



East Dakota Water Development District
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MINUTES
June 20, 2019

The Board of Directors of the East Dakota Water Development District (EDWDD) held a regular meeting on June 20, 2019, at the EDWDD office in Brookings. Chairman Jarrett called the meeting to order at 9:05 a.m. The following persons attended:

Directors Present

Mark Anderson
Jeff Barth
Gary Duffy
Martin Jarrett
Kay Kassube
Dana Loseke
John Moes

Director(s) Absent

Mary Ellen Connelly
Spencer Hawley

Others Present

Michael Crinion, Brookings
Roger Hageman, Lake County Commission
Rachel McDaniel, South Dakota State University
Benjamin Schall, SD Game, Fish & Parks Department

Staff Present

Kevin Christenson
Jay Gilbertson
Jeremy Hinke
Deb Springman

Administrative Items

Approval of Agenda

Motion by Anderson, seconded by Loseke to approve the agenda as presented. Motion carried unanimously.

Minutes - The Board reviewed the Minutes of the May 16th, 2019, meeting.

Motion by Barth, seconded by Loseke to approve the Minutes as presented. Motion carried unanimously.

Financial Reports - The Board reviewed the May 2019 financial statements.

Motion by Moes, seconded by Duffy to approve the May 2019 financial statements. Motion carried unanimously. Chairman Jarrett directed that the approved financial statements be placed in the District files.

DRAFT

Report of Meetings and Conferences - Director Barth attended a presentation on sales and use tax reinvestment payments for new agricultural developments hosted by the Governor's Office of Economic Development in Beresford on May 8th.

Directors Barth and Loseke attended a discussion of agricultural drainage hosted by SD Corn in Sioux Falls on May 20th.

The Manager briefly commented on the following meetings he attended:

May 20th - South Dakota Corn Growers panel discussion regarding field tiling, Sioux Falls

May 22nd - North-Central Regional Water Network Undergraduate Extension Internship Seed Project teleconference; USDA NRCS Conservation Partnership Discussion teleconference; Sioux Valley Commissioners Association, Flandreau; and Hamlin County Board of Adjustment, Hayti

May 23rd - Lewis & Clark RWS Future Planning discussion, Tea

June 4th - Grant County Commission, Milbank; Deuel County Commission, Clear Lake; and City of Brandon Water Development Committee, Brandon

June 5th - Lower Big Sioux River Watershed District, Elk Point; and Renner Sanitary District/Mapleton Township, Renner

June 11th - West Dakota Water Development District Special Board Meeting, Rapid City; and District-funded project discussions with Dr Lisa Kunza, Rapid City

June 14th - Deuel County commissioners, Clear Lake

June 17th - South Dakota Association of Conservation Districts Vermillion-Big Sioux Area meeting, Hartford; and International Legislators Forum (ILF) field tour, Sioux Falls

June 18th - ILF water quality presentations, Sioux Falls

June 19th - SD Corn Growers Association/SD Corn Utilization Council, Sioux Falls

Upcoming Meetings -

1. **June 25th - 9:00 a.m.** - Water Treatment Plant, Sioux Falls. Big Sioux River Watershed Project Steering Committee.
2. **June 25th - 12 noon** - Harrisburg. Lincoln County Master Drainage Plan Steering Committee.
3. **June 27th - 9:00 a.m.** - Webster. South Dakota Association of Conservation Districts (SDACD) Coteau Area meeting.
4. **June 27th - 1:00 p.m.** - Matthews Training Center, Pierre. SD Board of Water & Natural Resources.
5. **June 27th - 4:30 p.m.** - Tea Events Hall, Tea. Lewis & Clark Regional Water System Annual Meeting.
6. **July 9th** - Eastern SD. US EPA Regional Administrator's tour preparation.
7. **July 10th & 11th** - Sioux Falls. Governor's Agricultural Summit.
8. **July 18th - 9:00 a.m.** - EDWDD Office, Brookings. July EDWDD Board of Directors meeting.

Payment Request(s) - The Manager presented the Board with two reimbursement requests from the sponsors of District-supported projects. He noted that each request was in order, and consistent with provisions set by the Board at the time of award. He requested authorization to pay the following:

<u>Grant Recipient/Activity</u>	<u>Requested Amount</u>
SDSU/Nitrate removal thru denitrification w/ ag residue(Hua)	\$ 287.15
SDSM&T/Water Quality Data Trend Analysis (Kunza)	<u>\$ 399.56</u>
Total	\$ 686.71

Motion by Kassube, seconded by Moes to authorize payments totaling \$686.71 as requested. Motion carried unanimously.

Travel Authorization - The Manager requested permission for Deb Springman to attend the 2019 Midwest Environmental Education Conference to be held in St. Paul, MN, October 3-5, 2019.

Motion by Moes, seconded by Duffy to authorize Ms. Springman's attendance at the event as requested. Motion carried unanimously.

Aquatic Invasive Species

Benjamin Schall, a fisheries biologist with the South Dakota Game, Fish & Parks Department Aquatic Invasive Species Program, provided an overview of the zebra mussels in South Dakota water bodies. The zebra mussel (*Dreissena polymorpha*) is a small bivalve originally native to the Caspian Sea region. Zebra mussels reached North America in the mid-1980s in the ballast water of a ship. They rapidly became established in the Great Lakes and the waters draining them. Zebra mussels have been identified in Lewis & Clark lake, along with the Missouri River below Gavins Point Dam. To date, no invasive mussels have been identified in the James, Vermillion or Big Sioux Rivers, but there has been little actual sampling in these water bodies.

He noted that on average, zebra mussels live 2-5 years and can reproduce by their second year. Each year, a mature female zebra mussel may release up to one million eggs. In approximately two days, fertilized eggs develop into free-swimming larvae called veligers, which can be transported over long distances by water currents. Within 2-3 weeks, the veligers begin to 'settle-out' in the water under the weight of their forming shells and attach to firm, underwater surfaces.

Zebra mussels cling to surfaces by using thread-like strands called byssal fibers tipped with a strong, sticky substance. As many as seven hundred thousand mussels can occupy a square meter. Once attached, they generally stay in one place, but can detach and crawl to a new location if environmental conditions change. In addition to water currents, zebra mussels can be transported by hitch-hiking on boats, boat trailers, float planes, and other aquatic equipment. Adult zebra mussels feed by filtering large amounts of plankton and detritus from the water. Each mussel can filter one liter of water per day.

The Manager indicated that and Mr. Schall had discussed possible ways for District staff to assist in monitoring and/or sampling for zebra mussels. Mr. Schall suggested several ways this might take place. Tactile inspections of rocks and other hard surfaces in lakes and streams has identified populations in the past. This method is inexpensive, but time consuming. Using drag nets to concentrate and collect veligers is an option, provided a laboratory could be identified that would be able to analyze the resulting samples. He also suggested using environmental DNA (eDNA) scans, which look for genetic material excreted or otherwise sloughed off of target organisms. eDNA analysis has the advantage of being able to target a range of organisms, not just zebra mussels. Projected eDNA costs are \$75 per sample.

Motion by Barth, seconded by Kassube to allow the Manager to utilize up to \$1,000 of District funds programed for water quality analysis to support aquatic invasive species inventories in District rivers and streams. The Manager noted that he would work with Mr. Schall and District staff to develop a formal work plan, which he would bring to the Board at the July 18th meeting. Motion carried unanimously.

Saturated Riparian Buffers

Dr. Rachel McDaniel, South Dakota State University (SDSU) Department of Agricultural and Biosystems Engineering, discussed preliminary results of their efforts to assess the effectiveness of saturated buffers. Saturated buffers are created by distributing the effluent from an agricultural drainage systems along the course of a riparian area. Perforated distribution tiles are embedded parallel to and at least 30 feet from a stream. As the water works its way toward the stream, nitrates can be taken up as plant nutrients and/or be broken down by native bacteria. “A saturated buffer allows the soil system itself, whether through plant uptake, microbial conversion or filtration, to help reduce nitrate concentrations,” explained Dr. McDaniel.

In 2015 and 2016, the SDSU researchers installed saturated buffers at two sites, one near Flandreau and another near Baltic. Both sites had established riparian buffers, strips of grass, shrubs and trees at the edge of the waterway that filter nutrients from surface runoff. The Baltic site also contained a previously established wood-chip bioreactor, another potential tool for treating elevated nitrates in tile water. The Baltic site showed nitrate removal rates in the 90 percent range of the water that passes through the saturated buffer. The removal rates at the Flandreau site varied quite a bit, but McDaniel reported, on average, about 65 percent reduction in nitrate levels.

The project was supported by a three-year, \$75,000 Conservation Innovation Grant from the U.S. Department of Agriculture’s Natural Resources Conservation Service, as well as matching funds from the South Dakota Farm Bureau, East Dakota Water Development District and the South Dakota Soybean Research and Promotion Council.

District Public Outreach

Rural Drainage in South Dakota - The Manager presented the Board with a summary presentation on the case law pertaining to rural drainage activities, along with a summary of the elements of the 1985 county drainage legislation (South Dakota Codified Law 46A-10A). The presentation is part of a program he is organizing to address an increasing number of queries on the subject.

Adjournment

There being no further District business, Chairman Jarrett declared the meeting adjourned at 12:05 p.m.

John Moes, Secretary