

# Reservoir Sediment Management Workshop for Regulators, Planners, and Managers

## An RSM-University Workshop

USACE Risk Management Center  
Lakewood, CO  
August 15-17, 2017

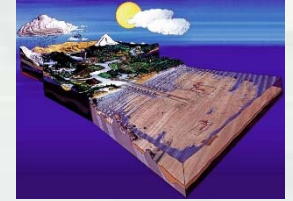


**ERDC**  
Engineer Research and  
Development Center





# The RSM-U Team

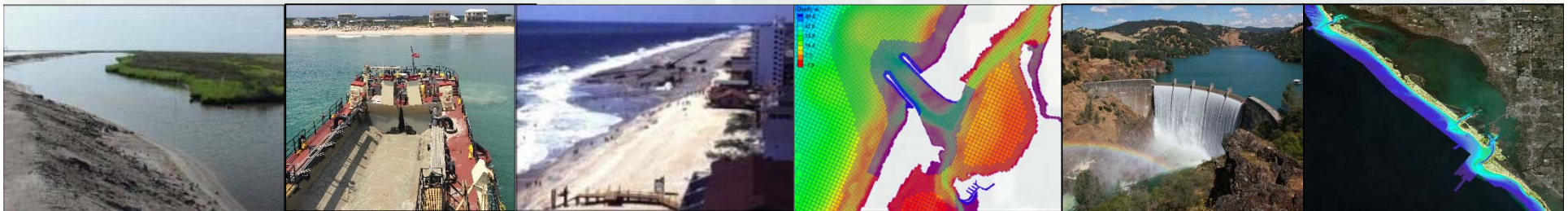


This workshop is sponsored by the USACE Regional Sediment Management Program

- **Linda Lillycrop**
  - RSM Program Manager
- **Katie Brutsché, PhD**
  - Deputy RSM Program Manager

This workshop was developed and delivered by our team of USACE SME's in Reservoir Sustainability, Management, and Sedimentation

- |   |   |
|---|---|
| • <b>John Shelley, Ph.D. P.E.</b> <ul style="list-style-type: none"><li>• CENWK</li></ul> | • <b>Ian Floyd, Ph.D. P.E.</b> <ul style="list-style-type: none"><li>• ERDC-CHL</li></ul> |
| • <b>Paul Boyd, Ph.D. P.E.</b> <ul style="list-style-type: none"><li>• CENWO</li></ul>    | • <b>Travis Dahl, P.E.</b> <ul style="list-style-type: none"><li>• ERDC-CHL</li></ul>     |



# Workshop Logistics

- KNOW THE CODE: 7536
- Restrooms
- Coffee & Snacks
- Contact Phone (Paul's USACE Cell) 402-253-6752
- Lunch on your own
- Dinner Tonight @ Chad's Grill – sign up by noon
- Will be videotaping for use by RSM and NRSST
  
- Please share your ideas and feedback
- This is a discussion, not a lecture
- Evaluation on Thursday before field trip
  
- Who are you? What connection do you have to reservoir management?





## Reservoir Sediment Management Workshop for Planners, Regulators, and Managers

August 15<sup>th</sup>-17<sup>th</sup>, 2017

USACE Risk Management Center, Lakewood, CO



US Army Corps  
of Engineers



### Why attend?

Over half of the large dams in the United States are more than 50 years old. Impacts from sediment accumulation are having significant impacts on the benefits we all take for granted from reservoirs. The current strategy to "trap and store" sediment while starving downstream channels is not sustainable and will lead to both a dramatic increase in operations and maintenance costs and an eventual complete loss of reservoir benefits. Reservoir sediment management is becoming a necessity with a goal of eventual reservoir sustainability. Regulators, planners, and managers need to be prepared to make informed decisions about reservoir sediment management activities.

### Workshop Topics:

The workshop will focus on the "big picture" of the impacts of reservoir sediment accumulation, the array of potential solutions, screening methods for sediment management options, and the reservoir management, environmental, and operational implications of both problems and solutions. The workshop will include large group lectures, breakout groups, case studies, hands-on demonstrations, and a site visit.

### Who should attend:

Regulators, managers, planners, operators, and others who want to better understand the problems and solutions for reservoir sediment management are encouraged to attend.

### Can non-Corps people attend?

State and Local agency personnel are welcomed with a USACE host.

**Tuition:** No tuition cost to participants.

### Workshop Location:

Peck Conference Room—4th Floor  
USACE Risk Management Center  
12596 West Bayaud, Suite 400  
Lakewood, CO 80228

### For Additional Information, Contact:

Paul Boyd, NWO, 402-995-2350  
paul.m.boyd@usace.army.mil  
John Shelley, NWK, 816-389-2310  
john.shelley@usace.army.mil

Cherry Creek Dam and Reservoir



**Sponsor:** This workshop is being supported by the USACE Regional Sediment Management (RSM) program, which aims to develop a systems approach to deliberately manage sediments in a manner that maximizes natural and economic efficiencies to contribute to sustainable water resource projects, environments, and communities.

Find out more at: <http://rsm.usace.army.mil/>

### Sign up at:

<https://operations.erd.dren.mil/nav/rsm.cfm?Step=1>  
by 31 July 2017



## ***Daily Agenda for Tuesday, August 15<sup>th</sup>***

<b>Time</b>	<b>Topic</b>
0830	Introductions
0900	Making the Problem Real Extreme Examples of Reservoir Sedimentation Reservoir Sedimentation Defined
0915	The Regional Sediment Management Program (RSM) and RSM-U
0945	The Future of Reservoirs without Action
1000	Break
1015	The Need for Reservoirs? Guest Lecture by Dr. George Annandale - Discussing Water Supply, Future Supply Limitations, and Reservoir Economics
1115	The Need for Reservoirs? Pt. 2 Flood Risk Reduction, Hydropower, Fish and Wildlife, Recreation, Irrigation
1145	Lunch – On your own
1300	The National Perspective – Status of USACE and Reclamation Reservoirs
1330	Mechanics of Reservoir Sedimentation Sediment Yield from the Watershed In-channel sources Delta Progression/Formation/Deposition
1430	Depart (carpool) for Reclamation Sedimentation Lab Tour
1500	Reclamation Sedimentation Lab Tour
1630	End of Tour
1800	Group Dinner – Chad's Grill



## ***Daily Agenda for Wednesday, August 16<sup>th</sup>***

<b>Time</b>	<b>Topic</b>
0800	How do We Measure Reservoir Loading and Sedimentation?
0830	Reservoir Problems Lost Benefits, In-Reservoir Environmental Effects, and Dam Safety Issues
0915	Upstream Channel Effects of Sedimentation
0945	Downstream Problems Downstream Channel Infrastructure and Environment
1000	Break
1015	Reservoir Sediment Management Actions Part 1 – Preventing Sediment from Entering Reservoirs Part 2 – Reacting to Sediment
1115	Reservoir Sediment Management Actions Part 3 – Sustainability Actions – John Redmond and Millsite Case Studies
1145	Lunch – On your own
1300	Reservoir Sediment Management Actions - Continued Part 3 – Sustainability Actions
1400	Hands-on Demonstrations of Reservoir Sediment Management
1500	Break
1515	Screening Level Analysis Methods for Reservoir Sediment Management
1600	Modeling Level Analysis Methods for Reservoir Sediment Management
1630	Who Pays for the Sins of the Watershed?
1700	End



## ***Daily Agenda for Thursday, August 17<sup>th</sup>***

<b>Time</b>	<b>Topic</b>
0800	Downstream Impacts of Reservoir Management
0830	Reservoir Sediment Management Regulation Guest Lecture by Dr. Rollin Hotchkiss
0850	The USACE Regulatory Process
0900	Regulatory Case Studies Kanopolis, Cherry Creek, Fall Creek, Spencer, Paonia, Millsite
1000	Break
1015	Permitting Case Studies – Group Exercise on Permit Requirements Tuttle Creek Dam, Gavins Point Dam, Cochiti Dam
1115	Presentation of Permit Requirements
1200	Workshop Evaluation and Feedback
1215	Lunch – On your own
1330	Case Study Presentation on Cherry Creek Pressure Flushing
1345	Depart for Cherry Creek Dam
1415	Site Visit at Cherry Creek Dam
1600	End of Workshop





# Reclamation Laboratory Tour, 8/15 from 3-4pm

Denver Federal Center, Building 56

Directions from USACE RMC:

Right W Bayaud Ave.

Left Van Gordon St.

Right on W 2nd Place. Cross Union Blvd to Denver Federal Center Gate 5.

You will need a photo ID (federal ID or driver's license) to enter the Denver Federal Center.

After guard station, drive 3 blocks and turn left on 6th St.

Building 56 is on your right. Park anywhere. Enter through main doors.

Show ID to guard inside lobby and tour guides will meet you in the lobby.





