

Annual Report to the Legislature 2022-2023



Nebraska Department of
Natural Resources

Managing Nebraska's most
precious natural resource
through sound partnerships,
cooperation, and science-
based decision making.

NEBRASKA

Good Life. Great Water.

DEPT. OF NATURAL RESOURCES

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Objectives

Goal 1 Establish strong state leadership, involvement, and support for science-based decision making that is necessary to sustain state and local water management outcomes.

Objective 1A: Support continued training for staff to remain experts in their field of practice

Objective 1B: Work collaboratively with other partner agencies to develop and improve the “best available science” to support policy decisions

Objective 1C: Develop methods to distribute data

Goal 2 Provide high-quality products and services through the performance of our duties in the areas of floodplain management, flood mitigation planning, dam safety, and survey to promote the safety of all Nebraskans.

Objective 2A: Support local floodplain administrators with quality service and continued education

Objective 2B: Work with dam owners to address deficiencies that may place the public or key infrastructure at risk

Goal 3 Develop and implement customized and decentralized water management plans established through collaboration with local Natural Resources Districts and stakeholders that provide for long-term sustainability of the state's water resources.

Objective 3A: Conduct annual assessments of progress toward goals, objectives, and key actions identified by local stakeholders

Objective 3B: Complete integrated management planning and basin-wide development for the entire state

Objective 3C: Support the continued compliance with all interstate water compacts, decrees, and agreements

Objective 3D: Work to provide increased preparedness for future droughts

Goal 4 Encourage strong public engagement with multiple constituents and stakeholder groups in planning and implementation activities to ensure that local and state needs are addressed.

Objective 4A: Continue to find ways to reach constituents and stakeholders through public outreach events and surveys

Objective 4B: Work to streamline communication of key materials for consumption by diverse stakeholder groups

Objective 4C: Create opportunities for expanding public participation in planning efforts conducted at the state and local level

Goal 5 Protect existing water uses through collaborative investments in water resource projects, planning, administration, and permitting of surface water rights, and the registration of groundwater wells.

Objective 5A: Continue to streamline water rights and well registrations processes for more efficient customer interactions

Objective 5B: Support the Natural Resources Commission in administering state-aid funds by identifying project opportunities for sustaining future water supplies

Objective 5C: Seek opportunities to promote continued investments in water resource projects aimed at addressing aging water supply infrastructure

Objective 5D: Work to support water right changes that can support innovative solutions for future water user needs

Objective 5E: Continue to adopt technologies and data collection strategies that improve the administration of water rights

Goal 6 Provide agency-wide services and support in the areas of information technology and transparent data sharing, business improvement, public information, and administration of state-aid funds in conjunction with the Natural Resources Commission.

Objective 6A: Enhance the public dissemination of water-related data to support transparent and effective planning and mitigation of future risks

Objective 6B: Continue to create more efficient processes for data exchange that enhance the understanding of water uses



From The Director

Water is crucial for economic stability and growth in Nebraska. The dedicated team at the Nebraska Department of Natural Resources (NeDNR) works each day to help manage and provide access to this precious natural resource for all Nebraskans

This fiscal year saw a devastating drought across many areas in Nebraska; however, unlike many states, Nebraska continues to enjoy healthy groundwater supplies that enabled farmers to irrigate and helped to blunt the economic impact of drought on crop production. Nebraska is blessed with groundwater-fed streams and rivers along with seven aquifers, including the Ogallala Aquifer. Working cooperatively with the state's local natural resources districts, we have developed integrated management plans for each district. Integrated management plans help manage the connection between surface water and groundwater and preserve the health of both resources throughout the state.

Work continues with the vision of the Governor and the legislature in their long-term investments in our water. Design work continues to move forward on the \$600M Perkins County Canal project. The \$50M Surface Water Irrigation Infrastructure Fund has been rolled out, and we have contracted with approximately 30 irrigation districts for work to revitalize surface water irrigation infrastructure for the next 100 years. As part of the Jobs and Economic Development Initiatives Act (JEDI), watershed flood control has been funded in the Wahoo Creek basin along with levee improvement in Colfax County. Evaluation of a potential recreational lake also continues to move forward as part of JEDI. As Lincoln works toward a second source of water, funding of up to \$199,200,00 has been allocated to the project. The Resilient Soils Water Quality Act (RSWQA) is moving forward to forge a producer learning community within the state. Updates on these investments can be found beginning on Page 27.

Thank you for reading on for more details on how our team of dedicated team members continue to help maximize our precious water resources. Behind our people, Nebraska's greatest resource is our water. The Nebraska Department of Natural Resources continues to lead the way in the management of our most precious natural resource through sound partnerships, cooperation, and science-based decision making. Water today. Water tomorrow.

Thomas E. Riley, P.E.

Director

Goals And Accomplishments



Establish strong state leadership, involvement, and support for science-based decision making that is necessary to sustain state and local water management outcomes

Goal 1

Support continued training for staff to remain experts in their field of practice

Objective 1A

Developing leadership skills



R-L: Gov. Jim Pillen, Sam Capps, Jennifer Schellpeper, Dir. Tom Riley

When Sam Capps was first approached about the leadership program through the Department of Administrative Services, she wasn't sure what she was going to learn since she'd taken many management trainings in the past and hoped that a year-long training was worth the time and effort. In the end, Sam says she learned a lot and hopes more NeDNR staff have the opportunity to participate in the program! One of the biggest takeaways from the training was a reinforcement of her management style. Sam feels it's important to develop relationships with her team, be a sounding board, and build a rapport that allows staff to come to her with anything, even criticism. The situational leadership class was the most useful for Sam. It gave her tools to help her understand the different management types and help her adjust her level of supervision for each team member. Sam was especially appreciative that Jen and Tom came to support her at this year's graduation ceremony. "It's amazing to have bosses who are so supportive and encourage our continued growth to become better leaders."

Work collaboratively with other partner agencies to develop and improve the “best available science” to support policy decisions

Objective 1B

Federal collaboration for public safety

Jamie Reinke, P.E., CFM, head of the floodplain section at the Nebraska Department of Natural Resources (NeDNR), was appointed to the Federal Emergency Management Agency’s (FEMA) Technical Mapping Advisory Council (TMAC).



Jamie Reinke

“I am extremely excited to join the Technical Mapping Advisory Council,” Reinke said; “and I hope the experience I bring from an agency that primarily conducts FEMA mapping in-house will bring value to the team. Residing in a midwestern state, I hope to bring an interesting perspective on the needs of rural communities in middle America, which have been overlooked in the past.”

The Technical Mapping Advisory Council (TMAC) is a federal advisory committee established to review and make recommendations to FEMA on matters related to the national flood mapping program authorized under the Biggert-Waters Flood Insurance Reform Act of 2012.

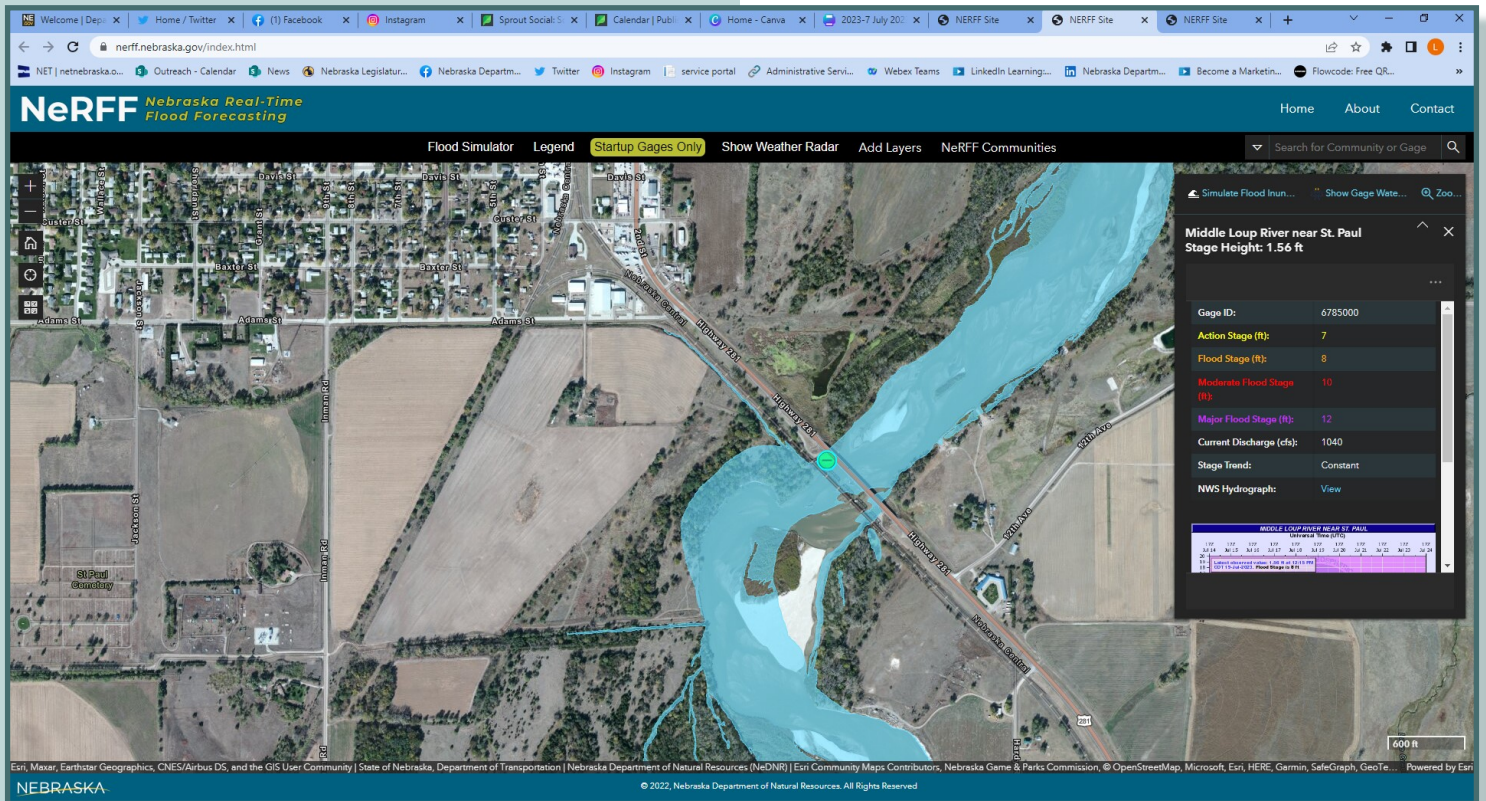


FEMA

Develop methods
to distribute data

Objective 1C

One-stop shop for water information



The goal of the Nebraska Real-time Flood Forecasting (NeRF) website is to provide emergency managers, community officials, and the public with a comprehensive, real-time collection of flood-related data to support risk-based decision regarding flooding.

The NeRF Goals are:

- Intuitively display up to date weather and stream gage stage data
- Provide flood inundation boundaries at every half-foot gage stage
- Provide flood inundation boundaries for each FEMA published recurrence interval
- Provide up to date flood information for Emergency Management and Response
- Prevent and reduce the loss of lives and property due to flooding for Nebraska residents

The website currently provides real-time stage data for 47 gages across Nebraska. Gages include those managed by the NeDNR and the United State Geological Survey (USGS).

Provide high quality products and services through the performance of our duties in the areas of floodplain management, flood mitigation planning, dam safety, and survey to promote the safety of all Nebraskans

Goal 2

Work with dam owners to address deficiencies that may place the public or key infrastructure at risk

Objective 2B

Repairs Completed on Dam Upstream of Highway 89 in Furnas County

To reduce the risk of dam failure and potential impacts to the public, the Department conducts periodic inspections of more than 2,900 dams across Nebraska. Problems found during the inspections are brought to the dam owner's attention so repairs can be completed. A privately-owned dam in Furnas County was one of several examples of dams that were repaired in 2022 as a result of Department efforts. During a routine inspection of the dam, the Department found a cattle path that was several feet deep cutting through the crest of the dam. During a flood event, rather than water flowing through the dam's spillway, water would flow through the earthen dam along the cattle path which would likely lead to rapid erosion and failure of the dam. After it was decided the dam posed an unacceptable risk to Highway 89, located less than a mile downstream, the Department worked with the dam owner to make sure timely repairs were made to the dam.



A cattle path cutting through the crest of the dam that was found during the Department's routine inspection can be seen on the right side of the photo. This privately-owned, earthen dam is located less than one mile upstream of Highway 89.



Photo showing the repairs completed by the dam owner after being notified by the Department about the risk the dam posed to Highway 89.

Develop and implement customized and decentralized water management plans established through collaboration with local Natural Resources Districts and stakeholders that provide for long-term sustainability of the state's water resources

Goal 3

Conduct annual assessments of progress toward goals, objectives, and key actions identified by local stakeholders

Objective 3A

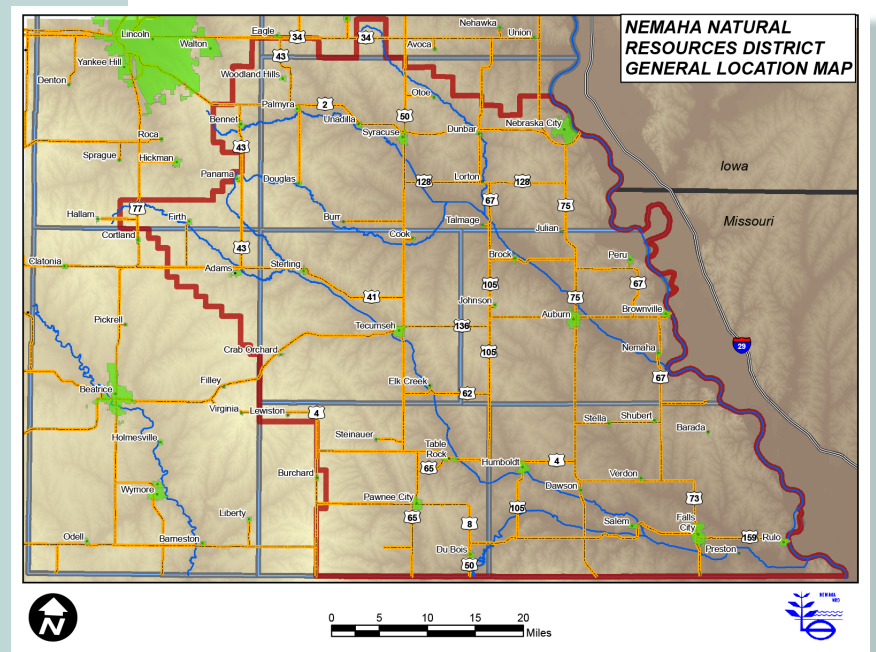
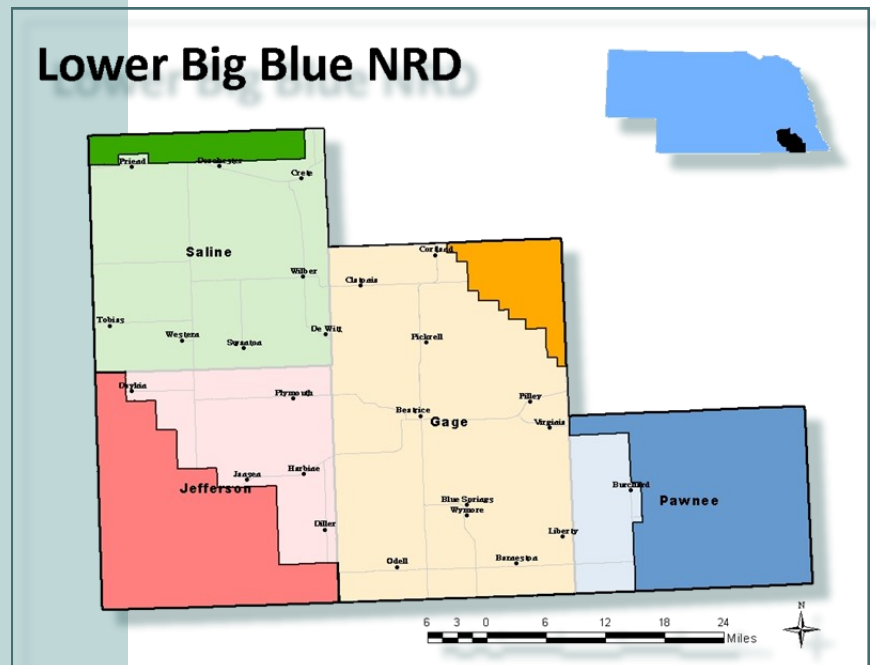
Two NRDs adopt voluntary Integrated Management plans

In 2022, the Lower Big Blue and Nemaha Natural Resources Districts (NRD) worked collaboratively with the NeDNR to develop their first integrated management plans (IMP). The NRDs and the NeDNR worked with a group of stakeholders including:

- Municipalities
- Industrial Users
- Individual Groundwater Irrigators
- Individual Surface Water Irrigators
- Other Large Water Users (for example, livestock)
- Rural Water Districts
- Well Drillers

In 2023, the two NRDs worked with the NeDNR to develop the first annual reports for the IMPs.

An integrated management plan brings together the NeDNR and the NRDs, as well as collaboration with water users and other stakeholders. The ultimate goal of the process is to protect existing interests while facilitating economic growth and well-being.



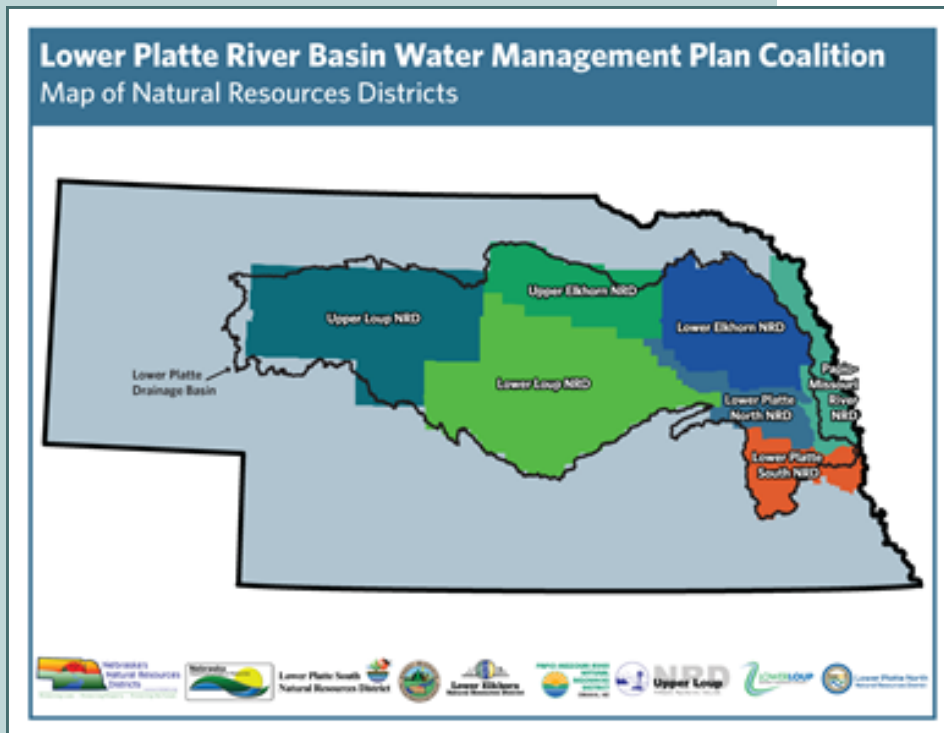
Complete integrated management planning and basin-wide development for the entire state

Objective 3B

Cooperative planning

The seven Natural Resources Districts in the Lower Platte Basin and the Nebraska Department of Natural Resources (the Coalition) signed an interlocal agreement to adopt,

implement and maintain a Basinwide Water Management Plan. The Plan focuses on water use policies and practices that contribute to the protection of existing surface water and groundwater uses while allowing for future water development. The Agreement is also intended to provide the flexibility for NRDs in the basin to work cooperatively in ways they would not be able to individually. These water use policies and practices are implemented through incorporation into individual



NRD Integrated Management Plans with NeDNR. The agreement was approved in January 2018 and continues for five years.

This Coalition has the following goals:

- Develop and maintain a water supply and use inventory based on the best available data and analysis;
- Implement a water management plan for the Lower Platte Basin that maintains a balance between current and future water supplies and demands; and
- Develop and implement water use policies and practices that contribute to the protection of existing surface and groundwater uses while allowing for future water development.

For more information about the Coalition, visit <https://lprbc.nebraska.gov/>.

Support the continued compliance with all interstate water compacts, decrees, and agreements

Objective 3C

Drought brings compact call year in the Republican River Basin

The NeDNR has the responsibility and authority to protect the water rights in Nebraska while ensuring compliance with the Republican River Compact enacted by the US Congress in 1943 and signed by the governors of Colorado, Nebraska, and Kansas.

In July 2004, the NeDNR designated the Republican River Basin as fully appropriated. This designation required that the NeDNR work with the Natural Resources Districts in the Republican River Basin to create integrated management plans controlling both surface and groundwater.

At the end of each calendar year, the NeDNR looks ahead at the forecasts for the upcoming irrigation season. Based on the 2023 forecast, NeDNR determined that this would be a Compact Call Year. During a Call Year, the NeDNR monitors the conditions in the river, ensuring that the state can comply with the requirements of the Compact. This means that NeDNR in conjunction with the basin NRDs must limit groundwater and surface water use and/or augment the water supplies of the basin. Fortunately, water supplies improved in June of 2023 and the restrictions associated with the Compact Call were able to be relaxed.

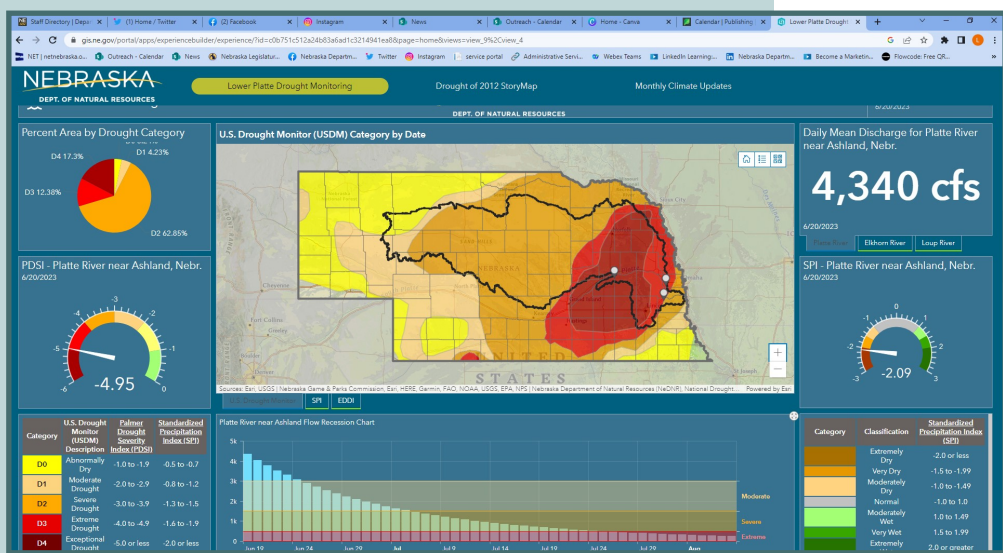


Outlet at Medicine Creek Dam.

Work to provide increased preparedness for future droughts

Objective 3D

Lower Platte Drought Monitoring



Snapshot of conditions on June 20, 2023.

The Lower Platte South Natural Resources District (NRD), Papio-Missouri River NRD, Lower Platte North NRD, Metropolitan Utilities District (MUD), Lincoln Water System (LWS), and Nebraska Department of Natural Resources (NeDNR), collectively referred to as the Lower Platte River Consortium (Consortium), have embarked on a collaborative effort to develop a drought contingency plan for the Lower Platte River Basin in Nebraska. The focus of this first increment of the Drought Plan is to establish a framework for coordination and communication amongst Consortium members to address droughts in the Lower Platte River.

The Lower Platte River, its tributaries, and aquifers serve approximately 80 percent of Nebraska's population, thousands of businesses and industries, includes more than two million irrigated acres, and provides streamflows for threatened and endangered species. The drought-driven risks are diverse and a potential drought in the region would pose serious risk to public health, economy, and fish/wildlife. The plan was adopted in 2019-2020 and implemented in 2020. The plan's duration is five years.

The Consortium has developed tools to monitor and forecast drought related impacts. These tools leverage information such as Standardized Precipitation data, Palmer Drought Severity Index, Evaporative Demand Drought values from the [The Climate Toolbox](#), and in-stream flow data from the [USGS Water-Watch](#). Based on this information the Consortium can proactively communicate drought risk to the public and work to manage water uses within those more limited supplies.

The Lower Platte River Drought Contingency Plan is available [here](#) in its entirety.

Encourage strong public engagement with multiple constituents and stakeholder groups in planning and implementation activities to ensure that local and state needs are addressed

Goal 4

Continue to find ways to reach constituents and stakeholders through public outreach events and surveys

Objective 4A

Reaching out to community stakeholders



Above: American Legion Auxiliary Cornhusker Girls State Convention visit

Below: Asa Brayton demonstrates the floodplain model



The NeDNR continues to find new ways to reach out to community stakeholders.

The NeDNR podcast, "Around the Watercooler with NeDNR," hosted by Dehvyne Ashmore and Alexa Davis is now available on six platforms. Topics include a wide range of information about the NeDNR presented in a fun, informative manner.

Social media campaigns continue with an increased focus on educating the public on what the NeDNR does for Nebraskans. A new campaign began after the legislative session to increase awareness of the need for the Perkins County Canal project.

New outreach activities have been added to an already busy calendar with a strong emphasis on reaching the next generation through school events across the state. Activities have included a trivia game using rubber ducks and demonstrations of the floodplain model.

After a hiatus due to the pandemic and the move to Fallbrook last year, NeDNR was able to once again host a group from the American Legion Auxiliary Cornhusker Girls State convention. The visit allows high school students, the next generation of leaders, to learn about what the NeDNR does for Nebraskans.

The NeDNR has an enthusiastic group of outreach volunteers who are always coming up with inventive ways to educate stakeholders about what we do and why it's important for all Nebraskans.

Work to streamline communication of key materials for consumption by diverse stakeholder groups

Objective 4B

Social media use increases connection with stakeholders and the public

An increased use of social media by the NeDNR has allowed team members to reach an expanding audience of stakeholders and interested public.

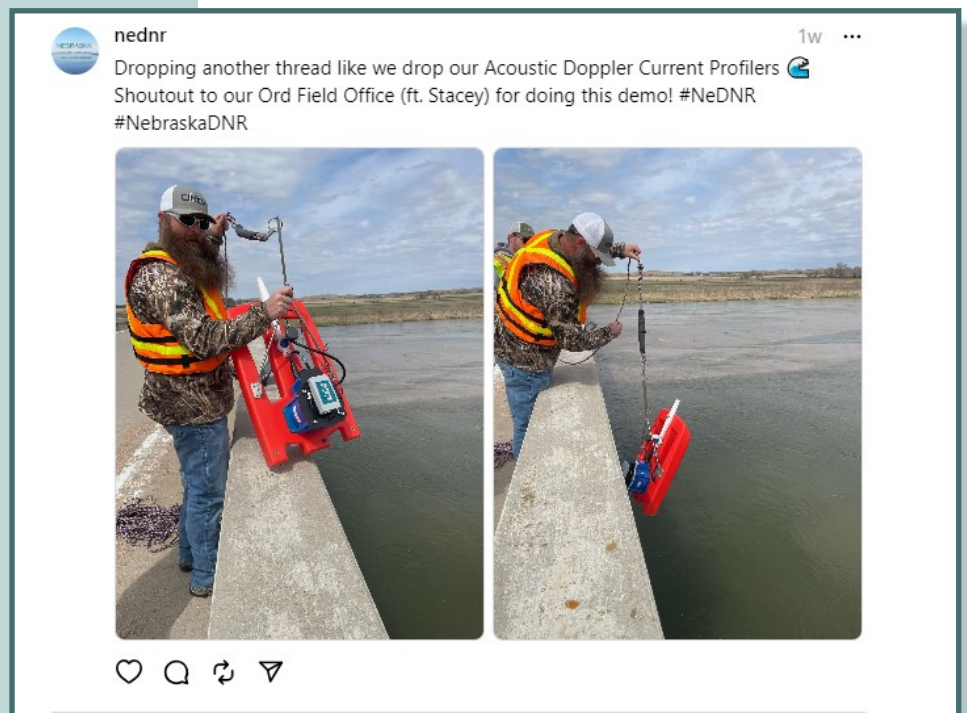
This year, the NeDNR has made a concerted effort to keep interested parties informed on the progress being made on the 2022 water initiatives, including the Perkins County Canal project.

The NeDNR uses several platforms to aid in scheduling posts, monitoring analytics, and producing professional, eye-catching posts.

This concentration on social media has increased followership and interactions with stakeholders and has resulted in increased interest in the NeDNR website, where more in-depth information can be found.

The NeDNR recently joined the new Meta social media platform Threads.

<https://www.threads.net/@nednr>

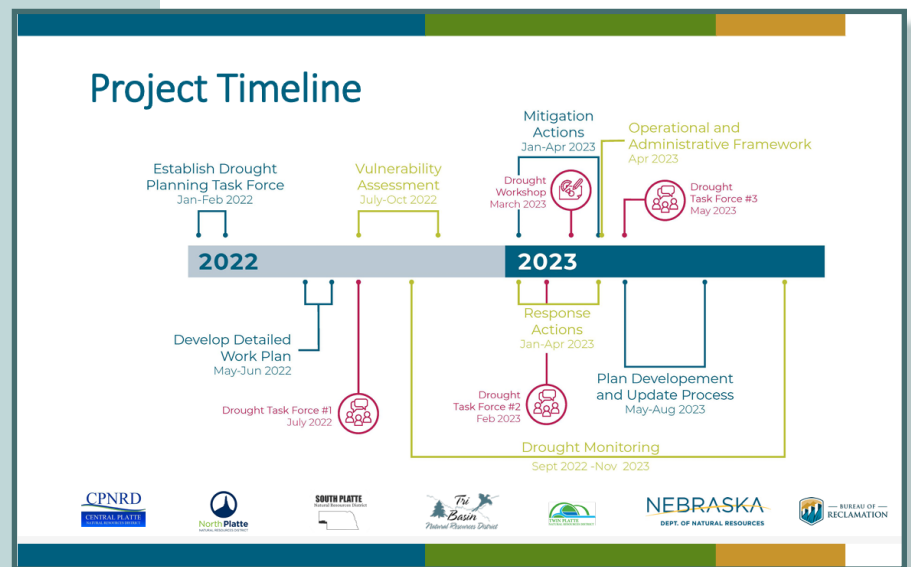


Create opportunities for expanding public participation in planning efforts conducted at the state and local level

Objective 4C

Planning for the future

Upper Platte River Drought Contingency Plan



The Upper Platte NRDs and the NeDNR, collectively known as the Platte Basin Coalition (PBC), are developing a Drought Contingency Plan for the Upper Platte Basin in Nebraska. This plan will refine the understanding of drought

vulnerabilities and impacts in the Upper Platte Basin while providing robust monitoring and forecasting tools paired with activity triggers, new mitigation strategies, and actions to improve critical water supply needs of the Basin during drought.

The PBC established three stakeholder groups: primary stakeholder, technical work, and drought task force.

The primary stakeholder group consisted of the five NRDs and the NeDNR. This group provides guidance and oversight for the development of the plan.

The technical work group was comprised of the primary stakeholder group members and public power and irrigation districts in the basin. This group brought extensive expertise in ground and surface water management.

The drought task force was a diverse group of water-related interests including agriculture, environment/wildlife, financial, irrigators, municipalities and more. This group provided valuable input from their working knowledge of water needs in the basin.

Protect existing water uses through collaborative investments in water resource projects, planning, administration and permitting of surface water rights, and the registration of groundwater wells

Goal 5

Continue to streamline water rights and well registrations processes for more efficient customer interactions

Objective 5A

Groundwater well owners get help with well registrations

The Nebraska Department of Environment and Energy (NDEE) received American Rescue Plan Act (ARPA) funding to provide grants for well owners to receive reverse osmosis systems for wells that contain high levels of nitrates.

One requirement to apply for the grants was for the wells to be registered with the NeDNR and to provide proof of registration.

This left many well owners with questions concerning their well. Is it registered? What is needed for proof?

The NeDNR groundwater section consists of just two full-time and one part-time team member. The added call volume was a lot for the team to handle, even with the help of other team members who stepped up to lend a hand.

Information on how to register a well, how to change the ownership of a well, and how to locate your well was added to the NeDNR website allowing most Nebraskans to help themselves.

Those with further questions were able to receive help in a timely manner with the reduced call volume.

The infographic is titled "WATER WELL REGISTRATION FAQs" and is presented by the Nebraska Department of Natural Resources (NeDNR). It features a dark blue background with yellow and white text. The top right corner includes the Nebraska logo and the slogan "Good Life. Great Water." along with "DEPT. OF NATURAL RESOURCES". The infographic is organized into several sections, each with a heading and a list of bullet points. At the bottom, there are four QR codes with labels: "FIND YOUR LOCAL NRD HERE:", "Look for Your Water Well here:", "NeDNR:", and "NeDEE:". A small disclaimer at the very bottom states that the information is for informational purposes only and does not constitute a warranty.

NEBRASKA
Good Life. Great Water.
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WHAT IS CONSIDERED A WATER WELL FOR THE PURPOSE OF REGISTRATION?

- Any excavation that is constructed to explore or monitor groundwater, obtain hydrogeologic information, or extract water from, or inject fluid into an underground water reservoir.

WHAT WATER WELLS ARE REQUIRED TO BE REGISTERED?

- All water wells must be registered with the Department of Natural Resources (NeDNR).
- Test holes and dewatering wells used for less than 90 days and domestic wells older than Sept. 9, 1993, do not require registration.

WHEN ARE WATER WELLS REQUIRED TO BE REGISTERED?

- Water wells need to be registered within 60 days after construction.

WHY ARE WATER WELLS REQUIRED TO BE REGISTERED?

- Complete information as to the occurrence and the use of groundwater is essential to the development of a sound groundwater policy.

WHERE CAN I GO TO CHECK ON MY WATER WELL REGISTRATION?

- The Nebraska Department of Natural Resources interactive webpage. [QR code below](#)

WHO IS ABLE TO REGISTER NEW WATER WELLS?

- Whoever constructs the water well is obligated to register the well, whether it is the land owner or the licensed well driller. These are the only two persons who may legally drill a water well.

WHEN SHOULD I MODIFY MY REGISTRATION?

- The licensed water well contractor or pump installation contractor is responsible for notifying the department within 60 days of any pump installation or modifications.
- The owners of the water well should notify the department within 60 days of any other changes or inaccuracies in recorded water well information.

WHO IS ABLE TO CHANGE THE REGISTRATION OF AN EXISTING WATER WELL?

- The owner of the water well.

WHAT AGENCY PERMITS THE CONSTRUCTION OF GROUNDWATER WELLS?

- Natural Resources Districts (NRD) maybe responsible for permitting the construction of groundwater wells as well as cities or counties.

FIND YOUR LOCAL NRD HERE:

WHAT AGENCY ESTABLISHES THE RULES ON WELL PUMPING?

- Natural Resources Districts (NRDs) are responsible for establishing the rules for well pumping.

Look for Your Water Well here:

NeDNR:

NeDEE:

WHO DO I CONTACT IF I HAVE QUESTIONS ABOUT WELL CONSTRUCTION STANDARDS AND DECOMMISSIONING A WELL?

- The Nebraska Department of Environment and Energy (NDEE) operates the Water Well Standards Program and has rules for these activities.

MOST NRDS OFFER A COST SHARE FOR WELL DECOMMISSIONING

THE INFORMATION CONTAINED IN THIS FAQ IS INTENDED FOR INFORMATIONAL PURPOSES ONLY AND IS NOT INTENDED TO SUPPLANT OR OVERRIDE APPLICABLE STATE STATUTES OR RULES AND REGULATIONS GOVERNING GROUNDWATER WELLS. THE DEPARTMENT ASSUMES NO LIABILITY FOR EITHER ANY ERRORS, OMISSIONS, OR INACCURACIES IN THE INFORMATION PROVIDED REGARDLESS OF THEIR CAUSE, OR FOR ANY DECISION MADE, ACTION TAKEN, OR ACTION NOT TAKEN IN RELIANCE UPON THE INFORMATION CONTAINED IN THIS FAQ.

Support the Natural Resources Commission in administering state-aid funds identifying project opportunities for sustaining future water supplies

Objective 5B

Sargent Flood Resiliency Project

Frequent flood events have plagued the community of Sargent over the course of the city's history. Located within the Middle Loup River basin, the city is not in the floodplain of the river; but local surface water runoff and a high water table throughout the city has caused recurrent damages to homes and businesses, along with road infrastructure. In the spring and

summer, precipitation events regularly overwhelm the drainage ditches and sewer system.

The Sargent Flood Resiliency Project emerged from a feasibility study of flood risk and mitigation options.

The project consists of three components to reduce flooding frequency. The first component includes improvements within the city limits that enlarge three culverts and storm sewers. A fourth culvert is currently in design and is being replaced using Community Development Block Grant funds.

The second component is the creation of a new diversion channel north and east of town to

provide the community with protection from flooding for up to 100-year event. This diversion channel will intercept runoff from the contributing drainage area north of the town and divert it to the Middle Loup River without passing through the community. Upon completion of these first two components of the Sargent Flood Resiliency Project, the drainage structures within the community should be able to contain runoff from a 100-year (1 percent chance) precipitation event. A third component is the installation of up to 5 dewatering wells north of the community. Pumping these wells will lower the groundwater elevation over time, reduce repetitive damages from high groundwater levels, and deliver groundwater to a beneficial use by directing it to the Middle Loup River and ultimately to the lower Platte River.



Seek opportunities to promote continued investments in water resource projects aimed at addressing aging water supply infrastructure

Objective 5C

Water Resources Cash Fund

The Water Resources Cash Fund (WRCF) serves as a critical source of funding toward ensuring that fully and overappropriated portions of the state can meet requirements of interstate Compacts and Agreements while also working to preserve those communities and water users that have historically relied on those water supplies. The WRCF (Neb. Rev. Stat. § 61-218, 61-220 & 61-221) is used to reduce consumptive use, enhance streamflows, and recharge groundwater. The NeDNR has developed a storymap illustrating many of the projects that have been implemented across these areas of the state

A link to the storymap can be found [here](#).

The NeDNR has also worked closely with various partnering agencies to leverage these state funds with federal and local funds that have allowed for improving project outcomes with reduced overall costs to the state.

One of the projects funded through the WRCF is the installation of an automation and remote signaling project on the Meeker-Driftwood Canal. The Frenchman-Cambridge Irrigation District received \$2 million from the Colorado Settlement portion of the WRCF to upgrade flow measurement devices and install new control gates that can be remotely accessed. This project decreased unintended operation spills, increases water storage in the Swanson Reservoir, and increases groundwater recharge.



Back view of the newly installed control gates on Meeker Canal.

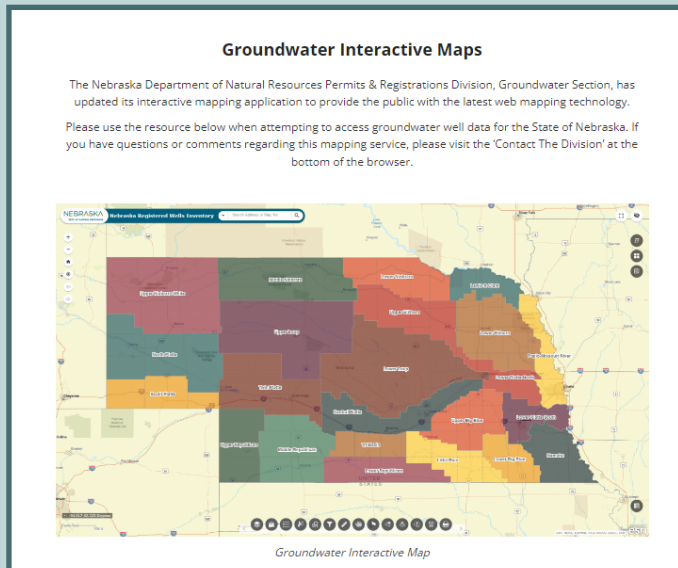
Work to support water right changes that can support innovative solutions for future water user needs

Objective 5D

Improving customer service

The process of obtaining and modifying surface water permits to appropriate water from Nebraska streams and reservoirs has benefited from ongoing improvements. The enactment of integrated water management statutes in 2004 (Nebraska Revised Statute 46-715) included expansion of the ability to transfer surface water appropriations. Irrigation appropriations (water rights) require detailed and accurate mapping of the land to which a water right is appurtenant. The number of acres irrigated

under a water right is related to the amount of water that can be legally withdrawn. In addition, only land approved in a legal order by the NeDNR or a district court for pre-1895 water rights may be legally irrigated.



Accurate maps are required to provide the information necessary to properly quantify and condition water rights. Having accurate maps enables faster and more accurate processing of applications. This is particularly true if an existing water right needs to be reconfigured. This is also important in times of water shortages when the NeDNR is called upon to administer short supplies.

One of the proactive activities benefitting the water users around the state is the development of a mapping program that provides quick and accurate maps upon which irrigation project sponsors can rely to

apply for new water rights or reconfigure existing water rights. Farm efficiency results in transition from irregular parcels of irrigated ground into partial and complete circle center pivot delivery systems. The basis for accurately filing and processing these applications is a high-quality accurate map.

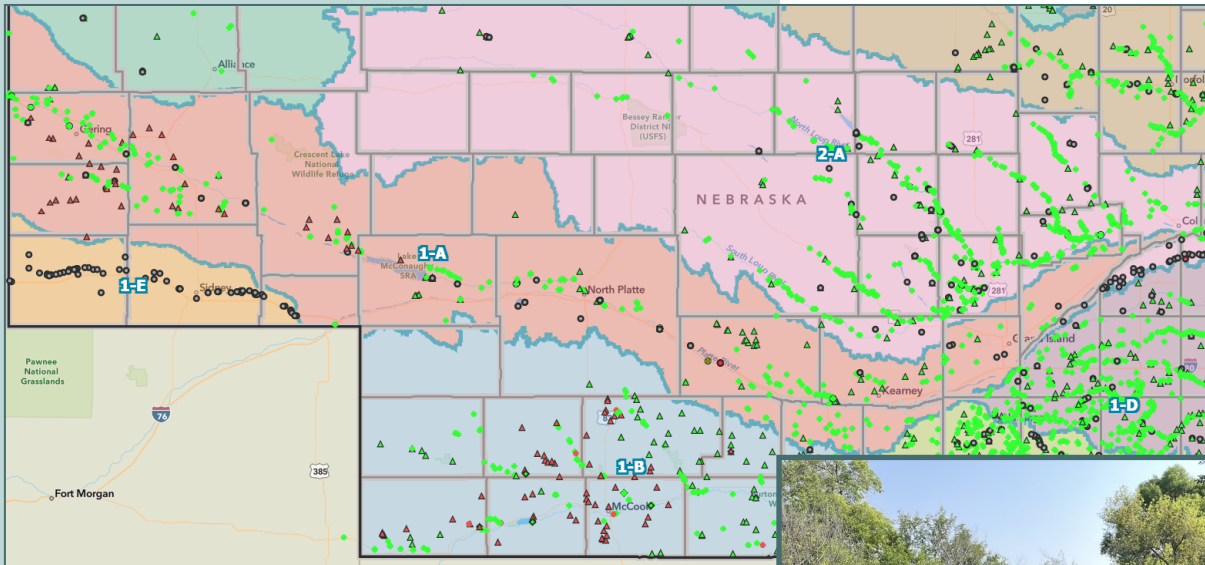
The NeDNR realized it was a difficult challenge for agricultural producers and others to provide adequate maps upon which applications are based. We now offer pre-filing mapping services as well as mapping improvements which greatly enhances our ability to efficiently process new applications and changes to existing water rights. The customers benefit from the service by saving time and expense. The NeDNR benefits from increasing the pace and accuracy of the permitting process.

The mapping products have recently been made available online. An additional benefit from mapping services provided to our customers is that the quality of online interactive map information has improved and will continue to improve over time as more irrigation projects modernize their delivery systems. The NeDNR will continue to assist in this conversion process. Many people and organizations utilize this information.

Continue to adopt technologies and data collection strategies that improve the administration of water rights

Objective 5E

Information at the fingertip



Having information available in the field is imperative for the NeDNR field office teams. The NeDNR information technology division has created programs that allow field office team members to access information about water right status using tablets and laptop computers, which has increased operation efficiency, reduced field errors, and minimized time in the field and office.

Displaying a current record of an appropriations status of open/closed helps field office staff determine who should be pumping or not pumping during their compliance visits.

If the appropriation is marked as 'closed' in the database this information is displayed on their tablets which speeds up their observations. A record is kept of the date and reason for closure which helps when communicating the reasons for closing the water right to the producer.



Provide agency-wide services and support in the areas of information technology and transparent data sharing, business process improvement, public information, and administration of state-aid funds in conjunction with the Natural Resources Commission

Goal 6

Enhance the public dissemination of water-related data to support transparent and effective planning and mitigation of future risks

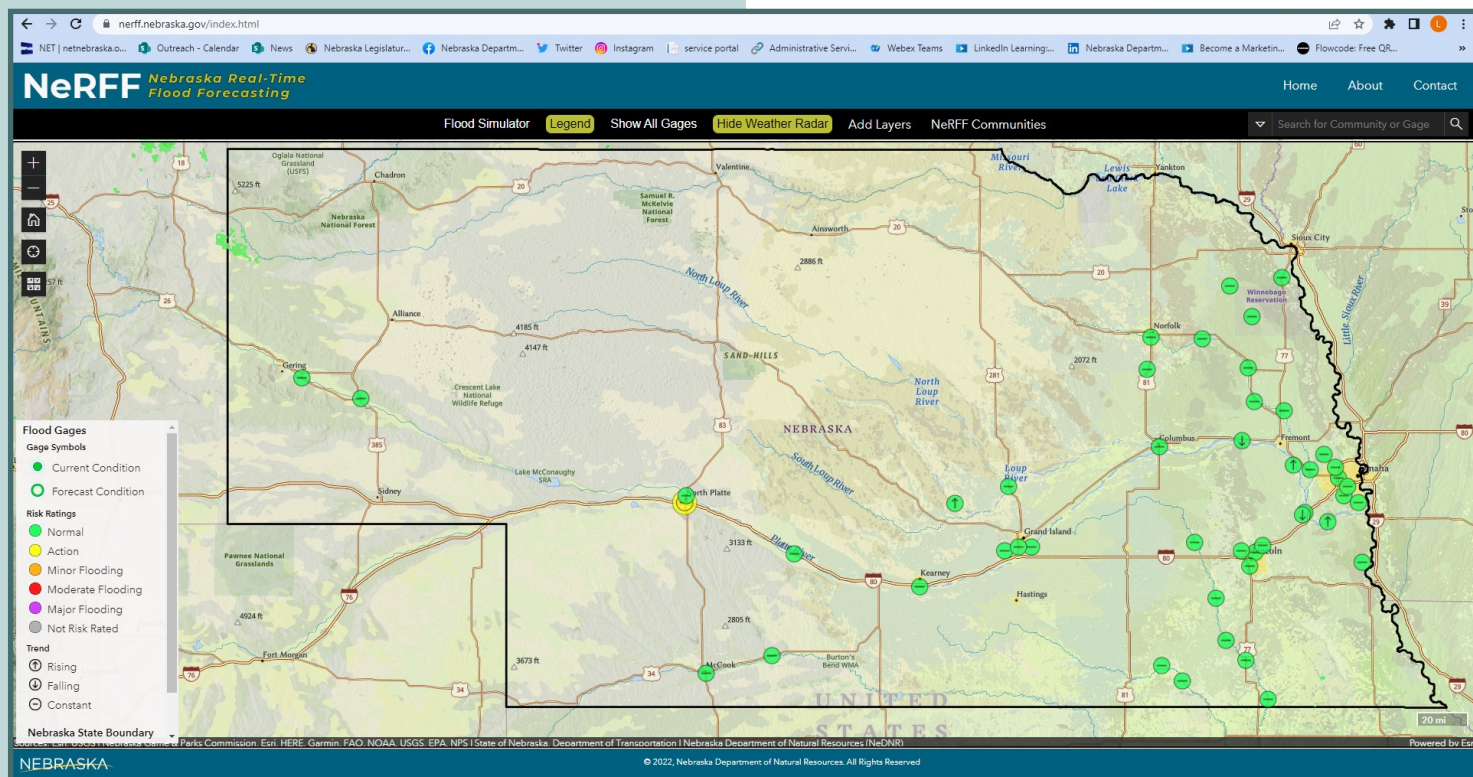
Objective 6A

Real-time flood information available 24/7

The Nebraska Real-Time Flood Forecasting (NeRFF) website was developed to provide emergency managers, community officials, and the public with a comprehensive, real-time collection of flood-related data, to support risk-based decisions regarding flooding. The goals of the project are to:

- Intuitively display up to date weather and stream gage stage data
- Provide flood inundation boundaries at every half-foot gage stage
- Provide flood inundation boundaries for each FEMA published recurrence interval
- Provide up to date flood information for Emergency Management and Response
- Prevent and reduce the loss of lives and property due to flooding for Nebraska residents

The site includes live weather radar updated every 5 minutes along with streamgage information. There is also a flood simulator allowing users to simulate different scenarios that could affect an area, aiding in planning.

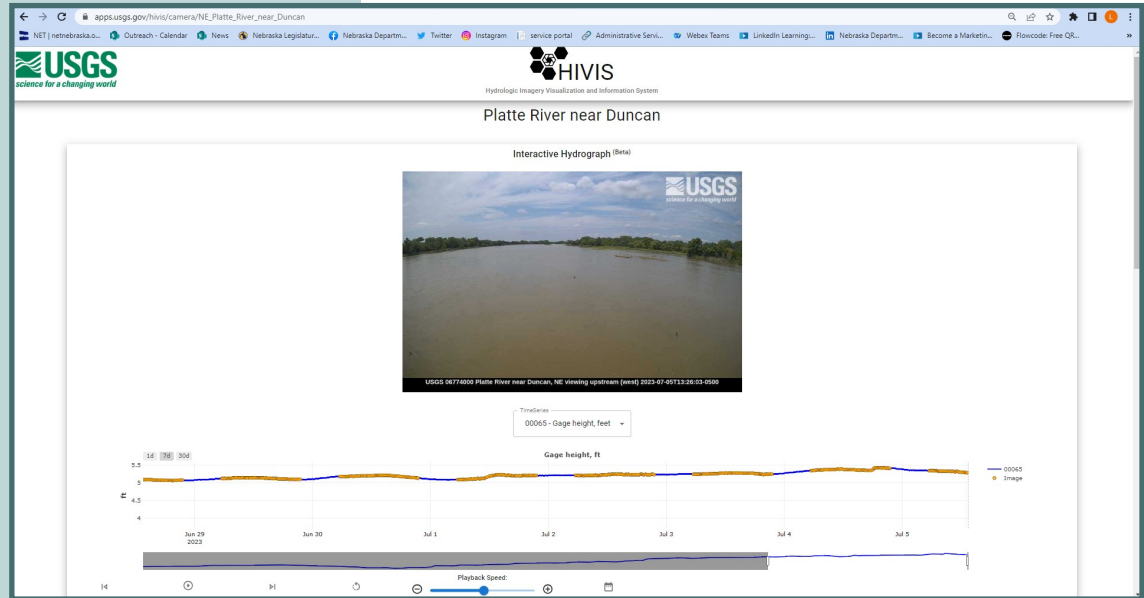


Continue to create more efficient processes for data exchange that enhance the understanding of water uses

Objective 6B

Visualizing data through high-resolution cameras

The NeDNR has partnered with the United States Geological Society (USGS) to visually monitor river sites on the Platte River at Duncan and the Elkhorn River near Waterloo. The high resolution cameras allow users to visualize the stream levels or monitor ice conditions for those sites.



The Hydrologic Imagery Visualization and Information System (HIVEIS) contains a system of high-resolution cameras throughout the United States that create a visual snapshot of current water conditions and helps to verify remote measurements.

Available on the site are still and timelapse photos from the cameras together with streamgage information over one, seven, and thirty day increments.

Being able to see the conditions as well as the streamgage information allows the NeDNR to make informed decisions concerning water management. Monitoring ice flows provides early warning to help mitigate flooding and damage caused by ice jams.



2022 Water Initiatives

An Update



LB1012

Perkins County Canal Project

Protecting Our State's Water Resources



Prewitt Diversion Dam, March 14, 2023, Colorado

Legislative Bill 1012 (2022) appropriated initial funding for the Perkins County Canal Project and directed the NeDNR to commission an independent study to estimate costs, develop a timeline, examine cost effectiveness, and evaluate the impact of the project on stakeholder. Zanjero was commissioned to complete this [study](#), which was completed in December 2022.

FUNDAMENTAL CONCLUSIONS FROM THE LB 1012 REPORT

1. Colorado has passed legislation, and is pursuing multiple projects, to capture and use water reserved for Nebraska by Article VI of the South Platte River Compact (i.e., Nebraska's winter supply).
2. Nebraska can only stop this from happening if it builds the canal identified in Article VI.
3. If the canal were operative today, the South Platte River would provide Nebraska an average of 78,400 AF – 113,400 AF depending on the final design capacity of the canal.
4. The canal is cost-effective; its operations would provide direct benefits of approximately \$698 - \$986M and up to \$1.4B to \$2B when regional benefits are included.

2023 LEGISLATIVE SESSION

Upon receiving the conclusions of the Zanjero report, the Legislature moved forward with transferring full funding for the

project, \$628M to be appropriated at \$62.8M per year for the next ten years.

ONGOING ACTIVITIES

- The Department secured an engineering firm to complete design and permitting activities for the project. The firm's initial focus is on specifying the canal alignment and permitting requirements so that the Department can proceed with the purchase of lands and efficiently work through the permitting process.
- The Department continues to coordinate with Nebraska water users; all major stakeholders (agricultural, industrial, municipal) support the project.
- The Department is having discussions with Colorado state officials and members of the Platte River Recovery and Implementation Program (PRRIP) to explore approaches that can streamline the design and permitting process and potentially create additional environmental and flood control benefits.

LB925

Resilient Soils and Water Quality Act

Producer Learning Community being developed

Introduced by Senator Tim Gragert of Creighton, LB 925 created the Resilient Soils and Water Quality Act (RSWQA). The Act serves to accelerate the use of best management practices for healthy soil; protect and improve soil and water quality; protect the public's health and enhance agricultural production and profitability; address soil health economics, resource stewardship, and environmental issues; increase awareness, education and promotion of best management practices for healthy soils through producer-to-producer, peer-to-peer, and mentoring relationships; and provide proof of healthy soil benefits through demonstration and research farms. To see the bill in its entirety, visit the [NeDNR website](#).

Under LB 925, the NeDNR provides support and assistance in the formation of a producer learning community (PLC). The PLC will foster the sharing of knowledge to carry out the purposes of the Resilient Soils and Water Quality Act. These efforts will be broad-based and work to recognize the diversity of soils, topography, rainfall, and cropping systems across the state. The Department will work to establish different regions in which to hold demonstrations and research farms that are representative of each diverse region's agriculture. The Department may also begin to enter into agreements for the purpose of expanding demonstration opportunities for producers.

Events for RSWQA attended to build the PLC:

- Yonts Water Conference on April 12th in Scottsbluff
- Central Plains Irrigation Association Conference on February 28th-March 1st in Kearney
- Nebraska Woman in Agriculture Conference February 23rd-24th in Kearney
- South Dakota farm tours on June 28th and 29th in Murdo and Pierre SD
- Testing Ag Performance Solutions (TAPS) on Wednesday, June 14, 2023

The Department will evaluate the effectiveness of existing activities such as those described above to determine if there are alternative solutions to enhance the programs reach and engagement. The Department also intends to incorporate activities geared at reaching high school and college-aged members of the learning community such as 4-H and FFA. This plan must have the ability to reach and engage the target audience, while retaining the flexibility to adjust for unforeseen circumstances. The plan must also include metrics for measuring successes and providing feedback.



Group photo from the South Dakota farm tours.

Water Recreation
Enhancement Act
And Jobs and Economic
Development (JEDI) Act

New Lake Development Near Ashland

The purpose of LB 1023 is to carry out projects recommended by the State Tourism and Recreational Water Access and Resource Sustainability (STAR WARS) Special Committee of the Legislature. The STAR WARS committee was created by LB 406 (2021) and charged with studying strategies to secure Nebraska's future water supply and strengthen Nebraska's flood control infrastructure, while also considering economic and recreational opportunities.

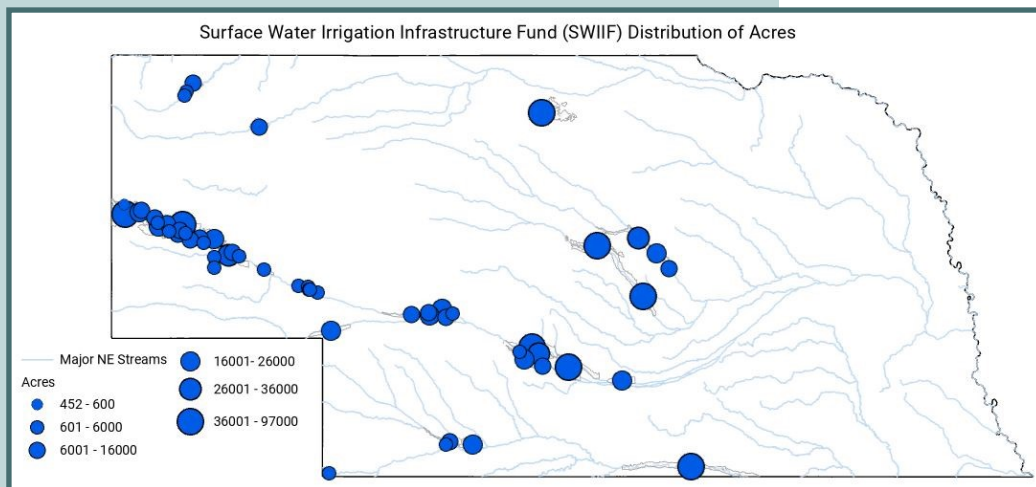


Platte River

The bill authorizes the Department of Natural Resources to administer the Jobs and Economic Development Initiative Act (JEDI Act). In administering the JEDI Act the Department was directed to first evaluate any potential impacts that a new recreational lake could create for Lincoln and MUD wellfields and the potential interest in public-private partnerships that would be necessary to support the construction of the recreational lake. The Department is currently working on implementing these two initial evaluations. If these preliminary evaluations identify that these items can be addressed then the Department would begin to conduct a full feasibility evaluation of the project.

Surface Water Irrigation Infrastructure Fund

Application process defined and executed



The creation of the Surface Water Irrigation Infrastructure Fund by the Legislature provides for a one-time transfer of \$50 million from Cash Reserves into the fund.

The fund, administered by the NeDNR is used to provide grants to irrigation districts. Grants can be used for the repair or construction of headgates, flumes, diversion

structures, check valves, or any other physical structures used for irrigation projects. Grants cannot exceed \$5 million per applicant.

In determining the validity of an application, NeDNR looks at a variety of factors including: number of water users, acres of land affected by a proposed project, and how critical the project is to the district's ability to divert water.

This fiscal year, an application process was developed and made available to irrigation districts and NeDNR conducted numerous site visits to allow for further evaluation of priorities.

One of the projects that has been completed is the repair of the Milburn Diversion Dam within the Sargent Irrigation District. The diversion dam suffered from extensive wear to the floor of the structure that posed concerns over its long-term reliability. Repairs to the structure consisted of covering the existing floor with a steel reinforced material that is expected to significantly extend the life of this important piece of the district's irrigation operations. The total project costs were approximately one million dollars with the Sargent

Irrigation District providing cash and in-kind contributions to fulfill their ten-percent matching requirement.

As of June 30, 2023, over \$25M of total funding has been obligated to approximately twenty-five irrigation districts across the state.



American Rescue Plan Act (ARPA) Projects

City of Lincoln invests in new water resources

The American Rescue Plan Act (ARPA) is the result of a federal stimulus bill passed by Congress in the spring of 2021. The Nebraska Department of Natural Resources was appropriated ARPA funds in 2022 under LB1014. This appropriation is divided into two programs.

Program 314, Critical Infrastructure Facilities, was appropriated \$23,100,000. This appropriation is helping to complete the rebuilding of the Gering-Fort Laramie tunnel that collapsed in 2019. The tunnel and connected canals provides water for irrigation in Western Nebraska. Repairs on the tunnel continue.

Program 319, Water Projects, was initially appropriated \$20,000,000. As of August 2023, the City of Lincoln has received \$199,200,000. Those monies are being used to help the City of Lincoln develop access to more water for its growing population and increased needs. The City of Lincoln has chosen to explore options using water from the Missouri River.

The City of Norfolk has also received \$2,000,000 to build a splash pad in a floodplain.



Missouri River



Financials

A glimpse at
the current and
future financials



A financial snapshot

American Rescue Plan Act (ARPA) Projects

- In 2019, the Gering-Fort Laramie Canal tunnel collapsed during the unprecedented floods. The tunnel needed to be rebuilt. The Gering-Fort Laramie project satisfies the match requirements for a project by the US Bureau of Reclamation for construction and repairs on any tunnel pursuant to the federal ARPA. These State and Local Fiscal Recovery Funds (SLFRF) are not being used for evidence-based interventions. Of the \$23,100,000 that has been contracted, the NeDNR has disbursed \$236,842.44 to date.
- There are multiple phases to the City of Lincoln project.
 - * Task 1, Project C-Development of Second Water Source, work has been completed. Not all invoicing has been submitted.
 - * Task 2, Project C, Phase 1, Development of Second Water Source. The validation and preliminary engineering for the second water source that was selected by the Mayor's Water Source Advisory Council has begun. Two wellfield sites are actively being considered and investigated with soil borings and test pumping wells scheduled to be installed during the 3rd quarter 2023 period. Access agreements were negotiated and approved between the City and landowners for access to property for conducting the field investigations. Preliminary finished pipeline alignments and property investigations for potential treatment plant sites were initiated.
 - * Task 3, Project A-Development of Existing Wellfield, Associated Treatment Improvements. A kickoff meeting was held on July 10, 2023, and this project is now under active design work.
 - * Task 4, Project A-Development of Existing Wellfield, Expansion Capacity. An engineering firm has tentatively been selected for the design and construction of the first segment of transmission pipeline that will join the Ashland and Missouri River water sources.

All of the \$20,000,000 has been contracted; and after two quarters of activity, The City of Lincoln has expended \$443,322.24.

SWIIF – Surface Water Irrigation Infrastructure Fund

- The purpose of this fund is to provide grants to be used to repair or construct any headgate, flume, diversion structure, check valve, or any other physical structure used for irrigation projects. So far, the department has expended \$1,164,115.64 to date for 23 projects.

JEDI – Job and Economic Development Initiative Fund

- The primary purpose of this fund is the construction and development of a lake for recreation and economic development in a manner that encourages private donation and investments, including the use of public-private partnerships.



Financials

Financial Summary Table

Budget & Actual — Admin. Services, Streamgaging, Water Planning, & Litigation
 Program 334 — Subprogram.06, 07, 19, & 21
 As of 9/5/2023

	<u>FY 2020</u> <u>Actual</u>	<u>FY 2021</u> <u>Actual</u>	<u>FY 2022</u> <u>Actual</u>	<u>FY 2023</u> <u>Actual</u>	<u>FY 2024</u> <u>Plan</u>	<u>FY 2025</u> <u>Plan</u>
Personal Services (Salary & Fringe)	\$2,155,403	\$2,436,118	\$2,315,397	\$2,350,708	\$2,693,810	\$2,774,624
Travel Expenses	\$39,178	\$16,503	\$40,966	\$65,477	\$68,000	\$63,083
Operating Expense—SOS Temporary Personnel	\$35,883	\$87,218	\$191,425	\$249,107	\$250,000	\$250,000
Operating Expense—Management Consultant, Contractual Services, and Engineering & Architectural Services	\$861,456	\$1,487,862	\$1,635,610	\$1,432,307	\$1,900,000	\$2,100,000
Equipment, Computer, and Software	\$338,564	\$236,143	\$482,393	\$429,423	\$300,000	\$400,000
Operating Expense—Other	\$216,364	\$122,350	\$415,583	\$429,423	\$150,000	\$150,000
Capital Outlay/Fixed Assets Except Computer	\$89,649	\$33,888	\$66,446	\$129,235	\$150,000	\$150,000
Interstate Water Litigation	\$4,800	\$4,800	\$4,800	\$0	\$10,000	\$10,000
TOTAL	\$3,741,297	\$4,424,882	\$5,152,620	\$5,571,167	\$5,692,725	\$5,820,361



NEBRASKA

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DEPT. OF NATURAL RESOURCES

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