

MADCS
Montana Association of Dam and Canal Systems
Invites you to attend the
Eleventh Annual Workshop and Field Trip
October 13th and 14th Big Horn Resort, Billings MT

Field Trip Tuesday, October 13th 11:00 AM to 5:30 PM

Busses begin boarding at 10:30 in front of Big Horn Resort

As urban and housing developments encroach on traditional agricultural areas, the impacts on canal and dam owners become more complicated. This year's MADCS field trip will take participants through the urban landscape of Billings to investigate issues related to human interaction, safety, and liability of canals, design features of large scale water retention and flood prevention facilities, and finally how dams may be reclassified due to downstream development. We will discuss replacement of corrugated metal pipes, gates, and how local Search and Rescue organizations all need a little attention. Lunch will be provided.



Workshop Wednesday, October 14th (7:30 AM – 3:45 PM)

Breakfast and Registration 7:00 to 7:30

Session 1 – Extreme Storm Events

Extreme Storm Events and Dams

Speaker: Joseph T. Smith, PE, CFM, LSIT, Design Engineer, Morrison-Maierle, Inc.

Extreme storm events are often discussed when designing and permitting a dam. They can be the largest threat of failure for a dam. But what is an extreme storm event and why should we care about it? This presentation will cover what is an extreme storm event, the risks these events can pose to dams and public safety, as well as how one can reduce these risks. This presentation will also discuss common reactions by the public when extreme storm events occur, and how we can improve public safety.

Thirty Years of Montana Spillway Reconstruction

Speaker: DNRC Engineers

Following the failure of Teton Dam, many Montana dams were identified as having undersized or structurally deficient spillways. Initially, dam owners began reconstructing their spillways to meet stringent federal standards. For many dam owners, the cost to meet the federal standards was out of reach. In 1994 a group of dam owners, private engineers and state agencies met to design a Montana specific standard. This standard was adopted in 2000. In the past 15 years, many spillways have subsequently been rebuilt. In this presentation we will go through the history of Montana spillways and present many examples of dams where the spillway was reconstructed. For each dam we will discuss the initial deficiency, the challenges facing the dam owner to address the problems and the challenges facing the engineers in designing a repair. Special problems during construction and long term performance will be noted.



Talking with the Media Part II – Dealing with the Media during a Flood Event

Speaker: Adam Powers, DNRC Emergency Planning and Outreach Coordinator

Working with the media is not just on their terms. Last year we discussed how to deal with the media when they show up on your door step. This year we will discuss how dam and canal owners can use the media to promote a message of safety and responsibility and especially dispel some of the nasty rumors surrounding the roles of dams during flooding events.

Session 2 – General Information (Dam and Canal Potpourri)

Funding Major Dam and Canal System Infrastructure Projects

Speaker: Ryan Elliott P.E., Great West Engineering, Inc.

Great West Engineering worked with DNRC to prepare a guide on "Funding Examples of Major Dam and Canal Infrastructure Projects in Montana". This guide describes how select dam and canal projects have been successfully funded in Montana over the past 30 years (with a primary emphasis on projects in the last 10 years). This presentation will discuss and explain the funding methodologies that have been utilized for larger scale dam and canal system projects in the State of Montana, along with select case studies that were featured in the final DNRC document.

Rehabilitation of Large Diameter Irrigation Siphons

Speaker: Russell C. Reed P.E., DOWL

Large diameter siphons/pipelines are common components in irrigation districts. These large diameter conveyances are typically decades old, and often unrelated infrastructure (e.g., roads) and utilities have been constructed over, or adjacent to, them, increasing the difficulty and expense associated with traditional “cut and cover” replacement. Because replacement of these components is generally prohibitively expensive, in situ (“trenchless”) rehabilitation is increasingly becoming an effective way to restore system performance. This presentation will provide an overview of the advantages/disadvantages and constructability considerations for an array of trenchless rehabilitation methods.

The Importance of Water Measurement in the Future of Water Rights in Montana

Speakers: Julie A. Merritt and Eric Anderson, P.E., CFM, WGM Group, Inc.

One major effect of recent court rulings will be the increased need for mitigation in closed basins. Many new developments will be required to purchase existing water rights to offset new uses. As existing water rights owners, you may be in a position to capitalize on this situation if you can show that you have excess water to sell. Given the trends in Montana water rights, it will become increasingly popular to implement remote sensing technologies to gather and analyze water use data. The presentation will explain the need for water measurement and will conclude by discussing existing and forthcoming remote water measurement technologies that can meet the impending needs of water users, developers, and the court system.

Session 3 – Canal and Embankment Repair Workshop

Instructors: Josh Carter, P.E., Steve Weisenberger, P.E. and Jay Thom P.E., DOWL

In this 1.5 hour specialty workshop, we will learn about methods and materials for repair of embankments and canals. Topics include:

- Repair of canal blowouts
- Vegetation control
- Animal damage
- Sinkholes
- Upstream face erosion
- Construction considerations
- Equipment Access
- Materials
- Understanding geologic setting



Session 4 – Gate Repair Workshop

Instructor: Gary Boring, Past owner of Moltz Construction, Inc. Current owner of Keo Civil, LLC

Is your dam or canal gate not operating as smoothly as in the past? In this 1.5 hour workshop, we will review what is involved in repairing and maintaining gates and valves to ensure long term operation. Topics include:

- Overview of gate and valve components
- Common problems
- Repair or Replace - Considerations
- Addressing leakage
- Cavitation repairs – materials and methods
- Construction considerations
- Essential Planning Steps
- Inspections – what to look for
- Preventative maintenance
- Case Studies



For more information please contact:

MADCS information: Vern Stokes, President MADCS, 406-279-3315, pccrc@3rivers.net

Registration and Agenda/Exhibitor and Sponsorship Opportunities: Aspen Bowler, Workshop Facilitator, 406-444-0862, Abowler@mt.gov