



Directions

Impacts from March floods continue

As communities continue to recover from the recent flood events, the Lower Elkhorn Natural Resources District (LENRD) is offering a helping hand. The LENRD's responsibilities include flood prevention and control as well as prevention of damages from flood water and sediment.

Several communities have come forward for assistance in studying possible solutions to protect their cities and towns from flooding in the future.

The City of Pierce was protected from the flood during the storm due to the Willow Creek dam that held back almost 18,000 acre-feet of water, and by a levee that surrounds a portion of the community. However, the water that did enter Pierce was from drainage issues within and on the west side of the city. The city is requesting assistance to complete a drainage study of the area. The LENRD board of directors directed staff to obtain an estimate for a drainage study and work with the City of Pierce in developing an interlocal agreement to provide 50% of the study cost.

The City of Battle Creek has had a history of flood-related problems and has requested assistance. The LENRD board of directors have instructed staff to work with the City of

Battle Creek in developing a proposal for the board to consider, which would identify the project the city would like to pursue as well as updated construction costs for the potential projects. Battle Creek's City Council met on May 13th and voted to explore options for a 1,200-acre flood-control reservoir on the south side of Battle Creek.

The City of Osmond is also requesting assistance from the LENRD. Massive flooding took place across the city, causing extensive damage. The LENRD board directed staff to obtain an estimate for a drainage study and to work with the City of Osmond in developing an interlocal agreement to provide 50% of the study cost.

Another project, near Scribner, will stabilize a portion of the stream on the Elkhorn River. The board instructed staff to work with Dodge County and the City

of Scribner on the Elkhorn River Streambank Stabilization Project northeast of Scribner.

The Village of Pender is requesting assistance to complete a drainage study of the area. The LENRD board directed staff to develop an interlocal agreement to provide 50% of the cost of the study not to exceed \$19,400 of district funds.

Some concerned citizens of Norfolk also requested assistance with a study. The board instructed staff to work with the City of Norfolk to address the request for a drainage study on the east side of Norfolk.

LENRD Projects Manager, Curt Becker, said, "Other towns or communities who need flood-control assistance should contact the LENRD immediately so funding can be applied for before the deadlines."



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Hazard Mitigation Plan to be updated this year

For every \$1 spent on hazard mitigation, \$4 in post storm cleanup and rebuilding is saved, according to the Federal Emergency Management Agency (FEMA). Proactive hazard mitigation planning allows a community to take actions to reduce or eliminate threats from natural disasters. To help guide future hazard mitigation projects, the Lower Elkhorn Natural Resources District (LENRD) is updating their current Hazard Mitigation Plan.

Hazard mitigation plans (HMP) are a requirement of the Disaster Mitigation Act of 2000, administered by FEMA, and once a community, county, or district is part of an approved plan they become eligible for up to a 75% cost share for a wide variety of projects listed in the plan. Hazard Mitigation Plans are required to be updated on a five-year cycle and the LENRD's HMP is required to be updated in 2019.

A hazard mitigation plan is a publicly-guided document that identifies

vulnerability to natural disasters such as flood, drought, earthquake, wildfire, winter storm, tornado/high wind storm, dam failure, etc. The plan sets goals, establishes mitigation alternatives, and prioritizes projects which may alleviate potential damages to property and provide protection when future disasters occur.

The planning effort to update the plans across the district are being guided by a Planning Team consisting of representatives from the LENRD, Counties, the Cities, several schools, Nebraska Department of Natural Resources (NDNR), and the Nebraska Emergency Management Agency (NEMA). Public input will be gathered throughout the duration of the plan development through online tools and public meetings. All communities, Counties, Sanitary Improvement Districts, Tribal Nations, and School Districts within the LENRD are eligible to participate.

The LENRD hired JEO Consulting Group, Inc. (JEO) to assist with the plan development this year. JEO assisted in completing the LENRD's original and current Hazard Mitigation Plan, in 2009 and 2014. This hazard mitigation plan update is funded by a FEMA planning grant. The cost is shared 75% through federal funding and 25% through a local match. For this plan update, the LENRD provided the 25% local match.

For more information on the Hazard Mitigation Plan, contact LENRD Projects Manager, Curt Becker.

Public Hearing held for Groundwater Management Area

Groundwater quality and quantity are top priorities of the Lower Elkhorn Natural Resources District (LENRD).

The LENRD Board of Directors held a Public Hearing at their June board meeting to receive public testimony on proposed changes to the LENRD's Groundwater Management Area Rules & Regulations.

At their July meeting, the board adopted the proposed changes which will become effective on August 24, 2019.

LENRD Assistant Manager, Brian Bruckner, said, "The changes will further outline the rules and regulations by adding some definitions for terms that relate to current groundwater management strategies to complement the recent adoption of the Lower Platte River Basin Plan and the LENRD's Integrated Management Plan." A complete summary of the proposed changes is available at the LENRD office in Norfolk and on the district's website.

Stay connected by subscribing to our monthly emails at www.lenrd.org.

LENRD looks at flood-control options for Battle Creek

As the area continues to recover from the recent flood events, communities are looking for assistance in studying possible solutions for the future.

The Lower Elkhorn Natural Resources District (LENRD) Board of Directors have been discussing possible options for these communities at their recent board meetings.

The City of Battle Creek has had a history of flood-related problems. City officials recently approached the LENRD board, asking if the potential flood-control projects that were deemed feasible in 2014 could be revisited. The LENRD board of directors instructed staff to work with the City of Battle Creek in developing a proposal for the board to consider, identifying the project the city would like to pursue as well as updated construction costs for the potential project.

Battle Creek's City Council met in May and voted to explore options for a 1,200-acre flood-control reservoir on the south side of Battle Creek.

Over 100 citizens of the Battle Creek area attended the May 23rd LENRD Board of Directors meeting. After a lengthy discussion the board

voted to move ahead with the process of securing funding for a flood-control project. The board voted 11 to 2 to file a letter of intent with FEMA/NEMA for flood protection for Battle Creek. The board also voted 12 to 1 to direct staff to contract with consulting firms to prepare all the necessary documentation and complete a grant application to the State of Nebraska Water Sustainability Fund in the amount of \$36 million as well as a grant application to the USDA Watershed and Flood Prevention Operations program.

LENRD General Manager, Mike Sousek, said, "There are multiple benefits to think about when considering a project of this size. First and foremost is the flood-control potential. Along with that comes the benefits of recharge and retiming as well as recreation." Sousek continued, "The vote tonight has started the ball rolling to secure funding for a project. This is just the first of many steps in this process."

The 2 reservoirs that have been proposed for the area, south of Battle Creek, are a 160-acre pool for approximately \$17 million and a 1,200-acre pool for \$36 million.

Do you have old tires to recycle?

There will be a FREE 10-County Scrap Tire Collection on Friday, August 16th at the Washington County Fairgrounds in Arlington, NE. Counties included in this collection are: Burt, Colfax, Cuming, Dakota, Dodge, Douglas, Sarpy, Stanton, Thurston, and Washington. Call Deb Ward at the Tekamah field office for more information at 402-374-1920.

Willow Creek dam 'did what it was designed to do'

The Lower Elkhorn Natural Resources District (LENRD) continues to monitor the infrastructure across the area following the historic flooding events this spring.

LENRD General Manager, Mike Sousek, said, "Without the investments that previous community leaders put into place years ago, this historic event could have been much worse. Without the Willow Creek dam 1½ miles southwest of Pierce, and the Flood Control Levee protecting Norfolk, these cities would have been under water."

On average, the Willow Creek reservoir holds back 7,100 **acre-feet** of water. During the historic flooding that occurred across the area this spring, Willow Creek was holding back over 18,000 **acre-feet** of water. An acre-foot is a unit of volume commonly used to reference large-scale water resources, such as reservoirs. It is defined as the volume of water necessary to cover one acre of surface area to a depth of one foot. An acre-foot is equal to 325,851 gallons of water. If you take that number times the 18,000 acre-feet of water that Willow Creek held back during the storm, you get 5.86 billion gallons of water. Sousek said, "When you attempt to visualize that amount of water, you can begin to fully understand how critical this dam is to the area."

Sousek added, "The Willow Creek flood-control structure continues to do its job. It's doing exactly what it was designed to do. The dam held back water that would have otherwise affected the communities of Pierce, Hadar, and Norfolk as well as the streams along the Elkhorn River and downstream landowners, county roads, and bridges."

To understand the way the dam functions, we need to explain some of its inner workings. In the dam at the Willow Creek State Recreation Area, there are 27 pressure relief wells across the earthen structure. These 27 wells relieve the pressure that occurs naturally as water pressure pushes the

water up, similar to an artesian aquifer or well. The relief wells relieve the pressure on the dam and prevent the water from pushing through and eroding a channel under or near the dam. The relief wells drain into a collection pipe which drains into another collection pool and then finally ends its journey as it drains into the "stilling basin" which is located on the east side of the dam. The stilling basin allows the water to slow down before it is released into the channel. Along

our communities. Thank you to all the volunteers who helped during this unprecedented storm as well as those who assisted the LENRD staff as they monitored the Willow Creek Dam, especially the members of the Pierce Volunteer Fire Department."

The Willow Creek State Recreation Area is owned by the LENRD and is managed by the Nebraska Game & Parks Commission. To learn more, visit www.lenrd.org and sign up for our monthly emails.



with the relief wells there are piezometers on the dam that the LENRD uses to monitor the changes in the water levels. The piezometers measure the depth of water and how high the underground pressure is pushing the water up. The LENRD staff use the relief wells, the piezometers, and other variables to monitor the structure to determine if it's functioning properly.

Sousek continued, "Not only did the dam help to alleviate further damages to downstream landowners, towns and villages, but it also helped protect the levee in Norfolk." He said, "We continue to monitor our structures and remain confident in their worth. Investments in flood control levees and dams strengthen, preserve, and protect

Traveling this summer?

Join the Great Park Pursuit!

You can win prizes for joining the fun! The Pursuit ends September 16th!

Get out there and enjoy Nebraska!

www.negpp.org



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"Striving to improve the quality of life for all citizens of the Lower Elkhorn Natural Resources District by promoting and demonstrating sound methods of stewardship which conserve, develop and manage all natural resources."

"Equal opportunity employer and provider."

To:

www.lenrd.org

Protecting Lives - Protecting Property - Protecting the Future

Remember to check your flow meters this summer

Flow meters are a beneficial tool to help manage water use. The Lower Elkhorn Natural Resources District (LENRD) requires flow meters on all high capacity irrigation wells.

Each meter must have a totalizer that measures units of acre-inches, and must measure flow rate in units of gallons per minute.

Remember to check flow meters on your wells periodically throughout the irrigation season.

Making sure your flow meters are working properly benefits both the LENRD and you, the irrigator, and helps to maintain accurate records.

It's the responsibility of producers to be sure that flow meters are functioning properly. If you have any questions, or notice something irregular with your meter, please give us a call to discuss the details.

<http://www.lenrd.org/flow-meters>

