facilitate permitting of activities that restore sediment transport to sediment-starved rivers and streams downstream from non-federal dams, and (2) that sediment management training be provided for Corps Regulatory staff after the RGL is issued.

The vast majority of the Nation's 90,000 dams and reservoirs have been trapping sediment for decades[1]. As this sediment accumulates, it displaces the storage volume in the reservoirs, leading to a "reduction in the reliability of water supply, burial of dam outlets and intakes for water supply and power production, damage to hydropower and pumping equipment, burial of boat ramps or marinas, navigation impairment, and a reduction in the surface area for lake recreation, and increased flood stages upstream[2]".

At the same time, sediment trapping causes the well documented effects summarized in RGL 18-01[3]:

> Dams and other obstructions disrupt the sediment transport that is critical to sustaining the habitat of riverine and riparian species, including the variations in sediment sizes that are important for habitat heterogeneity for different life stages of aquatic organisms. Stream reaches immediately downstream of a dam or other obstruction become starved of sediment which can lead to stream bank erosion or channel incision. In coastal areas, disruption of sediment transport by dams can

[1] National Inventory of Dams. 2017. https://catalog.data.gov/dataset/national-inventory-of-dams, accessed December 4, 2018.
[2] Randle, et. al. 2019. Reservoir Sediment Management: Building a Legacy of Sustainable Water Storage Reservoirs.
[3] USACE. 2018. Regulatory Guidance Letter No. 18-01. Determination of Compensatory Mitigation Credits for the Removal of Obsolete Dams and Other Structures from Rivers and Streams.

contribute to the loss of shoreline habitats because of reduced sediment deposition in those areas.

The need for sediment management at the Nation's dams and reservoirs is increasing. The Corps has the opportunity to provide clear, streamlined guidance to facilitate actions that restore sediment continuity. Restoring sediment continuity in these rivers and streams contributes to the sustainability of existing dams and reservoirs to fulfill their intended purposes and potentially reduce the need to construct new dams and reservoirs.

Sediment continuity is achieved when the sediment generated from the watershed and upstream river channels is allowed to pass through or around a dam to the downstream river corridor. Actions that restore sediment continuity fulfill the objectives of the Clean Water Act to "restore and maintain the chemical, physical, and biological integrity of the Nation's waters." (33 U.S.C. 1251(a)).

The EAB recommends that a new RGL be created on the topic of reservoir sediment discharges. This new RGL would supplement the guidance provided in RGL 05-04[4] by focusing on permitting these activities at non-federal dams and reservoirs, and could address the following questions:

- Under what circumstances can reservoir sediment discharges be considered a restoration activity?

- How should permitting, monitoring, or other requirements differ if the proposed action discharges sediment at concentrations which are less than or equal to the natural sediment concentrations (i.e. the incoming sediment load to the reservoir) vs. actions that discharge at higher concentrations?

- How should permitting, monitoring, or other requirements differ if the downstream river corridor was a historically turbid-water system vs. historically clear-water system?

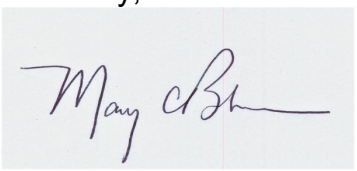
The EAB further recommends that training be offered to Corps Regulatory personnel on the principles of reservoir sediment management. A three-day Regional Sediment Management (RSM) workshop hosted in 2017 *Reservoir Sediment Management Workshop for Regulators, Planners, and Managers* [5] can serve as a basis which should be updated to include the specifics of the new RGL.

[4] USACE. 2005. Regulatory Guidance Letter No. 05-04. Guidance on the Discharge of Sediments From or Through a Dam and the Breaching of Dam, for Purposes of Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act of 1899.

[5] Shelley, J., P. Boyd, T. Dahl, I. Floyd, and M. Ramos-Villanueva. 2018. Reservoir Sediment Management Workshop for Regulators, Planners, and Managers. ERDC/TN RSM-18-7. Vicksburg, MS: U.S. Army Engineer Research and Development Center. http://dx.doi.org/10.21079/11681/27926. Slides available at - http://rsm.usace.army.mil/techtransfer/FY17/ReservoirWorkshop-Aug2017/index.php.

The lead EAB member for this task was Dr. Rollin Hotchkiss, who is available to answer any questions. We hope the recommendations will be useful and look forward to working with your staff on implementation.

Sincerely,



Mary C. Barber, PhD
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