Connecting Nebraska & South Dakota, Chief Standing Bear Bridge spans the Missouri River outside what was the west edge of Lewis & Clark Lake. The Niobrara River confluence is nearby. The Niobrara River contributes 50 to 60% of the annual sediment load. (August 2022)

2024: Scoping Phase 3

2023 News: Onward!

- Phase 2 Report Completed
- Scoping of Phase 3 to begin
- Kostal presents at MECA Annual Meeting in Denver

Timeline for Building L&C SMP

Phase 2 Milestones:

- Kickoff Call: Feb. 26, 2021
- Solutions Workshop: June 15-17, 2021
- Econ Analysis Results (WebEx): Feb. 1, 2022
- 50% Draft Report: October 2022
- 90% Draft Report (virtual): December 2022
- Final Report Delivered: **December 28, 2023**

USACE proposal for sediment collector test on Niobrara River

Approved ...

Read more on pg. 5

Visit MSAC's website at www.keepitwater.org for additional information.

Key Components of Phase 2:

- Listing a range of potential management methods to consider for detailing in Phase 3
- General ID of Beneficial Uses of Sediment
- Project History & Landscape
- Economic Analysis Inventory
- Inclusion of Guardians of the Reservoir Winners & Emerging Technologies

View the Phase 2 Report & Economic Appendix at www.keepitwater.org. Reports also available at the USACE Digital Library.

New phase of L&C Lake SMP development to kick off in 2024

YANKTON, SD - Completion of the Phase 2 report for the Lewis and Clark Lake Sediment Management Plan (SMP) Study marks a major milestone with new answers and questions. MSAC and stakeholders will push to build upon these findings in Phase 3 expected to start this spring.

"There is no single solution and this report clearly shows the complex nature of the environment we are dealing with," said Scott Kostal, MSAC executive director. He points out that this is the first time that a comprehensive approach has been taken to address sedimentation problems at the upper Missouri River system's most endangered reservoir.

Annually, nearly 3.8 million cubic yards of sediment enter Lewis and Clark Lake. Additionally, an estimated one million cubic yards are deposited above the lake. Originally the open water at Lewis & Clark Lake spanned 25 miles upstream in 1955. In 2011, open water only reached 17 miles due to 30 percent of the reservoir's storage capacity had filled with sediment.

The US Army Corps of Engineers (USACE) project team completed Phase 2 Dec.28, 2023. MSAC began the discussion in 2018.

A few items learned in Phase 2:

- An effective SMP for Lewis & Clark Lake and upper reaches will encompass several different components, working together, to achieve a sediment balance. Short, Medium and Long-Term goals are outlined.
- Two primary areas of concern in the Short-Term are water supply intakes and Lazy River Acres. A Short-Term goal is to establish multiple pilot projects.
- Incremental changes in the reservoir sediment balance designed to increase its life span are necessary steps in reaching full sustainability.
- If full sustainability is to be achieved, it is essential that downstream placement be used for a large percentage of the sediment to be managed.
- The cost of decommissioning Gavins Point Dam is a critical economic factor that has not been estimated in detail but will be substantial. Removal of the embankment and a return to a more riverine flow over a period of 40 years could cost between $200 million and $1 billion in today's dollars.
- Today the project still provides extensive benefits, which are impacted by sediment and these impacts will continue to grow.
- An increasingly difficult issue with sedimentation upstream is the rising water table. This causes more frequent and more destructive flooding.
- If sedimentation remains unchecked, there are an estimated $68 million in structural buyouts in the upcoming years (2023 estimated dollars; not including value of contents or vehicles.) Agricultural land buyouts could reach 6,780 acres with a total value of $25.9 million.
- The total historical costs associated with coping with increased sedimentation behind the dam and the lack of sediment below the dam totals $362.7 million. This is a running figure that began as soon as the dam was closed.
- This study considers economic benefits that extend longer than the USACE's traditional 50-year period of analysis, and explores effects associated with a 150-year study window. This allows USACE and the sponsors to better assess decisions based on a life-cycle approach to sediment management within the reservoir.
- In the 2003 Niobrara and Missouri Rivers Sedimentation Strategy Report, the USACE identified a dredging project to have a .77 benefit cost ratio.
- There are seven methods of sediment management described and briefly reviewed for environmental impacts. Three were finalists in the Bureau of Reclamation sponsored Guardians of the Reservoir prize competition.
- Also outlined in proposed solutions is Howard Coker's "Conversion of a Missouri River Dam and Reservoir to a Sustainable System," which has gained new relevance with emerging technologies.

The 104-page Phase 2 Report and 56-page Economics Appendix can be found at www.keepitwater.org or at the US Army Corps of Engineers Digital Library. MSAC encourages your feedback as plans are made for Phase 3.

CONTINUED ON PAGE 3

cont'd pg 2: **New phase of L&C Lake SMP development to kick off in 2024**

The process, partnerships, and products needed to complete this project will be used in future efforts on other reservoirs. An SMP is intended to be a living document. New technologies will emerge. The economic landscape will change, such as the $90 million investment planned for Nebraska state park and marina facilities on or near Lewis and Clark Lake. This is one study that can't sit on the shelf. It is intended to lead to one or more pilot projects and eventually outline steps toward achieving a sediment balance and reservoir/benefit sustainability.

MSAC expects to learn more about the potential cost for Phase 3 early in 2024. In November of 2023, MSAC requested full federal funding to move forward after learning about opportunities for economically disadvantaged areas. MSAC will continue to update stakeholders on the funding outlook to continue SMP development for the Lewis and Clark Lake region.

MSAC and stakeholders took an active role in outlining the objectives of Phase 2. With input from consultants, stakeholders and others, MSAC provided feedback to the Corps as Phase 2 progressed. Stakeholders were vocal participants during the Solutions Workshop. The Corps' project team was responsive to MSAC feedback. This process will be important again with Phase 3.

MSAC encourages the public to review the Phase 2 reports and provide feedback. Find the Phase 2 report and Economic Appendix at **www.keepitwater.org.**

Executive Director Scott Kostal :
msacdirector@keepitwater.org or 605-464-1067
Communications Coordinator Sandy Stockholm:
msacinfo@keepitwater.org or 605-661-1594.

Phase 3 is expected to address these questions:

- Which sediment management methods would be analyzed more fully?
- What are specific beneficial uses and placement of sediment related to the management methods?
- Are there sediment and water quality issues that would eliminate a method from consideration?
- What pilot projects can be implemented in the near future to provide critical information?
- What are the local, regional, and national level impacts of any sediment transport, placement, and discharge from Lewis and Clark Lake?
- Who are the partners that need to be involved in addressing impacts of sediment transport, placement, and discharge?
- Is there additional economic analysis needed?
- In addition to the Federal government, who are the funding partners?

Views of the Springfield Marina & Area through the years: (Bottom Left) Photo from the South Dakota State Historical Society taken in the early 1960s. (Bottom Right)Area resident provided photo from 1981 looking down Springfield's Main Street toward the marina. (Right) MSAC Photo taken in 2007. (Left) MSAC photo taken in 2022.

MSAC relies on your membership contribution to meet annual expenses such as insurance, accounting, office rent & expenses, professional assistance and part-time labor. It also makes applying for grant funds possible along with education and research efforts.

THANK YOU: to the Yankton Area Foundation for a $900 grant to purchase a large format printer, making this newsletter & future ones possible

About MSAC:

Founded in 2011, 8 volunteer board members serve MSAC, a 501(c)3 nonprofit organization with a mission to educate and promote action to address sedimentation in and around the Missouri River Reservoirs.

MSAC Vision:

Sustaining our nation's reservoirs for future generations takes a shift in thinking. MSAC wants to join with stakeholders and river managers in building comprehensive plans, taking into account more accurate pictures of actual costs and benefits to sustain the life of the Missouri River reservoir system.

Board of Directors:

The 8 volunteers serve three-year terms. Director members are elected/re-elected at the annual meeting typically held in May. In May of 2024, MSAC members will elect a President. Currently, the Vice President functions as the President.

RANDY HOLMQUIST
Board of Director, Mitchell (2024)

Randy grew up on a White River ranch & is a Holistic Mgmt educator

MARY HURD
Vice President, rural Avon (2025)

A founding member of MSAC, Mary & her husband Rick farm next to MR

KERSTEN JOHNSON
Board of Director, Sioux Falls (2023)

Kersten serves for Missouri River Energy Services in public policy info

BUTCH BECKER
Secretary/Treasurer, Yankton (2024)

Retired forensic insurance & eng. spec. Grew up on & around LC Lake

NATHAN JOHNSON
Board of Director, Yankton (2024)

Nathan serves on the Yankton City Commission & was Mayor 3 years

PAUL LEPISTO
Board of Director, Pierre (2025)

Paul works for the Izaak Walton League in SD-NE-IA on MR issues

ALISHA BARTLING
Board of Director, Santee Sioux Nation (2025)

A life Knox Co resident, Alisha serves as environmental director for SSN

TIM COWMAN
Board of Director, Vermillion (2023)

Tim serves as State Geologist - SD Geological Survey part of SD DANR

Closer look at sediment collectors gains traction

From MSAC Reports - information was taken from USACE's Niobrara River Sediment Bedload Collector Pilot Project RSM proposal

YANKTON - Later this year watch for sediment to be harvested from the Niobrara River for at least one week during a bedload collector pilot project coordinated by the US Army Corps of Engineers (USACE)- Omaha District and in collaboration with the Corps' ERDC Environmental Lab and MSAC.

MSAC expects more information soon regarding the project upon confirmation of full funding availability in 2024. This is expected by the end of February, with a project start date sometime later in 2024.

This effort is made possible by the Corps' Regional Sediment Management (RSM) Program. In 2023, MSAC applied to the EPA's Environmental Justice Collaborative Problem-Solving grant program with a very similar proposal. Our EPA effort was unsuccessful but provided a great learning experience for MSAC staff.

The Niobrara River contributes between 50 and 60 percent of the total sediment load into the Missouri River reach that makes up the Lewis and Clark Lake delta. This condition is termed "chronic" due to the nearly unlimited sediment supply and slow and continuous delivery, which is heightened during flood events. "This condition makes it an excellent candidate for this type of passive collection system that can operate continuously," stated in the USACE proposal.

A future full-scale project could support sediment management efforts in the Lewis and Clark Lake region required to reach a sediment balance. In the near term an operational bedload collector could assist in reducing the sediment load, and begin the process of extending the reservoir's lifespan and associated benefits.

The 2024 pilot project will place a 12-foot collector in the Niobrara River for a minimum of one week. The USACE's ERDC (Engineering Development and Research Center) has been examining collectors for the past 20 years. Most of the previous work was with small collectors, measuring 2 to 4 feet, or in conjunction with existing installations of up to 30 feet.

MSAC is planning to build upon this effort by researching beneficial uses for harvested sediment. This has been one of the sticking points for bolstering the sediment collector idea, and in fact, all sediment extraction proposals. A criticism has been merely harvesting the sediment and placing it on shore - only moves the problem to a new location and that storage of such large amounts will be impractical. Demonstrating the effectiveness of a bedload collector is a big step in finding markets for the material.

Learn more about sediment collectors and their potential application on the Niobrara River by watching MSAC's YouTube channel - Annual Meeting 2017.

Components of the Sediment Collector™ at the Fountain Creek, Colo., installation. (Tucker et al., 2015)

A 12-foot collector would be placed in the Niobrara River for at least one week to collect and analyze the efficiency of collection in the high-bedload conditions common on the Niobrara River.

Collector Persistence

Annual Meeting 2017

LINK: https://www.youtube.com/watch?v=Ivn89yQSpKs

At MSAC's Annual Meeting March 7, 2017 in Yankton, SD, Jason Ziss with Kurtz Bros. delivered information about how sediment collectors could work to reduce the amount of sediment reaching Lewis and Clark Lake from the Niobrara River. The presentation includes information from Brian Hinrichs, of Foth Infrastructure and Environment, concerning funding opportunities for this potential project that not only provides economic protection by sustaining an existing reservoir, but economic opportunity by harvesting a reusable resource - sand.

MSAC continues work to forge pathways to sustainable reservoirs

Scott Kostal, MSAC executive director

Happy New Year to our MSAC family. As we all sit here in the deep freeze it is a great time to reflect on 2023 and look forward to an exciting year. MSAC ended 2023 with a Christmas present when the USACE-Omaha team sent us the finalized Phase 2 report for the Lewis and Clark Sediment Management Plan study. For nearly five years this has been a primary focus of MSAC. Through a few scheduling issues, some frustrating "it's coming soon" announcements, and a couple of pandemic related delays, the report was received to us on December 28th.

The final half of 2023 had myself, Sandy, and the MSAC board working directly with USACE to bring this phase to a close and move the project forward to the next phase.

The persistence and patience has worked. The report includes both a primary report and an economic appendix. The primary report provides a solid base of information from the Solutions Workshop as well as items from the Guardians of the Reservoir competition. The economic appendix, while certainly a topic of current and future discussion, does show the value of our purpose - maintaining healthy reservoirs now is the best economic value for the future. There is no single solution and this report clearly shows the complex nature of the environment we are dealing with. Phase 3 will be starting this spring. The final product is a Sediment Management Plan for Lewis and Clark Lake, and for the first time, a comprehensive pathway forward to addressing the sediment issue on the most endangered reservoir in the upper Missouri River system. The process, partnerships, and products needed to complete this project will be used in future projects on other reservoirs.

This spring MSAC submitted for a EPA Environmental Justice grant for a bedload collector project on the NIobrara River. It was a quick turn around and the USACE team worked with us to get the grant submission completed. We also had partners come on board to help facilitate the project. Ultimately, MSAC was unsuccessful and did not make the cut for the grant. The EPA provided us with a detailed review of our submission and we learned a lot during this process. Thanks to the close cooperation with USACE, the Omaha team submitted a similar project request through internal USACE channels and were successful. MSAC was informed in December that, pending their final budget approval, their project would be funded for a bedload collector pilot project on the Niobrara River. The pilot project is anticipated in late summer/early fall 2024.

This is great news and demonstrates the value of MSAC's persistence and partnerships. The bedload collector is one of the identified projects in the Phase 2 report to help reduce the incoming sediment load from the Niobrara River. This project puts an actual sediment removal device in the water for a week. The collector will provide invaluable data on the amount, type, and logistics needed for a long term collector. Keeping a percentage of sediment from entering the Missouri River, even a small amount, supports sustaining a healthy reservoir and extending the useful life of Gavins Point Dam well into the future. A big need for this, and any sediment removal method, is to find local beneficial uses for the sediment removed. This is a topic we will be spending more time working on as we move forward. There will be an opportunity for our members to visit the bedload collector site and see it in action. More information will be coming as this project ramps up this spring.

Thank you for being a valued member of the MSAC family. Please pass the word to your friends, organization members, and local governments. If you would like an update or a group presentation please contact Sandy or I. Whether in person or virtually, we would enjoy providing you the most up to date information on MSAC's mission and projects.

MID-WEST ELECTRIC CONSUMERS ASSOCIATION

MECA hears MSAC update

DENVER- The Mid-West Electric Consumers Association's 66th Annual Meeting and Preference Customers Conference in December at Denver brought together approximately 400 consumer-owned utility leaders, representing 314 electric cooperatives, municipalities, and public utility districts in 9 Missouri River Basin states. Attendees heard from federal agency leadership at the Bureau of Reclamation, US Army Corps of Engineers, and Western Power Administration.

MSAC Executive Director Scott Kostal provided attendees with an update and answered questions. His presentation was titled: "The Challenge of Sedimentation on the Big Muddy."

The event dug into important issues for the Missouri River Basin including energy market development, electric transmission planning, and environmental restoration.

YouTube

Webinar & Meeting Library

Look for MSAC's YouTube channel to catch past webinars and meetings in recent years.

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