# SUBCOMMITTEE ON SEDIMENTATION MEETING MINUTES

**June 25, 2010—WebEx**
**10:30 – 5:00 p.m. PDT**
**Capri 109, Riviera Hotel, Las Vegas, Nevada**

## DRAFT FOR COMMITTEE REVIEW

The summer meeting of the Subcommittee on Sedimentation (SOS) was held at the Riviera Hotel and Casino June 25, 2010, just prior to the "2nd Joint Federal Interagency (Sedimentation, and Hydrologic Modeling) Conferences: Hydrology and Sedimentation for a Changing Future." There was access by WebEx from 10:30 – 3:30 PDT. The meeting agenda is included as **appendix 1** in these minutes.

Thanks is due to Marie Garsjo (NRCS) for taking copious notes during the meeting, on which this summary is largely based.

**Fall 2010 SOS Meeting – September 28**: The Bureau of Reclamation has volunteered to host the fall meeting at the Denver Federal Center on Tuesday, September 28, 2010. WebEx capability will be needed. Chair John R. Gray will request a report from each workgroup two weeks prior to the meeting.

## Summary of Committee Motions (all passed unanimously):

- ✓ SOS Chair John R. Gray will send friendly email to FWHA-DOT and UCOWR to advise that their meeting attendance record is insufficient to maintain membership status (see SOS Terms of Reference: http://acwi.gov/sos_TORS_9_23_2003.pdf) on agency participation at the next meeting. A decision on the organizations' future status on the committee, in addition to resolution of organization representatives, will be sought at least 2 weeks before the next SOS meeting.
- ✓ John moved that he be given the authority to present RESSED to ACWI, and state the need for long-term base funding.
- ✓ John moved that each SOS organization provide "statement of need" summary of direct and indirect uses of reservoir sedimentation data, including needs and potential uses of a national reservoir sediment database.
- ✓ Motion to provide the 2-page concept paper distributed at the meeting for a National River Morphology Database to the SOS Geomorphic Database Workgroup. The workgroup is to deliberate on concept and report back to full committee at the next SOS meeting.
- ✓ John moved that SOS institute a third service award, the Career Recognition Award, to our other two existing awards.

**Minutes of the February 16, 2010, SOS Meeting**: These minutes, which were approved by electronic vote last winter, along with all other meeting minutes since 2001, are available at the SOS website (http://acwi.gov/sos/index.html).

**Attendance, Etc.:** John R. Gray, USGS, Chair; Matt Römkens, ARS, Vice Chair; Jerry Webb, COE; Marie Garsjo, NRCS; Paula Makar, USBR; Ron Ferrari, USBR; Doug Glysson, USGS; Jeff Bradley, ASCE; Doug Curtis, CSU; Meg Jonas, COE; "JR" Jungkyn Ahn, CSU.

Present on the WebEx teleconference were Kevin Laurent, Dave Stewart, and Jennifer Bracewell, Reston, VA, USGS; and Joe Schubauer-Berigen, Cincinnati, EPA.

Ted Yang, CSU, has retired from the committee. "JK" Jungkyn Ahn represented CSU at this meeting, but Ted's permanent replacement has yet to be identified.

Bill Jackson, NPS, indicated in advance that he would be unable to participate in the meeting due to commitments related to the Gulf of Mexico Oil Spill.

Doug Glysson and Paula Makar were juggling between duties associated with the JFIC conference and this meeting, and were present for about half of each. Claudia Hoeft, NRCS, was present during the afternoon session.

TVA was contacted and indicated interest in membership in the SOS. TVA's Mike Eiffe was a guest in the February 16, 2010, WebEx, but not in the June 2010 meeting.

## Agenda item #1: Synopsis of the SOS Membership List, Petitions for Membership, and Summary of Recent Participation

There was a brief discussion on the charter and composition of the SOS as it pertains to participation in SOS meetings. To review: The SOS provides advice on sedimentation issues to the Advisory Committee on Water Information (ACWI). The ACWI represents the interests of water-information users and professionals in advising the Federal Government on activities and plans related to Federal water-information programs, and the effectiveness of those programs in meeting the Nation's water-information needs. Its purpose is to ensure effective decision making for natural resources management and environmental protection at all levels of government and in the private sector. The ACWI website is http://acwi.gov/index.html .

The SOS has members from most of the Federal agencies with responsibilities related to sediment management or sediment data collection, management, and dissemination. Since 2004, the SOS also includes non-Federal organizations.

As determined at the fall meeting in 2009 meeting, any organization designated as "inactive" for a two-year period will be removed from the SOS roles. However, it was decided that John would contact organizations that might qualify as "inactive" to ascertain their interest in future membership in the SOS. In the event that it is clear that any "inactive" organizations wish to remain "inactive", the SOS Chair will notify the ACWI Executive Secretary by letter or email of any agency's inactivity and recommend permanent removal from SOS roles.

The agency participation sheet was reviewed and neither the National Center for Earth Surface Dynamics (NCED), the DOI Office of Surface Mining (OSM-DOI), nor the Universities Council

on Water Resources (USCOWR) has attended any meeting in the last two years. These organizations will be contacted by John before any formal action is considered.

- ✓ **Motion:** John will send friendly email asking the representative of the truant agency for their perspectives with regard to SOS membership, and remind them that they are representing the agency and it is important to ensure alternates are available in the event of the representatives' absence at a meeting. Seconded, passed unanimously.

## Agenda item #2: Reservoir Sedimentation Database (RESSED) Workgroup Report, via WebEx from USGS RESSED Management Team in Reston, VA

A WebEx for the RESSED workgroup took place from 8:00 – 10:00 a.m. PDT, June 25. The WebEx was administered by three members of the USGS RESSED-FilemakerPro team in Reston, Virginia -- Kevin Laurent, Jenifer Bracewell, and David Stewart. A progress report was presented to the workgroup, and an incomplete and not-fully functional version of RESSED in the FilemakerPro language was demo'd for the group. The two PowerPoint presentations presented in the workgroup meeting are includes as an **online attachment**.

General Goals of RESSED Project:

- Provide easy navigation for data entry
- Flexible querying/reporting/data exporting
- Integrated relational database model
- Resolve data inconsistencies

Specific Goals of the RESSED Redevelopment Effort: Provide the capability for the COE and others to:

- Input reservoir capacity and ancillary data, and
- Produce reports from the database to identify/evaluate individual or groups of reservoirs.

Progress on RESSED Filemaker Pro (including information from as late as June 30):

- A new schema has been developed by Kevin Laurent as a foundation for new development. This new (flexible, expandable) schema is the foundation upon which all current and future work/data entry/reports will rely.
- A scheme to preclude malicious use of the RESSED application – including password protection, verification of data providers, an off-line holding bin for new/changed data, and agency evaluation before uploading to the public RESSED application has been proposed.
- Data from the RESIS-II Access database continue to be ported to RESSED.
- The database is self-documented.
- A runtime version of the incomplete not-fully functional RESSED application was shared with the BR (Ron Ferrari, Lakewood, CO) and COE (Dan Pridal and Paul Boyd, Omaha, NE) for alpha testing with the request that BR and COE evaluators communicate and compare notes and provide observations to the RESSED Filemaker Pro team by July 16.

- The current RESSED website (http://ida.water.usgs.gov/ressed/ ) will remain the portal to the RESSED application with the "interim guidelines for updating RESSED" replaced with an "Explore", "Update/Change," and "Produce Reports" tab. These capabilities will be provided transparently from a USGS server in Reston, VA.
- The intent is to have a Beta version of RESSED by July 29 with subsequent work continuing later in FY2010.

One data retrieval indicates about a third of the 1,365 RESSED reservoirs with multiple surveys have lost 10%-30% of their capacities, based on subtracting the first and last capacities surveyed for each reservoir. However, given that the bulk of RESSED data are from the pre-1985 period, these statistics are probably a quarter-century old and hence may be very different (if we could quantify them) today.

## Agenda item #3: RESSED Future, and July 2010 ACWI meeting

A spirited discussion took place on "how to proceed once the FY2010 RESSED Filemaker Pro effort was concluded." Consensus was voiced as follows:

- This is an issue of national relevance/concern -- managers in several states (notably Kansas) are concerned about the long-term viability of reservoir water supplies.
- No funds have been identified for the project after FY2010. The SOS does not know how the basic application will be supported after September 2010, let alone how deficiencies in the application, and the need to expand the database's capability to capture modern reservoir-survey data, including the raw data and quality-assurance data will be supported.
- The current RESSED effort should be considered the start of a permanent, base-funded National RESSED Database.
- RESSED may benefit from linkages to a number of ancillary databases, including the National Inventory of Dams (COE), National Hydrography Dataset (USGS), StreamStats (USGS).

To this end, the RESSED Filemaker Pro team has developed a ~$250K cost estimate for year one of a minimum 4-year program to expand the application into a truly nationally integrated effort (total of about $1M 2011-2014) with out-year support costs totaling about $50K/year. In reality, permanent support of a national reservoir sedimentation database is needed, given the importance of the uses of reservoirs (public water supply, irrigation, flood control, etc.).

Without any infusion of funds after FY2010, no resources have been identified to support RESSED.

The RESSED Workgroup observes that the SOS has done well in placing the RESSED Access database online as part of a dedicated website, and in developing the RESSED-Filemaker Pro application. However, Workgroup feels that it, and presumably the full SOS, have taken maximum advantage of "local" support (both services-in-kind and funding are near approaching the end of what can be accomplished by this largely catch-as-catch-can process).

- ✓ **Motion:** John Gray moved that he be given the authority to present RESSED to ACWI, and state the need for (long-term) base funding in hopes that a line item budget will be given to the appropriate agency. Jeff Bradley seconded. Passed unanimously

- ✓ **Motion:** Gray moved that each SOS member agency provide a "statement of need" summary of direct and indirect uses of reservoir data in general and the RESSED application in particular. Please include needs and potential uses of a national reservoir sediment data base. Matt Römkens seconded. Passed unanimously.

As a result of these motions, SOS Chair John Gray has requested time on the July 13-14 ACWI agenda for two topics:

- Summarize all subgroup activities (including just-concluded JFIC).
- Provide status of RESSED project and advise that ACWI involvement toward developing a long-term RESSED project is sought.

## Agenda item #4: Dam Removal Sediment Analysis Workgroup Report

An excellent and well-attended workshop on the subject was held in October 2009 in State College, PA. Progress since that workshop has been slow, but progress has been made in preparation for the ASCE-EWRI conference. The guidelines still must be made ready for review by the SOS workgroup and then independent peer review.

One thing that the SOS needs to think about is how to publish the guidelines. Here are some options:

- Post on SOS website
- Publish some hardcopies under SOS
- Publish through ASCE
- Publish through AGU
- Publish through USSD

Tim Randle will begin Chairing the ASCE Technical Sedimentation Committee for two years beginning October 2010. This committee would like the opportunity to publish these guidelines, and they are a member of SOS. If we were to publish the guideline through ASCE, it would have to be a much faster process than the five years it is taking to publish their new manual that is largely papers from the 2005 ASCE dam removal conference. SOS may want to consider putting the guidelines on the SOS website (perhaps in draft form) while the guidelines are being published by another organization."

## Agenda item #5: Draft Attributes of a National River Morphology Database

The expansion of stream restoration efforts over the last 2 decades has occurred concomitant with advances in river morphology data collection (acquisition and standardization) and science. River morphology data are being collected by varied agencies and organizations

nationwide/worldwide. However, the data are usually collected and archived locally to address a specific issue or problem.

The Consortium of Universities for the Advancement of Hydrologic Science (CUAHSI) through David Maidment, University of Texas, and Marion Muste, University of Iowa, have discussed the feasibility of developing/compiling such a river morphology data for free public release. **Appendix 2** provides draft attributes of such a database, proposed by the USGS's Marie Peppler with input from the USGS's Faith Fitzpatrick and John R. Gray, and from Marian Muste, University of Iowa.

There was (again) spirited discussion, including the following points:

- What is the cost-benefit ratio of a national river morphology database? Large amounts of river morphology data exist; the job would entail making the data available in a logical and consistent format.
- Perhaps job 1 would be to identify the types of data available and their availability, along with their commonality. We know that there will be substantial instances of "apples and oranges" in varying river morphology data types that if stored together might be a disservice to users.
- It would be a service to the community to say how wrong these data can be, what can go wrong —need to provide protocols and references to collect and store the data properly.
- Does the endpoint have to be a database (Jerry Bernard)? Meg Jonas suggest that the 'pieces should be developed first to ascertain how the data might be organized' (her approximate words).
- What is the practicality of such an effort, what would it cost, what would be the duration of the effort, and who would lead it?
- Should SOS propose such a program, given the probability that the only way to fund it will be to "out-of-hide", i.e., at the expense of other presumably useful programs?

After this spirited discussion, the SOS referred the subject back to the extant SOS Geomorphic Database Committee to examine the practicality of this endeavor. In the meantime, Meg Jonas, COE and Andrew Simon, USDA-ARS were nominated to join extant committee that already is comprised of s Joe Schubauer-Berigan (EPA), Marion Muste (CUAHSI), Matt Collins (NOAA), Tim Randle (BR), Jerry Bernard (NRCS), and John R. Gray (USGS). . A suggested next task for the workgroup is to address the question, "Is data standardization a good idea or not?"

## Agenda item #7: 9th Federal Interagency Sedimentation Conference

Detailed discussions on the finalization of conference details were led by Doug Glysson, Paula Makar, Don Frevert, and Jerry Bernard. All arrangements had been made over the past three years, and site issues with the hotel were all in order. Jerry Webb and Don Woodward reported briefly on the content of the technical program. About 600 participants were anticipated at the conference, the plenary opening session of which takes place on June 28.

## Agenda item #6: Fluvial Sediment and Water-Quality Monitoring Program in the Mississippi River Basin

Starting in June 2009, the USGS and COE spearheaded efforts to develop the subject program as a prelude to a national sediment and water-quality monitoring program. The proposal was developed based on the realization that sediment and nutrient fluxes in and from the Mississippi River basin had major implications with respect to Gulf of Mexico Hypoxia, loss of coastal wetlands in Louisiana, public works including diversions to rebuild wetlands, dredging, and other endeavors. There is unanimity in the consensus that historical and present data amounts and types are inadequate for their intended purposes.

Two versions of a proposal – one a synopsis at 6 pages, the other expanded at 18 pages – were developed and shared with various potential stakeholders, including USEPA, USDA-NRCS, and NOAA. These proposals are included as **online attachments** to these minutes.

A 2-page synopsis of the proposal was submitted to the USGS for potential funding as a FY2012 initiative. Unfortunately, it was not selected as a potential initiative for submission to the Department of the Interior. Hence, the proposed concept remains unfunded, although the State of Louisiana and the COE might pilot part of the proposed monitoring program in Louisiana as early as 2011.

## Agenda item #8: Interagency Mississippi River Basin Initiative

Jerry Bernard reported that the USDA has launched a new initiative in the upper Mississippi River Basin to reduce nutrient losses through application of conservation land treatments. The impetus is to reduce nutrient loading to the river and ultimately to the Gulf region. NRCS is carrying out this initiative through funding of watershed projects and cost-sharing on practices with private landowners. Specific monitoring will be done both at the edge of field and at watershed levels to determine effectiveness of treatments and the resulting loading reductions for nutrients and sediment. More information is available through USDA and NRCS web sites.

## Agenda Item #9: Gulf of Mexico Oil Spill and Activities of the National Dredging Team

Jerry Bernard provided an overview of the National Dredging Team, its organization, and attempts to use dredged materials for beneficial uses. Complicating dredging activities for maintaining navigational channels in the Gulf region is the ongoing contamination of water, shorelines, estuaries, and sediments by the leaking oil well. The NRCS has developed a standard for capturing oil in water through use of various sorbents, as described in the interim national conservation practice standard 799. The standard will be used to cost share on cleanup and recovery activities.

## Agenda Item #10: Bedload-Surrogate Monitoring Technologies—U.S. Geological Survey Scientific-Investigations Report 2010-5091, 430 Pages

The subject report summarizes and synthesizes information from 4: 3rd millennium fluvial-sediment workshops, three of which were sponsored by the SOS. The core report is 37 pages in length but has 26 peer-reviewed papers totaling 393 pages that were submitted as part of the International Bedload-Surrogate Monitoring Workshop, April 11-14, 2007.

The 37-page report is available electronically at: **http://pubs.usgs.gov/sir/2010/5091/** and will be available in print Fall 2010. The 26 submitted papers are available only online at: **http://pubs.usgs.gov/sir/2010/5091/papers/listofpapers.html**.

## Agenda Item #11: Proposal for a New SOS Award Series, the Career Recognition Award

The SOS has the authority to confer two types of awards:

- SOS Outstanding Support and Project Development Award, and
- SOS Outstanding Service Recognition Award.

The former is conferred upon one who has made a significant contribution to a SOS project or program; the latter, upon one who has lead a successful SOS project or program of national significance.

A third award series – the Career Recognition Award – was proposed by John R. Gray. This award is intended for SOS members or alternates (in present or past capacity, even as retirees) who have served on the committee long and in an exemplary manner. A description of the Career Development Award, nomination, and conferral procedures are described in **appendix 3**.

The motion to offer this third type of award was seconded by Matt Römkens and passed unanimously.

## Agenda Item #12: Election of FY 2011 Vice Chair

Volunteers for the SOS Vice-Chair position in 2011 were solicited. Attendees sat motionless and were uncharacteristically silent. Eyes darted left and right. The room lights seemed to dim.

Finally someone broke the ice by suggesting that the list of SOS Chairs (http://acwi.gov/sos/sos_chair_list.pdf) be examined. It was noted that the Forest Service has not chaired the SOS since 1977, and the Park Service has never served as Chair. Ergo, with the authority vested in our committee and a measure of glee (coupled with the convenient absences of the Forest Service and Park Service from this meeting), it was decided that these two organizations should be approached to select a vice-chair in FY2011 at the September 28, 2010 meeting.

## APPENDIX 1: June 25, 2010, SOS Meeting/WeBex Agenda

10:30 a.m.—5:00 p.m.
Capri 109, Riviera Hotel, Las Vegas, Nevada

Condensed Agenda

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|---|---|
| Complete dial-in connection | |
| Welcome and roll call | Gray/Römkens |
| SOS membership | Gray |
| Synopsis of the SOS | Glysson, Bernard, Gray |
| RESSED Workgroup Report WebEx | Gray, Bernard, Webb |
| Lunch | |
| RESSED future, upcoming ACWI meeting | Gray, Webb, Bernard |
| Dam Removal Sediment Analysis Group | Makar for Randle |
| River Morphology Database Workgroup Report | Gray |
| 9th FISC Workgroup Report | Bernard, Webb |
| Fluvial Sediment Data in the Missouri and Lower Mississippi River Basin Proposal | Gray, Webb |
| USDA Mississippi River Basin Initiative | Bernard |
| Gulf of Mexico Oil Spill and Activities of the National Dredging Team | Bernard |
| Break | |
| International Bedload-Surrogate Monitoring Workshop Report—SIR 2010-5091, Published | Gray |
| Proposal for New SOS Award Series | Gray |
| Election of new Vice-Chair | Committee |
| Other Business | Gray/all |
| Location and Date of next SOS meeting | Gray |
| Wrap-up | All |
| Adjourn | |

## APPENDIX 2: Draft Attributes of a National River Morphology Database

Marie Peppler & Faith Fitzpatrick, USGS Wisconsin Water Science Center
John R. Gray, USGS Office of Surface Water & Chair, ACWI Subcommittee on Sedimentation
Including Insights from David Maidment, University of Texas & Member, CUAHSI

**Submitted to the Geomorphic Database Workgroup,**
**Subcommittee on Sedimentation**

June 10, 2010

Numerous Federal and other governmental organizations, academia, and the private sector collect and use river morphology data. These data, collected for disparate purposes and stored in local databases, are usually unknown and unavailable for use in broader- and longer-scale syntheses by the research and management communities. The Nation would benefit from a public standardized National River Morphology Database (NRMD) predicated on consistent data-collection and storage protocols.

To this end, the ACWI's Subcommittee on Sedimentation has collaborated with the USGS Wisconsin Water Science Center and the University of Texas to develop draft attributes of a NRMD. The database needs to:

- Store many types of data, including spatial, raw and calculated, along with supporting documentation, such as photographs and scanned field notes and maps.
- Be displayed in spatial, graphical and tabular forms (maps and cross-section plots with measurements).
- Accommodate repeat measurements to enable temporal and spatial river morphology comparisons.
- Provide an online means to efficiently view, analyze, and export data

Following are specific data types that would need to be accommodated in an NRMD:

**I. Spatial data needs include:**

1. Reach endpoint locations
2. Transect locations
3. Sample collection locations (sediment, water, etc.)
4. Gage location
5. Drainage basin boundary used for calculations

**II. Raw data include:**

1. Survey information from a variety of instruments, including GPS and conventional equipment
2. Pebble count information which could include map, soft sediment information and vegetation information
3. Bank characteristics, both quantitative and qualitative
4. Bank erosion location and size and estimated bank retreat
5. Erosion pin data
6. Lab reports from sediment analysis

**III. Calculated data include:**

1. Analyzed survey data into cross sections and longitudinal profiles
2. Summary statistics about channel shape (width, depth, area, etc.) for each cross section and reach averages for both the active channel and bankfull channel
3. Pebble count bins and summary statistics (% type, D50, etc.)
4. Multiple slope measurements (riffle, water surface, bankfull, thalweg, etc.)
5. Channel and valley shape metrics (Flood prone width, Bankfull width to depth ratio, entrenchment ratio, etc.)
6. Planform characteristics (sinuosity, meander radius, etc.)
7. Basin land-use characteristics

**IV. Additional data include:**

1. Scans of raw field notes and lab sheets
2. Photographs, including location information and photographer
3. Additional supporting files from the gage information (Station Analysis, Station Description, rating curve, Log-Pearson Type III analysis, etc.)
4. Discharge measurements and short-term stage information (or direct link to miscellaneous measurements portion of ADAPS)
5. Name of protocol used for collection, agency and personnel

The authors seek perspectives from the Subcommittee on Sedimentation and others to refine the NRMD concept and to seek the ways and means to initiate its development.

## APPENDIX 3: Verbiage for the New Subcommittee on Sedimentation Career Recognition Award

This award is intended for SOS members or alternates who have served on the committee long and in an exemplary manner. The potential recipient can be a member/alternate or past member/alternate of the SOS, and include retirees. It can be bestowed only once to a given person. Anyone inside or outside the SOS can submit a nomination to the SOS Chair, or in her/his place, the Vice Chair.

The SOS Chair, or in her/his place, the Vice Chair distributes the nomination to all voting members of the SOS seeking an "aye" or "nay" vote. A simple majority of votes of the SOS committee members or alternates (one vote per SOS organization) minus the nominee is required for acceptance. Abstentions from voting effectively reduce the total number of votes required to accept the nomination.

In lieu of an "aye" or "nay" vote, any SOS member may request a meeting (conference call) of SOS members exclusive of the proposed recipient to resolve any concerns associated with the nomination.

Upon acceptance, the award letter is written by the nominating individual for the Chair or, in her/his place, the Vice Chair's signature. A plaque is purchased and appropriately inscribed with funds available through the SOS parent Organization; and presented without prior notification to the recipient at the next SOS meeting, if possible, or via another mechanism that retains the personal nature associated with the award.