



Annual Report to The Legislature and Plan of Work 2021-2022

Nebraska Department of Natural Resources

We've Moved



In March, the Nebraska Department of Natural Resources (NeDNR) moved into a new building located in the Fallbrook neighborhood in Lincoln. NeDNR joined the Department of Environment and Energy in the building. Soon after NeDNR moved in, the Departments of Agriculture and Economic Development, along with several commodity boards, moved into the building.

The consolidation of these departments brings fiscal and cooperative benefits to the state.

After two years without an office space large enough to accommodate the team, paired with the pandemic, it has been a relief to have an office in which to come together.

245 Fallbrook Blvd., Suite 201
Lincoln, NE 68521

Table of Contents

From the Director - PG. 1

Goal One - PG. 3

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

Goal Two - PG. 7

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 Three - PG. 10

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

Goal Four - PG. 15

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 Five - PG. 20

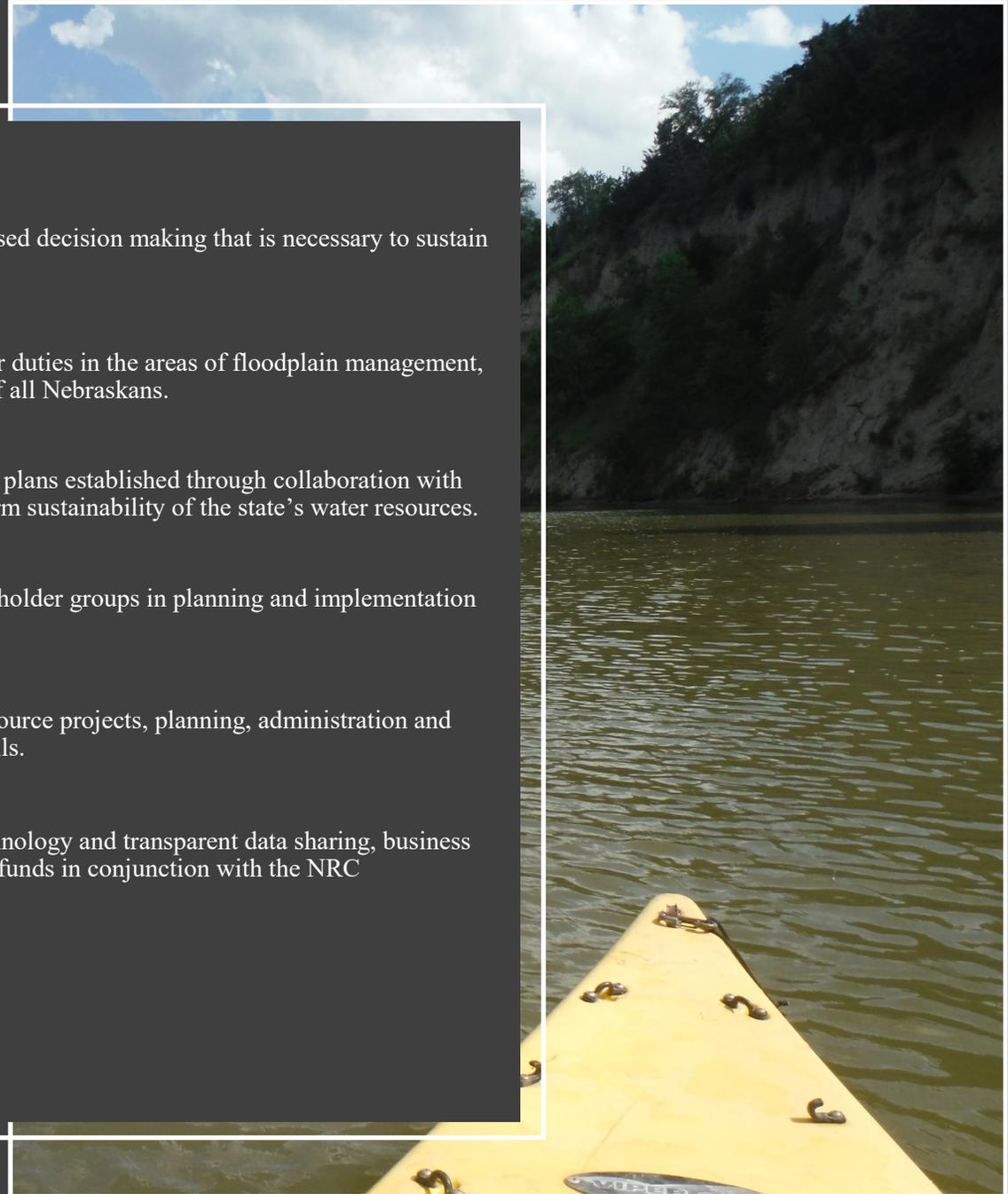
Protect existing water uses through collaborative investments in water resource projects, planning, administration and permitting of surface water rights, and the registration of groundwater wells.

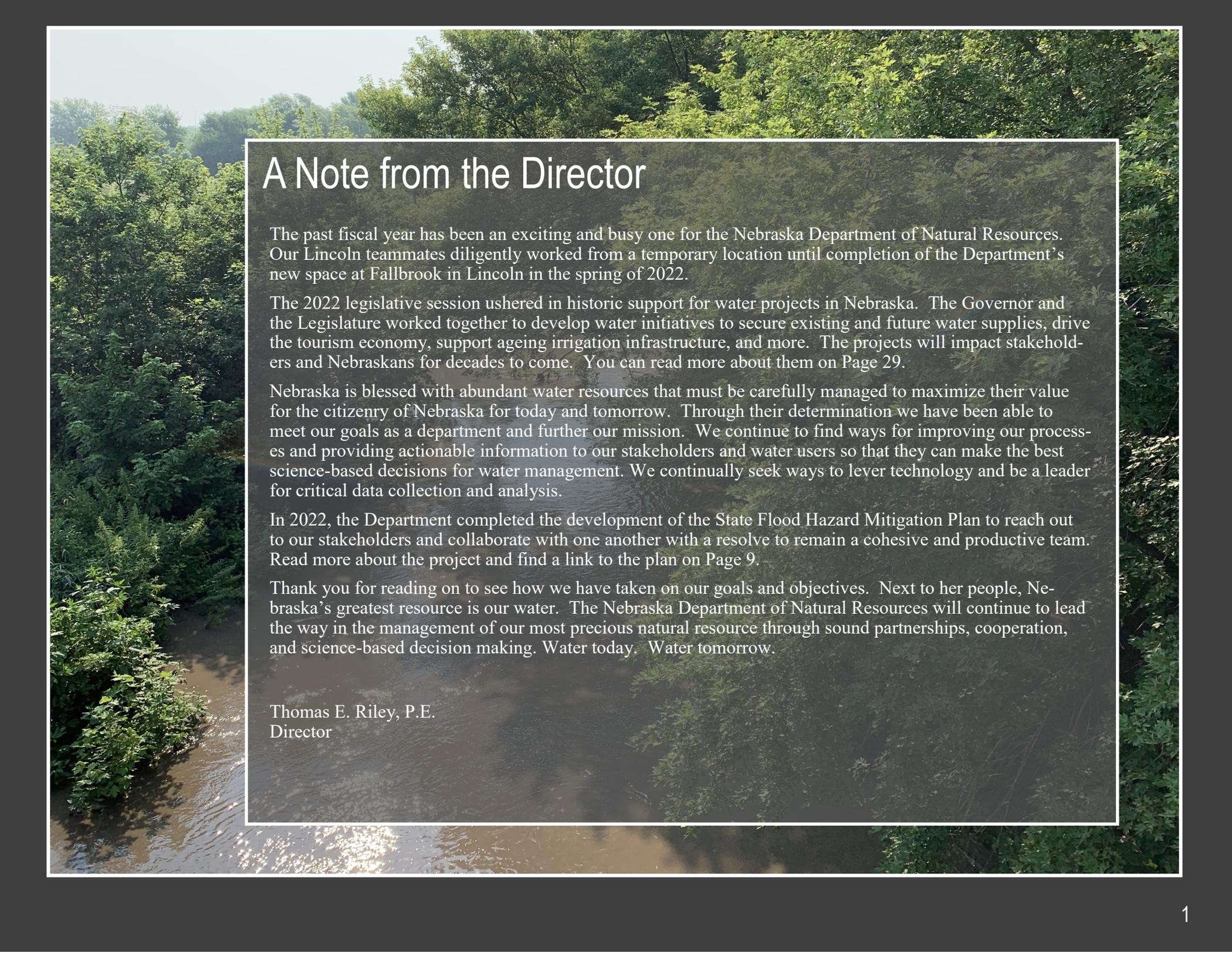
Goal Six - PG. 26

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 NRC

2022 Water Initiatives - PG. 29

Financials - PG. 36





A Note from the Director

The past fiscal year has been an exciting and busy one for the Nebraska Department of Natural Resources. Our Lincoln teammates diligently worked from a temporary location until completion of the Department's new space at Fallbrook in Lincoln in the spring of 2022.

The 2022 legislative session ushered in historic support for water projects in Nebraska. The Governor and the Legislature worked together to develop water initiatives to secure existing and future water supplies, drive the tourism economy, support ageing irrigation infrastructure, and more. The projects will impact stakeholders and Nebraskans for decades to come. You can read more about them on Page 29.

Nebraska is blessed with abundant water resources that must be carefully managed to maximize their value for the citizenry of Nebraska for today and tomorrow. Through their determination we have been able to meet our goals as a department and further our mission. We continue to find ways for improving our processes and providing actionable information to our stakeholders and water users so that they can make the best science-based decisions for water management. We continually seek ways to lever technology and be a leader for critical data collection and analysis.

In 2022, the Department completed the development of the State Flood Hazard Mitigation Plan to reach out to our stakeholders and collaborate with one another with a resolve to remain a cohesive and productive team. Read more about the project and find a link to the plan on Page 9.

Thank you for reading on to see how we have taken on our goals and objectives. Next to her people, Nebraska's greatest resource is our water. The Nebraska Department of Natural Resources will continue 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



NeDNR Goals and Accomplishments



Department Goal One



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

Investing in the Best

Each year, NeDNR dedicates budget resources to provide numerous opportunities for job growth through educational options.

This fiscal year, team members logged more than 2,000 hours of training.

NeDNR has partnered with LinkedIn Learning allowing team members the opportunity to explore more than 35,000 course offerings

NeDNR recently collaborated with the University of Nebraska-Omaha to create a drone pilot training course. After completion of the course, participants are certified to fly drones.



Jeremy Sedlacek piloting a drone.

NeDNR is increasingly using drones to inspect dams in the state.

This year, Jeramy Sedlacek, Austyn Houser, Caitlin Gustafson, David Gunderson, and Spencer Campbell completed the course.

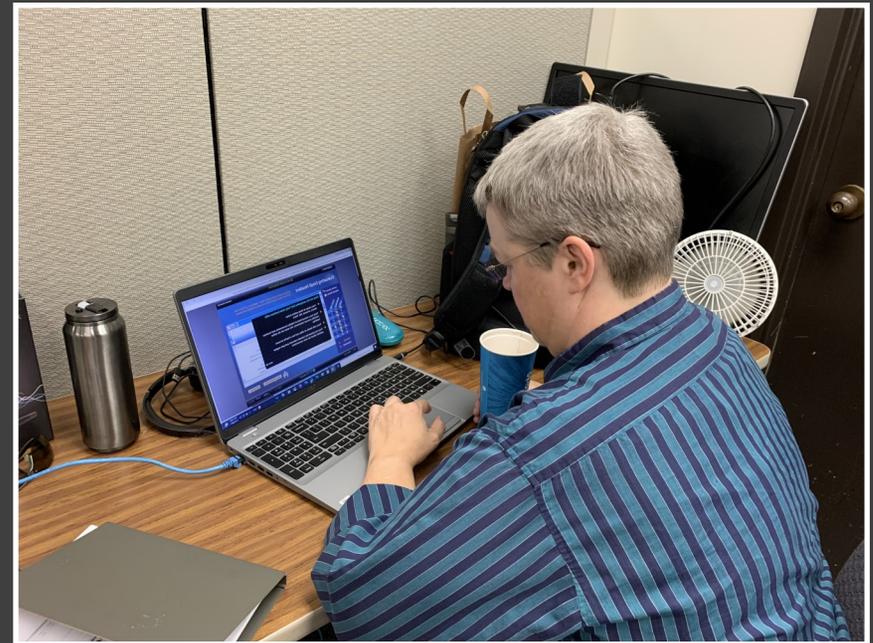
When BJ Green accepted the paralegal position at NeDNR, a condition of the position was that BJ

would earn an Associate's degree as a paralegal.

BJ is working toward that degree through Metropolitan Community College. The program requires 108 credit hours to complete. Transferring 45 previous credits and having completed 18 hours thus far, BJ, a 4.0 Dean's List student, is more than halfway through.

BJ has also earned a Legal Technology Certificate from the National Society for Legal Technology.

The state reimburses tuition for these classes.

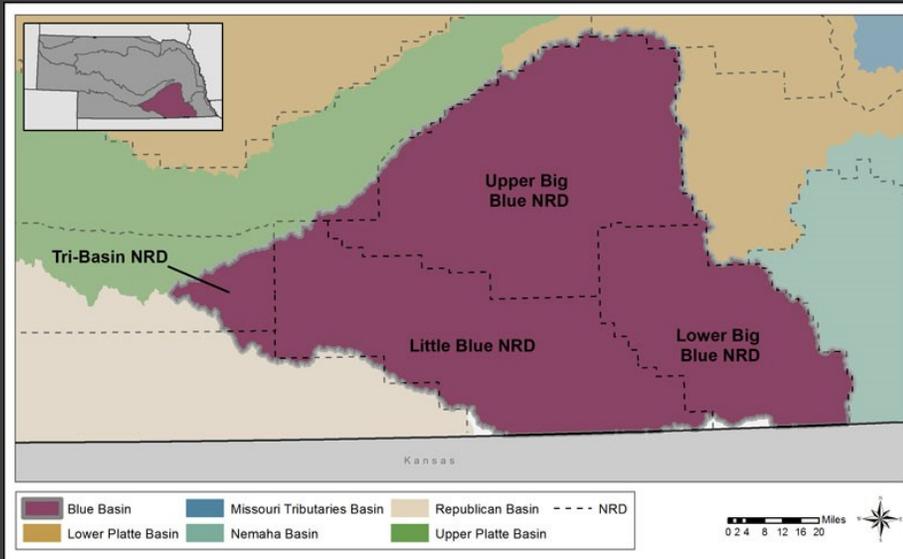
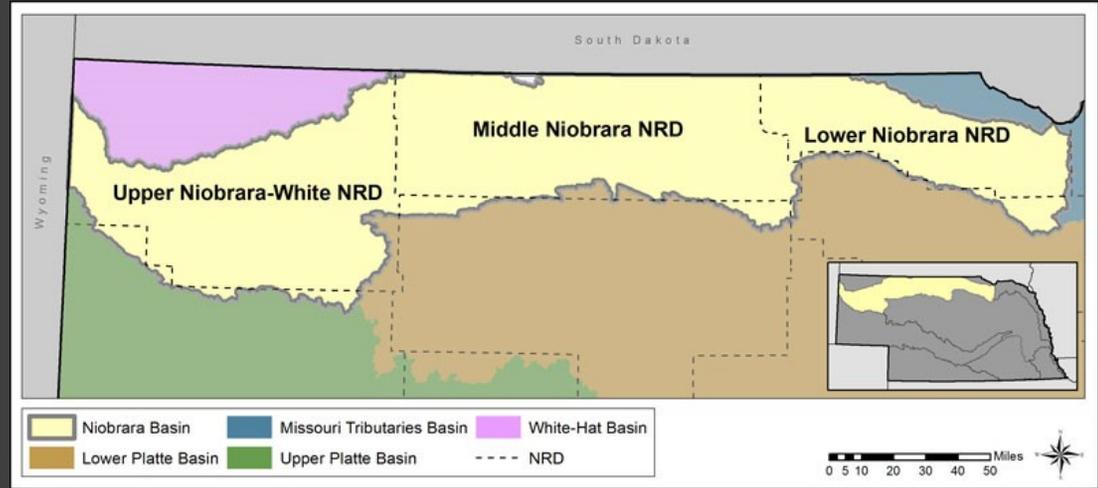


Paralegal BJ Green.

Working Together

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

The Department continues to collaborate with the USGS, National Park Service, US Fish and Wildlife Service, and several NRDs on the finalization of a groundwater model for most of the Niobrara basin. The model is now fully calibrated, and USGS will be running several scenarios that will ultimately help determine impacts of potential future development on flows in the Niobrara River, especially the scenic river reach.



The Department continues to work with several NRDs and consultants to finalize calibration of a groundwater model for the Blue River basins. At this time, calibration is nearly complete and it is expected that the model will be used to determine hydrologically connected areas and other water management scenarios, with final model publication occurring sometime in 2023.

Sharing Data

Develop methods to distribute data

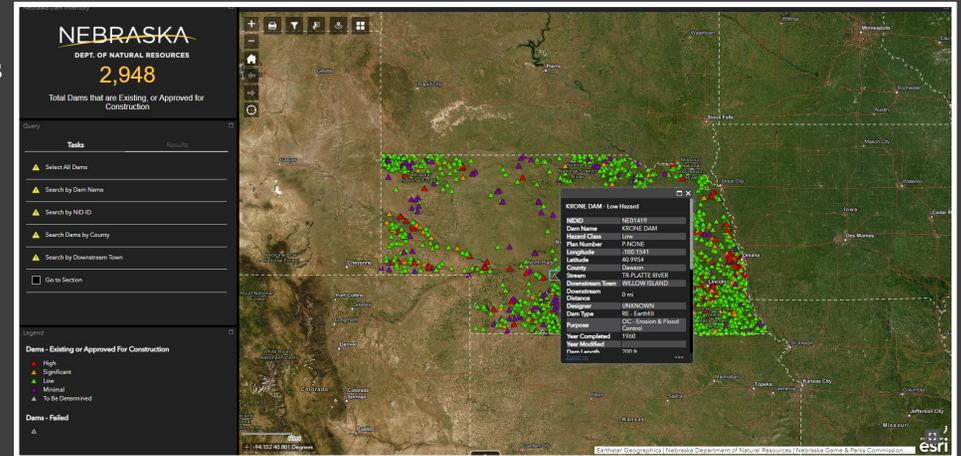
NeDNR Information Technology team members created Application Programming Interfaces (APIs) for internal and public consumption of NeDNR's data.

APIs work as the middlemen between applications allowing them to share information across websites and other applications.

This allows NeDNR's interactive maps, dashboards, etc. to have near real-time data, and for compatible interactive maps and websites to consume our data and display it in a user-friendly interface. This also allows public use of our most up-to-date data without manually downloading on a weekly or monthly basis.

NeDNR's API's are utilized by several state and federal agencies to make real-time data accessible to the public.

NeDNR also utilizes other agencies API's to bring real time data to our users and customers in their work processes.



Nebraska Department of Natural Resources API			
AdminDams	Show/Hide	List Operations	Expand Operations
AdminFieldInvestigation	Show/Hide	List Operations	Expand Operations
AdminFloodplain	Show/Hide	List Operations	Expand Operations
AdminPwap	Show/Hide	List Operations	Expand Operations
AdminWaterRights	Show/Hide	List Operations	Expand Operations
AdminWells	Show/Hide	List Operations	Expand Operations
Dams	Show/Hide	List Operations	Expand Operations
StreamGage	Show/Hide	List Operations	Expand Operations
WaterRights	Show/Hide	List Operations	Expand Operations
Wells	Show/Hide	List Operations	Expand Operations

[BASE URL: /wipApi , API VERSION: V1]

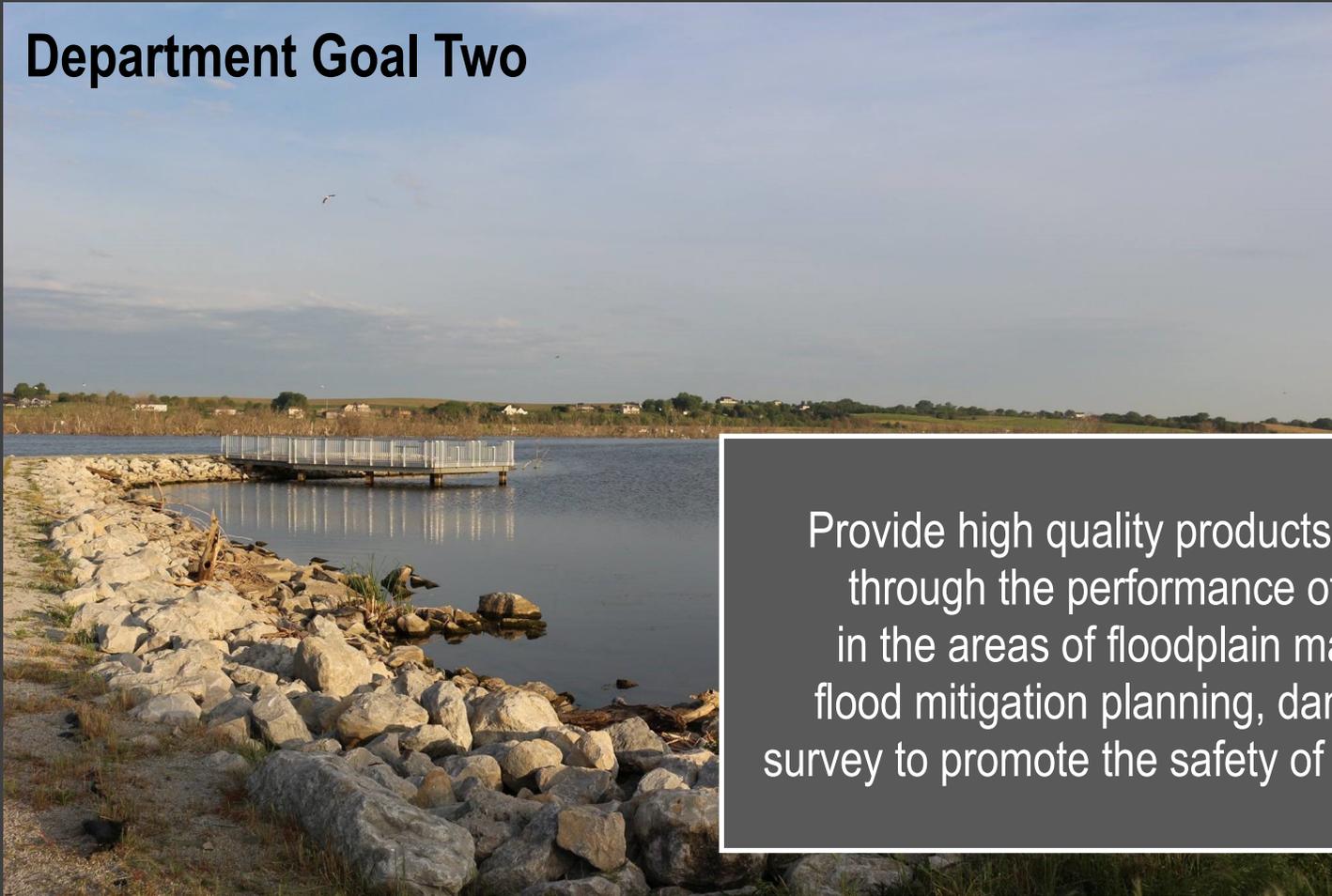
IT Vision

Empower the decision-makers/users with real-time reliable information relating to natural resources data with proper displaying and processing tools for efficient planning and effective management of Nebraska's land and water resources.

IT Mission

Provide an integrated natural resources information system for the State of Nebraska, and an easy online access to real-time information (and services) to decision-makers, data users and to the citizens using e-government portal and innovative technologies in a most responsive, efficient and cost-effective manner.

Department Goal Two



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.

Making Education Accessible to Stakeholders

Support local floodplain administrators with outstanding service and continued education

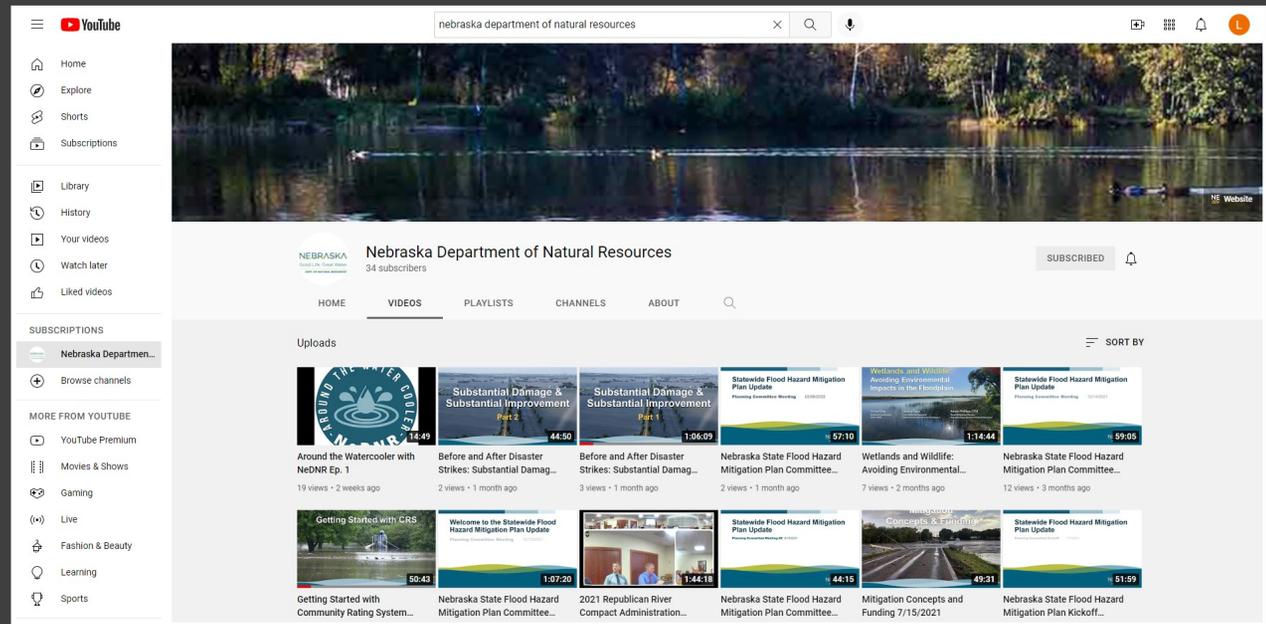
NeDNR has developed a full outreach and training program to raise awareness of floodplain management.

NeDNR provides monthly virtual training opportunities on a variety of basic and more advanced floodplain management topics.

Basic trainings target new floodplain administrators or those needing a refresher to ensure communities are aware of their responsibilities related to floodplain management.

Advanced topics cover flood insurance, post-disaster activities, violations, enforcement, and other similar topics.

Many of these trainings are posted on NeDNR's YouTube channel. NeDNR also offers two full day in-person floodplain management workshops annually concentrated on the topics of basic floodplain management and substantial damage/substantial improvement.



Collaborating Statewide to Keep Citizens Safe

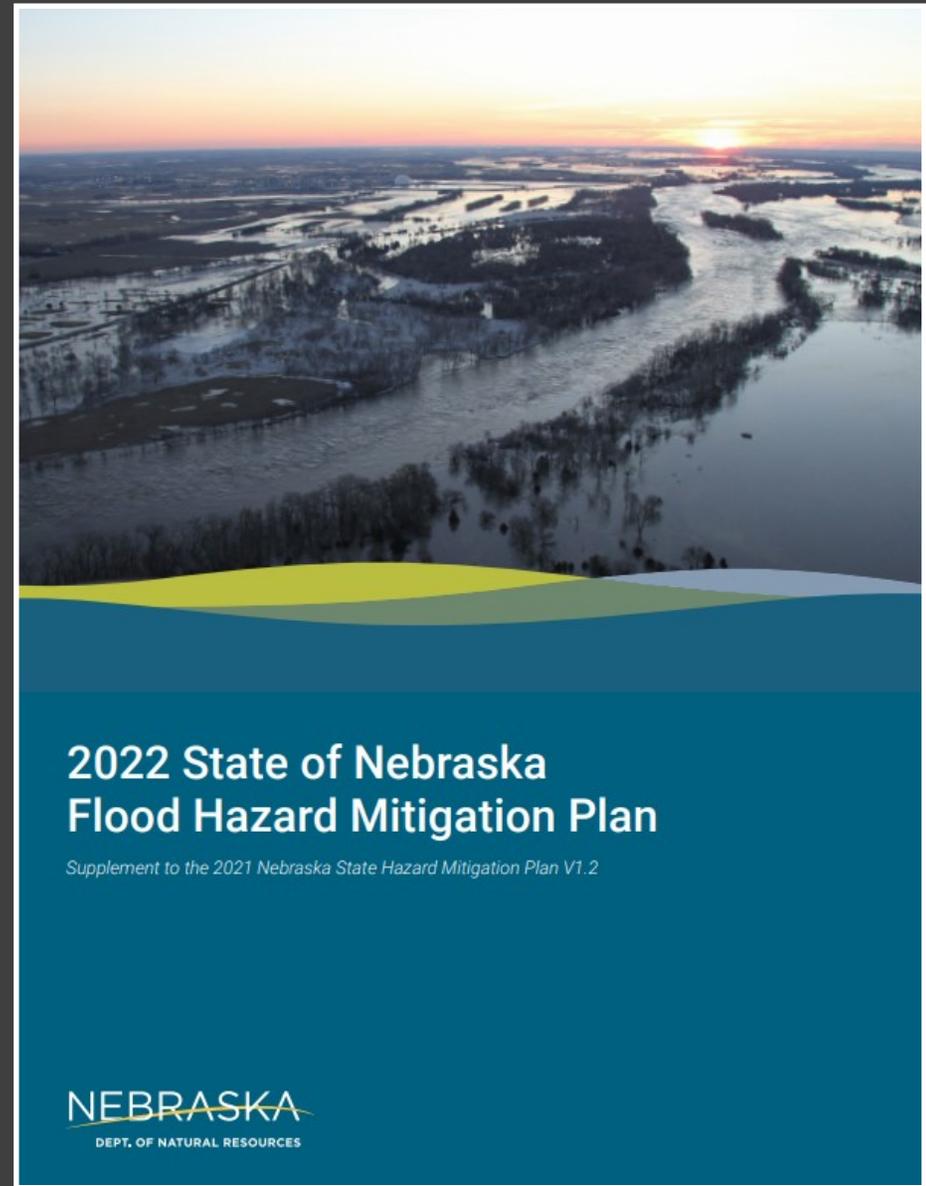
State Flood Hazard Mitigation Plan

The NeDNR recently completed an update to the State Flood Hazard Mitigation Plan. This multi-year effort worked to integrate information from a wide array of stakeholders from across the state. This plan update benefits Nebraskans by:

- Increasing the understanding of Nebraska's flood risks
- Incorporating citizen concerns into future planning
- Giving local communities a plan to build upon to address local needs
- Positioning the state and local communities to leverage additional resources in their floodplain management efforts.

For more information and to view the plan, visit <https://dnr.nebraska.gov/floodplain/nebraska-flood-hazard-mitigation-plan>

This plan was a collaborative effort with NeDNR, the Nebraska Emergency Management Agency (NEMA), and the Federal Emergency Management Agency (FEMA)



Keeping Nebraskans Safe

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

Over the past several years, NeDNR had identified deficiencies with the with Upper Salt Creek Dam 3-A near Sprague, Nebraska including the potential failure of the auxiliary spillway from erosion during a large flood, leaks developing in the principal spillway conduit, and overall inadequate spillway capacity. During an extreme flood event, floodwater could have overtopped the dam, leading to erosion and failure of the dam.

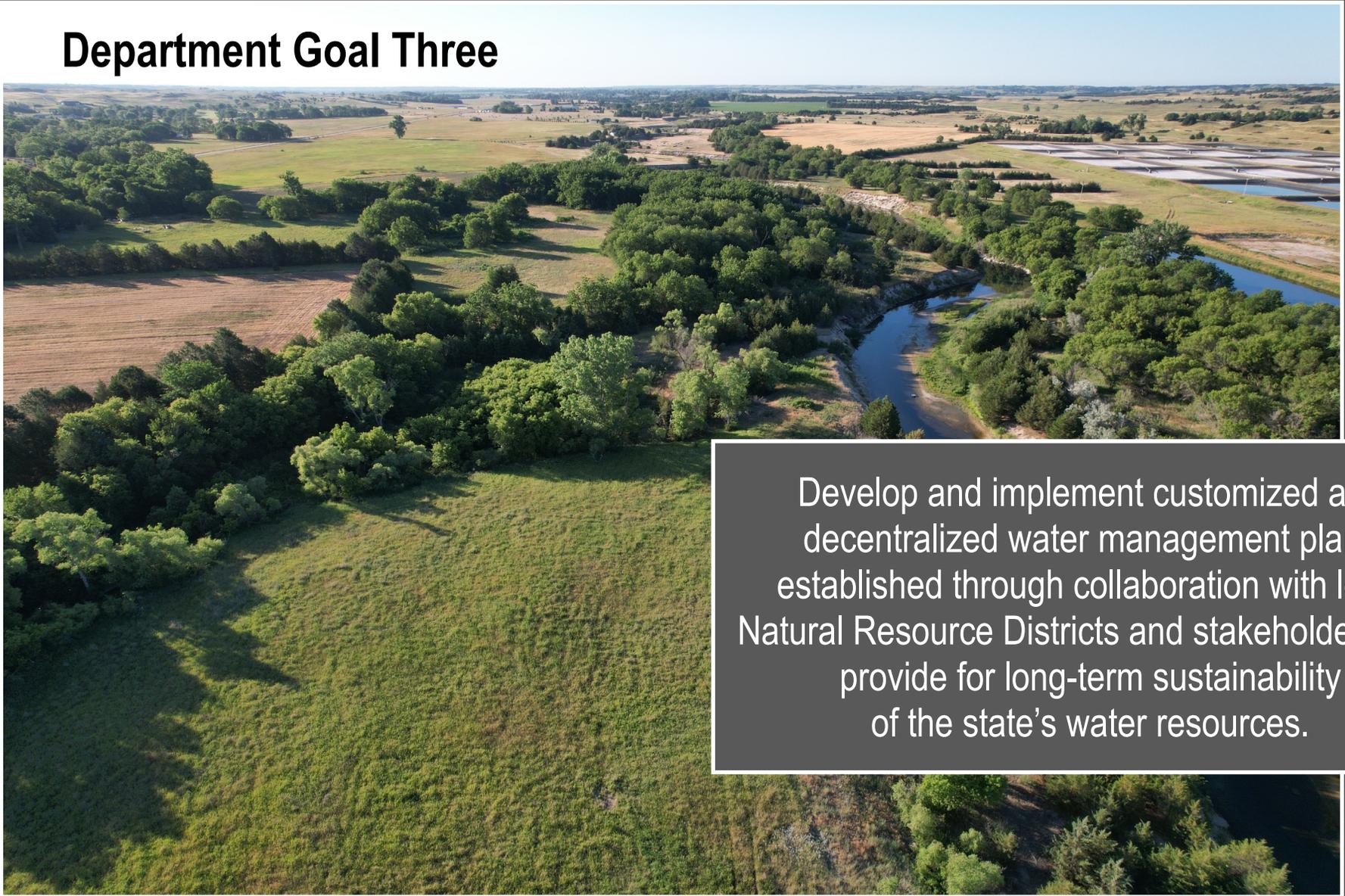
Furthermore, NeDNR rated the dam as high hazard potential due to the potential flooding of three homes located immediately downstream of the dam. NeDNR shared its inspection findings with the dam owner and the dam owner was able to secure funding and technical assistance for the design and reconstruction of the dam.

Prior to reconstruction, NeDNR reviewed the plans and specifications for the project to assure the design was consistent with current engineering standards. The reconstruction of Upper Salt Creek Dam 3-A was completed in 2021 and the dam now meets modern dam safety standards. The early identification of these potential hazards by NeDNR and communication of those risks to dam owners is what NeDNR's dam safety program strives to achieve.



Upper Salt Creek Dam 3-A

Department Goal Three



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

Communicating Progress to Stakeholders

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

The Water Planning Division of NeDNR, in conjunction with the local natural resource districts (NRDs), conducts stakeholder meetings for water planning efforts across the state. These stakeholder meetings strive to engage local interest in topics such as drought planning, basin water supplies, and other specific topics the relate to goals contained in integrated water management plans. These stakeholder driven processes often lead to focused efforts that NeDNR and partnering NRDs work to implement to address water supply and demand issues.

NeDNR strives to hosts these meetings locally and often provides opportunities for virtual meeting attendance too. The addition of virtual meeting options has made it possible for more remote stakeholders to participate in these important meetings.



Continued Progress in Water Planning

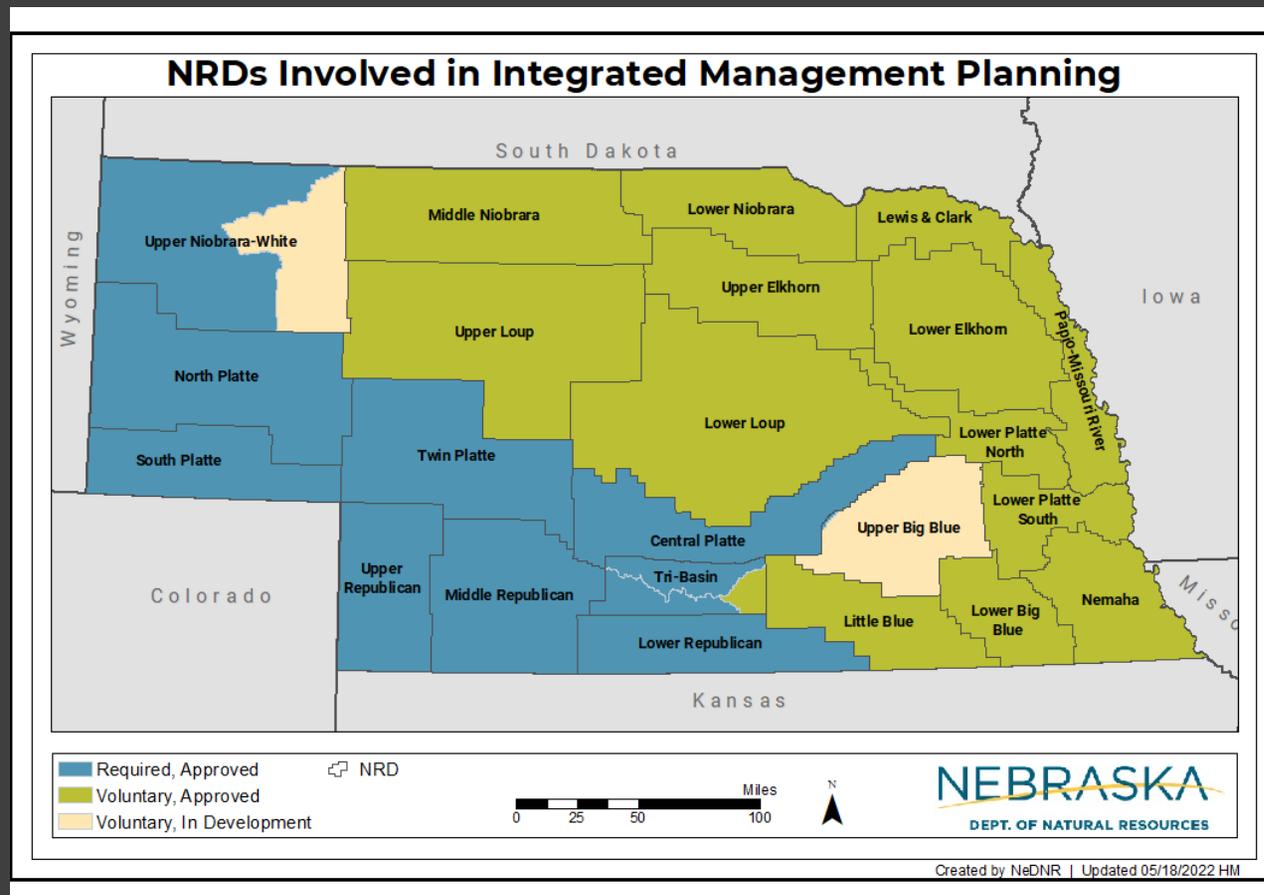
All NRDs in Nebraska now have an IMP either adopted or in development.

IMPs for Lower Big Blue NRD and Nemaha NRD became effective this year.

Upper Big Blue has an IMP in development, expected to be adopted in early 2023.

Upper Niobrara White has an IMP for the over-appropriated area of their district, and NeDNR is working with them to develop an Integrated IMP that would incorporate the required IMP and a voluntary IMP for the rest of the NRD area. Additionally, NeDNR in partnership with NRDs and stakeholders have been developing and implementing drought plans for many areas of the state.

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



Maintaining Compliance

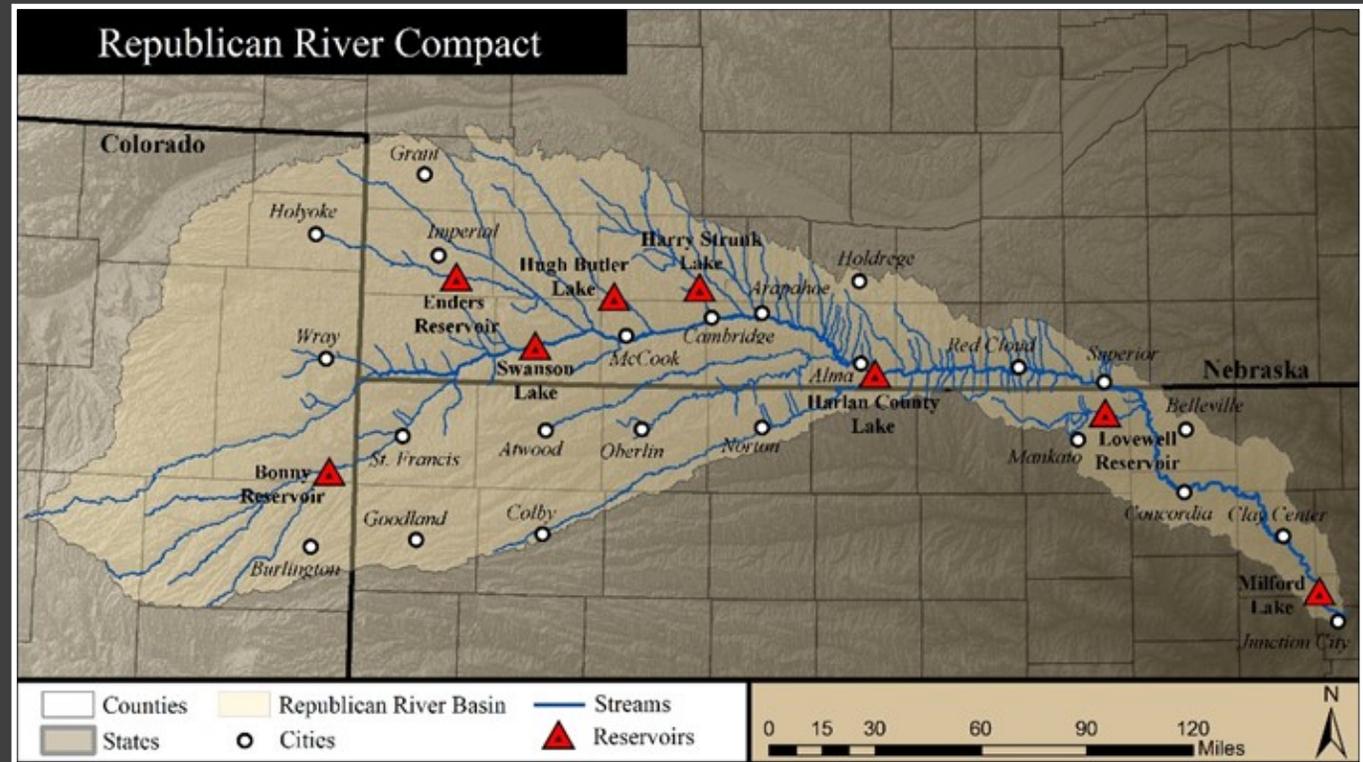
Republican River Basin-Wide Plan Drought Exercise

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

Republican River Basin Wide Plan identified drought planning as a key component of effective water management in the Republican River Basin. Therefore, drought exercises are being conducted to better understand the basin's ability to mitigate and respond to drought, while maintaining compliance with the interstate Compact and integrated management plans. Among the topics reviewed during these exercises are:

- Increasing understanding of the needs for and logistics of storing water for use during a drought
- Evaluating existing and potential new management actions to determine the long-term availability trends that provide carry-over storage to meet crop-water needs during drought
- Developing metrics that could be used to evaluate whether conservation of water for future use during a drought is successful

Following the drought planning exercises the group will evaluate whether to recommend any changes to the IMPs or if other water conservation measures can be implemented during future droughts.



Protecting the Future

Upper Platte Drought Contingency Plan

Work to provide increased preparedness for future droughts

The Upper Platte NRDs and the Nebraska Department of Natural Resources (NeDNR), collectively referred to as the Platte Basin Coalition (Coalition), have begun a collaborative effort to develop a Drought Contingency Plan for the Upper Platte Basin in Nebraska. This Plan will serve to refine the collective understanding of drought vulnerabilities, while developing more robust monitoring and forecasting tools that will aim to improve critical water supply needs of the area through drought periods. The Drought Task Force will be used to collect input from a variety of stakeholders in the area with a vested interest in the Drought Contingency Plan.



North Platte River at Nebraska-Wyoming state line. June 2022

Photos by Jim Ostdiek

Department Goal Four



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

Working Alongside Stakeholders

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

University of Nebraska research and extension specialists created an innovative way for participants to try out new agriculture processes and technology in a real-world setting without the often prohibitive costs and risks. The TAPS (Testing Ag Performance Solutions) program has four competitions: sprinkler, com SDI, sorghum, and winter wheat.

The Department of Natural Resources (NeDNR) participated in the 2021 sprinkler competition and took home first place with a profitability of \$795 per acre. The team consisted to Kent Zimmerman, Elizabeth Esseks, and Alexa Davis. The team was awarded \$2,000, which was donated back to the TAPS program. This was Zimmerman's third year with the program

"The program allows producers and others to try out new technology and learn to do things differently risk free," said Zimmerman.

With their test plot near North Platte, the team was able to be successful with less water and nitrogen by utilizing soil-monitoring technology.

"Being aware of your inputs can be both environmentally beneficial and profitable," said Davis.

Participating in the program helps the NeDNR team members better understand the work and needs of producers, which helps them relate to stakeholders on a higher level.



TAPS team Kent Zimmerman, Alexa Davis, Elizabeth Esseks

Communicating Through Diverse Channels

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

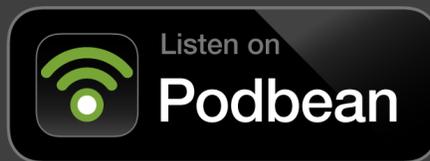
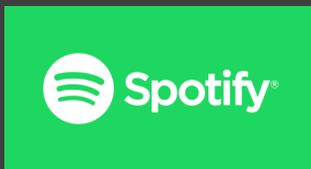
The NeDNR is always looking for new and innovative ways to reach and engage stakeholders. The NeDNR maintains social media presence on Facebook, Twitter, Instagram, YouTube, and LinkedIn, utilizes an information delivery system (Granicus/GovDelivery), and provides news on the website.

This year the NeDNR created a monthly podcast.

Hosted by Alexa Davis, Water Planning Division, and Dehvyne Ashmore, Director's Support Team, the podcast delves into a variety of topics related to water and the great work of the NeDNR professionals.

The first episode, released in March, focused on the department's move from the Nebraska State Office Building, where it had been located since its inception to a new facility in the Fallbrook district in Lincoln.

Other topics for the podcast have included dam safety, NeRAIN, aquifers, the water cycle, and the sandhills.



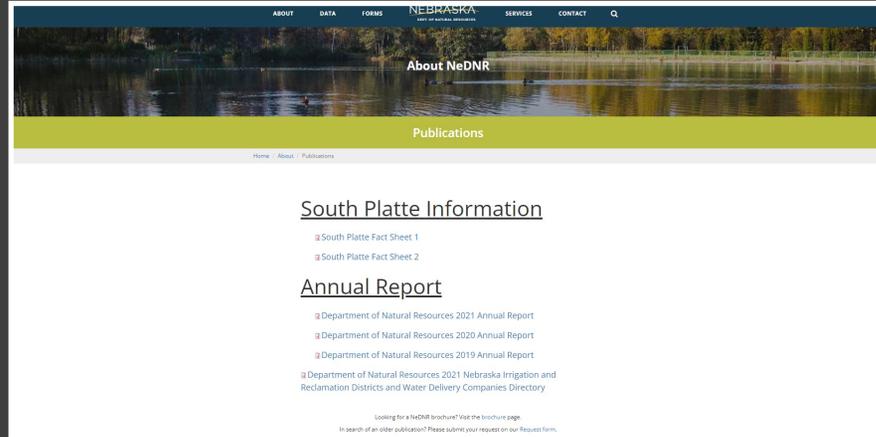
Alexa Davis and Dehvyne Ashmore podcasting from The Foundry.

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

Making Information Accessible

The NeDNR has developed a variety of avenues for distributing materials to stakeholders. A publications page on the website acts as a central location for department information.

This year, in response to stakeholder interest in a proposed canal (the Perkins County Canal) on the South Platte in Colorado, the NeDNR created three fact sheets with information concerning the history of a compact between Nebraska and Colorado created in 1923 authorizing the building of the canal.



NEBRASKA DEPARTMENT OF NATURAL RESOURCES – SOUTH PLATTE FACT SHEET #2

The Colorado Proposed Actions –

Why Nebraska Must take Actions to Preserve and Protect its Compact Entitlements

by **2050**

- Population will grow by 2.5 million
- Water demand projected to exceed supply

80% of the State's population

Only 20% of the State's water supply

2016 South Platte Basin Implementation Plan Brochure: <https://dnr.nebraska.gov/leg-content/uploads/2016/04/South-Platte-Basin-implementation-plan-brochure.pdf>

Platte River water passes into Nebraska. Colorado considers Nebraska's Article VI water to be available for this purpose since the Perkins County Canal was never built. This "excess" water is part of the water Nebraska will divert under Article VI of the Compact to ensure Colorado does not take what is reserved to Nebraska under the Compact. The project is thus critical to Nebraska's Compact enforcement efforts.

According to Colorado's own State Water Plan, the South Platte and Denver Metro Basins are projected to grow from approximately 3.5 million people in the year 2008 to about 6 million people by the year 2050. This is driving Colorado to address a projected annual water supply shortfall of roughly 200,000 acre-feet for municipal and industrial uses and over 400,000 acre-feet per year for agricultural uses in the South Platte Basin.*

Colorado has historically turned to water supplies from the Colorado River Basin to meet demands, by transferring water from that basin to the South Platte River. Those sources of water are becoming increasingly scarce, so Colorado's Legislature has been supporting efforts to determine what can be done to ensure no "excess" South Platte River water passes into Nebraska. Colorado considers Nebraska's Article VI water to be available for this purpose since the Perkins County Canal was never built. This "excess" water is part of the water Nebraska will divert under Article VI of the Compact to ensure Colorado does not take what is reserved to Nebraska under the Compact. The project is thus critical to Nebraska's Compact enforcement efforts.

In 2016 the Colorado Legislature passed House Bill 16-1256, titled "South Platte Storage Study" (SPSS) to identify water storage options along the lower South Platte River to capture flows leaving Colorado **in excess of the minimum legally required amounts**.¹ The results of Colorado's analysis², shown in Table 1-1, indicates that 293,000 acre-feet of "water delivered to Nebraska in excess of the Compact" is that without the Perkins County Canal Colorado is allowed to reduce the South Platte River flows by approximately 90%.

Statistics	Physical Water Leaving Colorado (Livable Supply)	Water Delivered to Nebraska in Excess of the Compact (ft)
Annual Median (in-cft/yr)	231,000	293,000
Annual Average (in-cft/yr)	436,000	397,000
Minimum Year (in-cft/yr)	29,000	30,000
Maximum Year (in-cft/yr)	1,957,000	1,904,000
Total for 20yr Period 1999-2015 (in-ft)	8,728,000	7,939,000

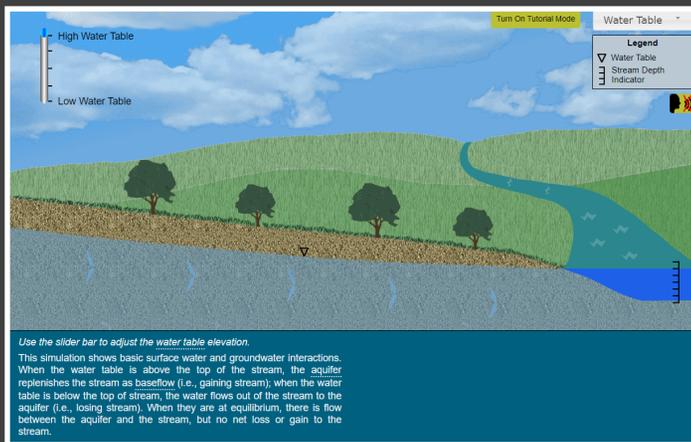
¹ "Business as Usual" projections in Tables 2 and 3 of the January 2022 Draft South Platte Basin Implementation Plan: <https://dnr.nebraska.gov/leg-content/uploads/2022/01/2022-Draft-SPSS-Implementation-Plan-2022-01-2022.pdf>

² The Final Report for HB16-1256 can be found here: https://southplattebasin.com/wp-content/uploads/2016/04/South-Platte-Storage-Study_FINAL_REPORT.pdf

Fun Educational Materials

Stream Simulation Games

NeDNR developed a series of interactive applications and about water, called Stream Simulations. Each simulation has a worksheet and a key to go along with them as well as a word bank! Click on the graphic to the left to load the Stream Simulations or worksheets.



Water Trivia

NeDNR has also created two sets of water trivia questions, and easy set and difficult set. Trivia can be found [here](#)

Bingo

NeDNR developed BINGO sheets for kids and adults. There are 6 BINGO sheets and an options page! Please click [here](#) to load BINGO

Utilizing Technology

COVID-19 changed how the world does business, and it has been no different for NeDNR.

Team members have found creative ways to encourage stakeholder participation in planning through virtual methods.

NeDNR has utilized Zoom and Cisco WebEx to conduct meetings throughout the state. In addition, meetings have been recorded and shared using YouTube, allowing participants from across the state to keep apprised of planning activities.

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



The Republican River Compact Administration annual meeting was held both in-person and virtually using Zoom..

Afterwards, the meeting video was available for stakeholders to view on the NeDNR YouTube channel.



Department Goal Five



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.

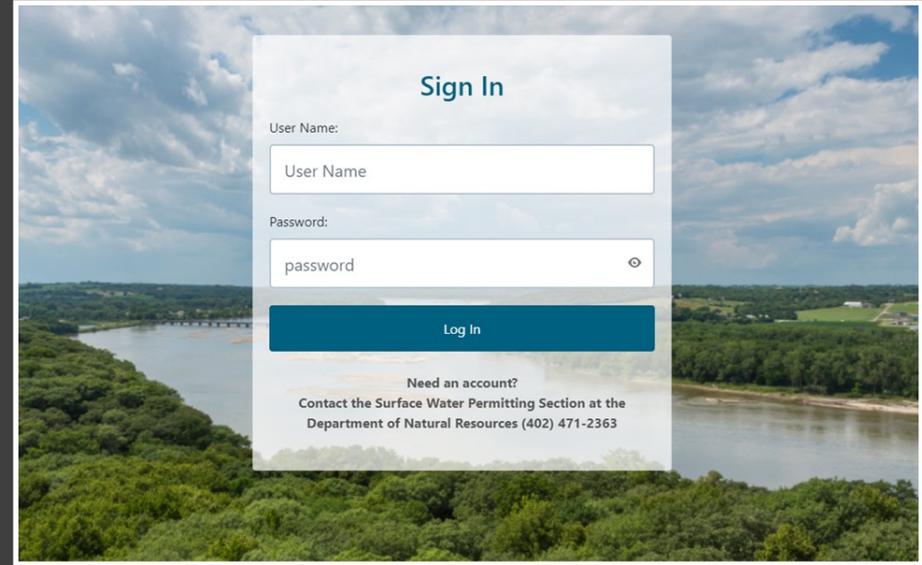
Continue to streamline water rights and well registrations processes for more efficient customer interactions

Improving Customer Experience

The Platte River Decision-Support System (DSS) is a comprehensive approach implementing scientific, economic, environmental, and legal considerations into a structured process that gives NeDNR the ability to quickly respond to rapidly changing water resource conditions along the Platte River. DSS allows for streamlined application submittal, review, and approval processes for users looking to utilize excess water supplies when they are available.

One of the proactive activities benefitting the water users on the Platte River is facilitating recharge of aquifers along the river which mitigates the impacts of groundwater pumping and provide flow enhancements through natural underground flow returning to the stream. Recently the new portal for online application and tracking system was utilized for all recharge applications on the Platte River. This allows for easy submittal of applications for surface water diversions for aquifer recharge. The first uses of this system resulted in quick turnaround of approvals which received positive feedback from the water users.

One theme that has increased productivity and is implemented in both the permitting and groundwater registration programs is acceptance of electronically transmitted forms and maps. The most dramatic change has been that most change of ownership forms come via e-mail attachment. This has increased convenience for our customers and provided for more timely filing of water right and well ownership changes. Title company offices are particularly pleased with this convenience. The fillable PDF forms are brief and straightforward.



**STATE OF NEBRASKA
DEPARTMENT OF NATURAL RESOURCES**

NOTICE OF CHANGE OF OWNERSHIP/WATER RESOURCES UPDATE NOTICE

<p>1. Name, address and telephone number of person to be shown as owner in Department records. Name(s) must be exactly as described on deed or other document transferring ownership of property.</p> <div style="border: 1px solid black; height: 100px; width: 100%;"></div> <p>Zip Code: _____ Telephone No.: (____) _____</p> <p>E-mail Address: _____</p> <p><input type="checkbox"/> Alternate Contact Requests: If this box is checked, complete items 6-15 on the second page</p>	<p style="text-align: center;">FOR DEPARTMENT USE ONLY</p> <p>Owner ID _____</p> <p>Surface Water Appropriation(s) Changed: _____</p> <p>_____</p> <p>_____</p>
-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Utilizing Funds

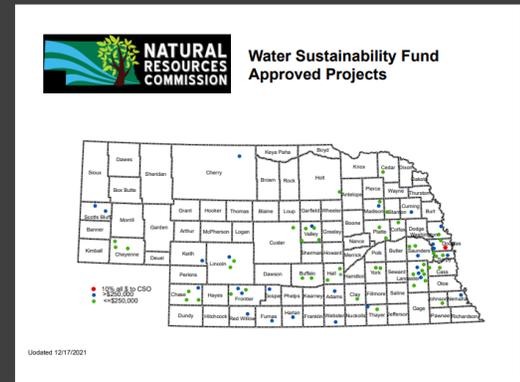
Water Sustainability Fund

The Water Sustainability Fund (WSF) is a source of financial support to help local project sponsors achieve the goals set out in Neb. Rev. Stat. §2-1506. The Nebraska Natural Resources Commission (NRC) oversees WSF operations including application review, scoring & ranking, and awarding funding to successful applicants. The Department of Natural Resources (NeDNR) administers the WSF fund by initially reviewing the newly filed applications and forwarding those that meet minimum statutory requirements to the NRC. Once the NRC awards funding to a project, NeDNR enters into a contract with the project sponsor, receives and reviews reimbursement requests, disperses funds and monitors project progress. Of the annual funding appropriated by the Nebraska Legislature, ten percent is designated by statute for projects separating storm and sewer water. The NRC also reserves ten percent for projects requesting \$250,000 or less.

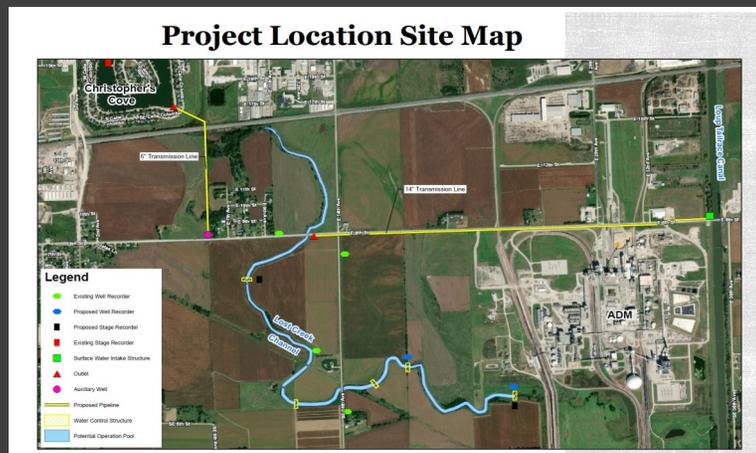
The NeDNR has created an informative story map highlighting several WSF projects. Find it here:

<https://gis.ne.gov/portal/apps/storymaps/stories/c44608bb0b3d468cb4da9e6912c4fb6a>

The Columbus Groundwater Recharge Project (below) and the Central Nebraska Public Power and Irrigation District Canal Works Project (Page 24) are two examples of the important work being done utilizing the Water Sustainability Fund.



Columbus Groundwater Recharge Project



The project utilizes available surface water coupled with a groundwater recharge system that will provide a sustainable water resource, all while achieving an Integrated Management Plan goal of working with local government to augment water supplies and maintain an efficient/economical balance between current users and future demands.

The project recycled an equivalent amount of ADM discharge water into Lost Creek Channel and Christopher’s Cove. Check structures will regulate the water and pond it in the channel. Modeling suggests the project will increase groundwater levels more than 10 feet and local lakes will recover to their planned elevations.

Image courtesy of the Lower Loup NRD

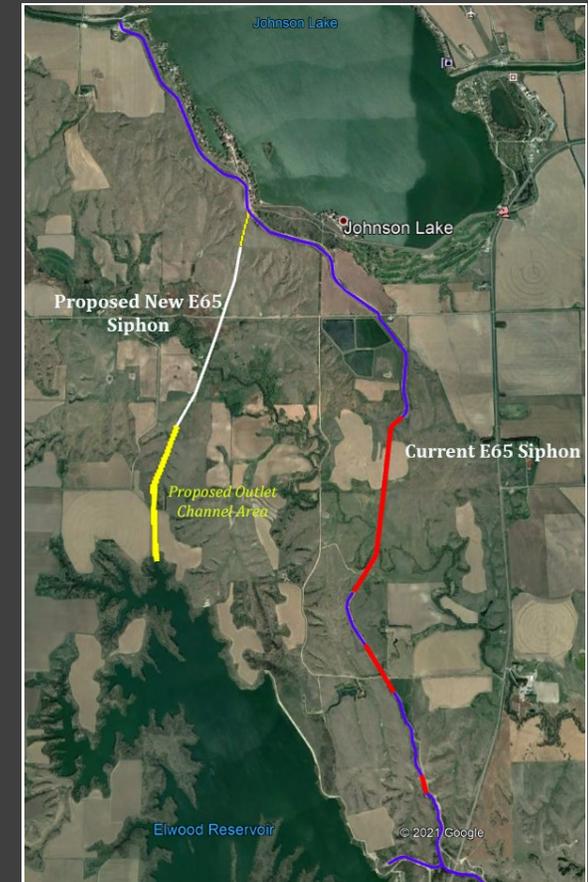
Modernizing Infrastructure

Central Nebraska Public Power and Irrigation District Canal Works Project

The CNPPID E65 canal works provides water to 150 tenants at 414 separate diversion points, ultimately serving 42,000 irrigated acres. This canal/siphon project, funded in part through the Water Sustainability Fund, is responsible for water stored in the Elwood Reservoir, a 1,100-acre irrigation regulating reservoir that is also known for its trophy fishery.

The existing siphons have been operational since 1941, and after 80 years of service, they are in a dilapidated condition. A new siphon alignment has been designed to address this essential aging infrastructure.

The existing E65 siphons are critical infrastructure components for the CNPPID E65 irrigation canal works.



Images courtesy of CNPPID.

Finding Solutions to Sharing Water Resources

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

The Department has been collaborating with natural resources districts and irrigation districts in the Platte River basin to develop innovative solutions to accommodate future water user's needs. These solutions have developed over the last decade as Nebraska has grappled with sometimes competing demands for water from traditional irrigation water users, integrated management plan goals and objectives, goals of the multi-state and federal Platte River Recovery and Implementation Program.

One result of this collaboration was consensus on a concept for accomplishing transfers of surface water rights without the traditional contested process. This new process strives to leave unused water that would have previously been diverted for irrigation in the river and available to the next junior appropriator. Under this approach there is no need for water administration or other complex regulatory schemes that are often contentious. One of the basic tenets of integrated management is to reduce conflict between water users and this approach has achieved that objective. The first two such applications were recently approved without controversy and are benefitting water users on the Platte River.



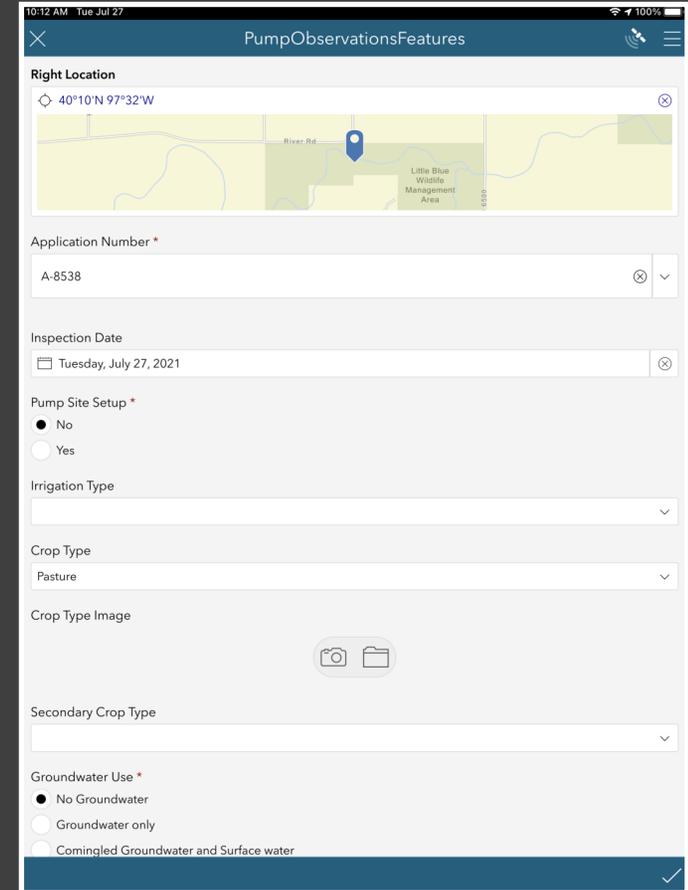
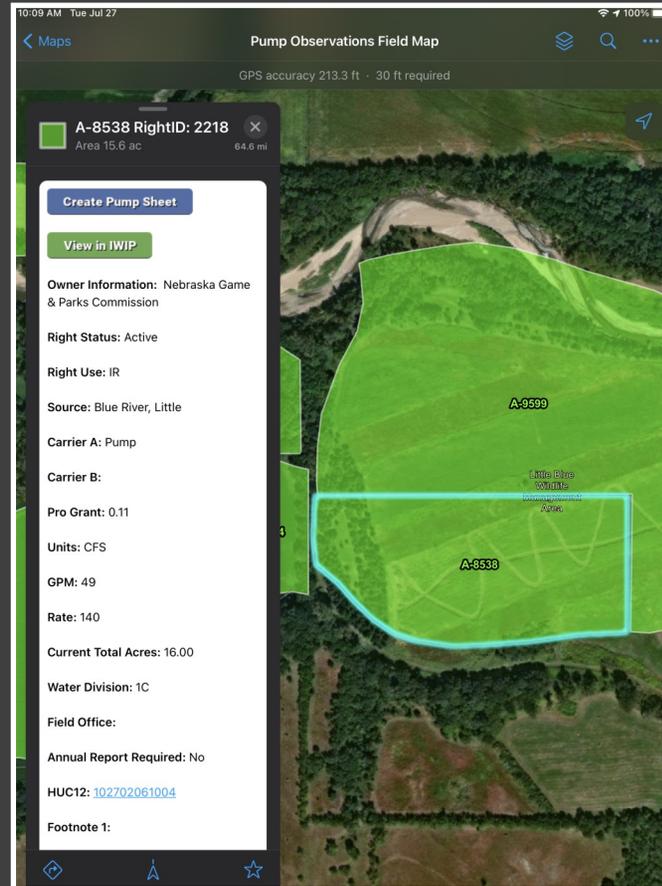
Continue to adopt technologies and data collection strategies that improve the administration of water rights

Collecting Data Efficiently

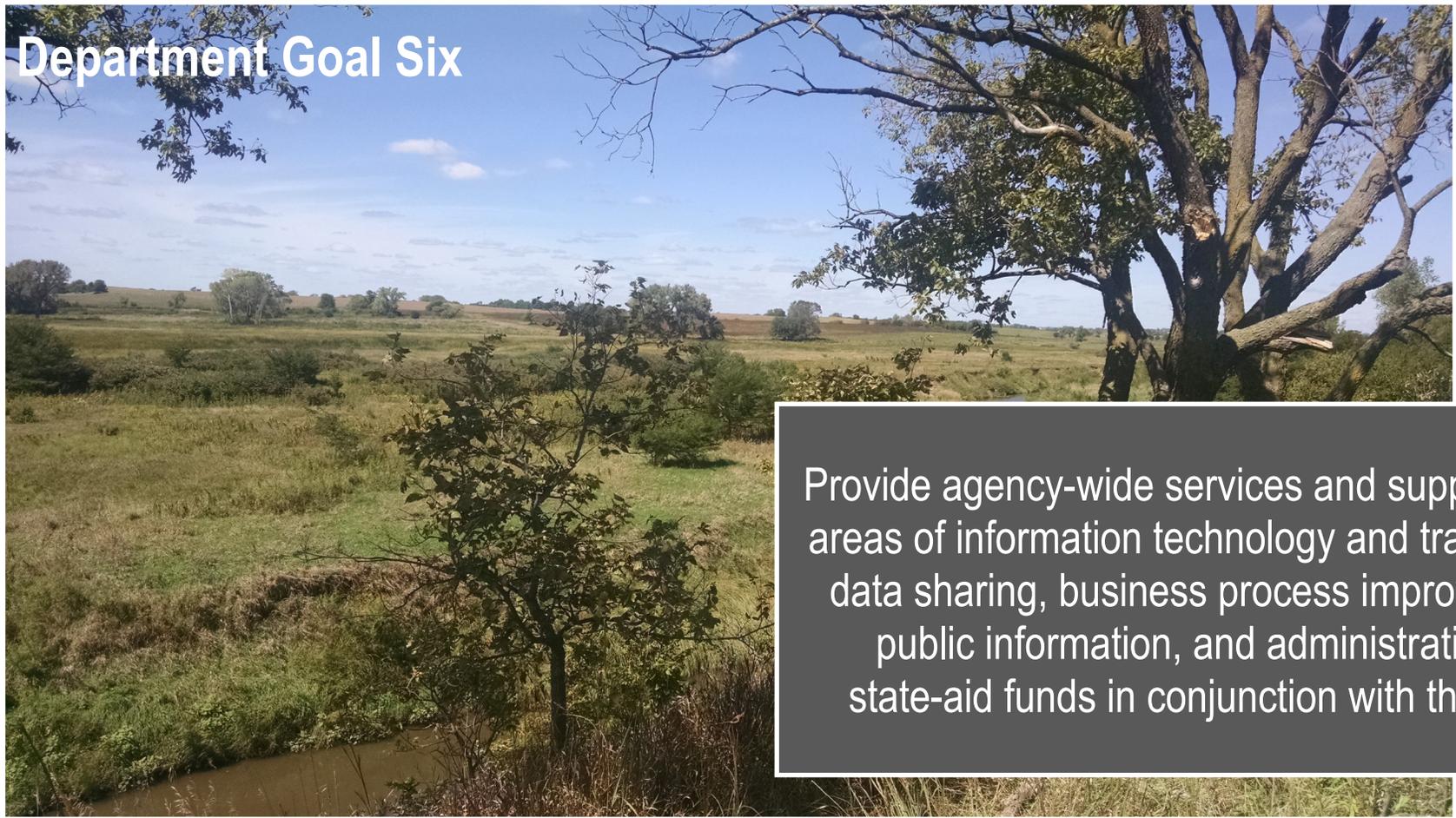
During the irrigation season, NeDNR field staff inspects numerous surface water pumps and diversion sites, and collects water use data throughout the State. The Water Administration Division works with IT to develop and fine-tune mobile applications that are used to access the data that the Department already has as well as collect new data via recently created data entry forms in ESRI Fieldmaps and Survey123.

The recently updated pump observation application runs on a tablet or smart phone and is intuitive and easily used in the field while still providing everything necessary to utilize data once only available through desktop computers and paper maps.

The data collected through the pump observation application helps the Department determine that surface water permit conditions are being met and assists in making efficient use of Nebraska's surface water resources.



Department Goal Six



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 NRC

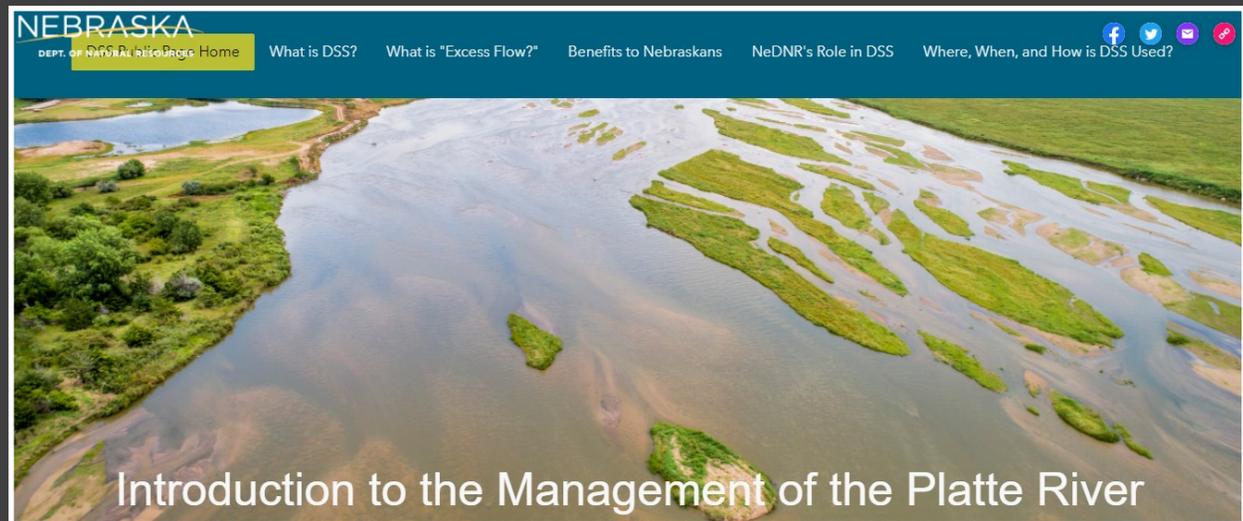
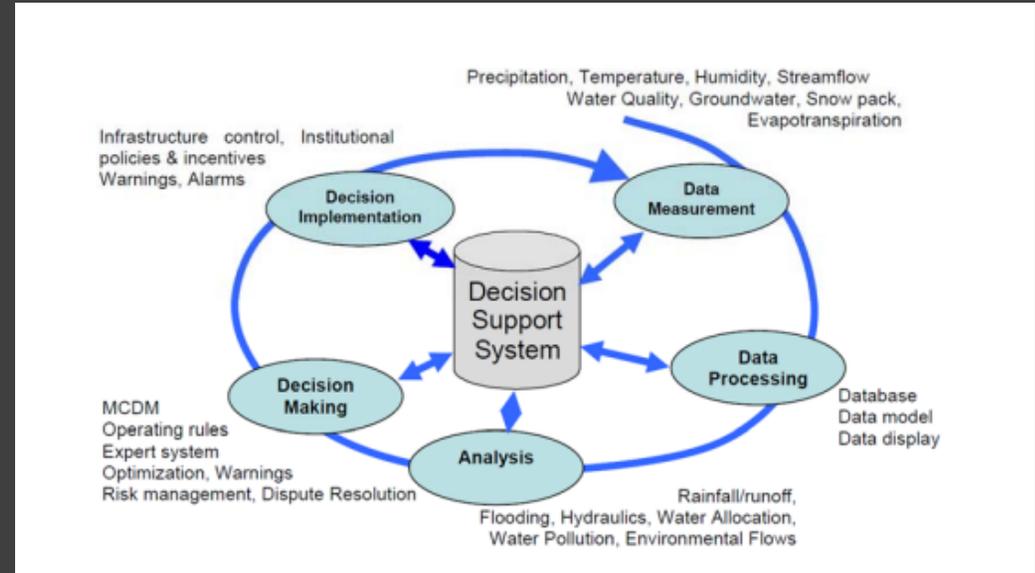
Making Data Accessible

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

The Department's Water Administration and Water Planning sections worked with IT to create a DSS website and dashboard for the public.

This dashboard and website provide management and administrative support for a variety of purposes, focusing on the use of excess flows for basin-wide benefits.

The DSS system also helps meet the needs of water users throughout the State of Nebraska. The dashboard pulls data from Aquarius (NeDNR's streamgaging application), NeDNR's Platte Water Accounting Program (PWAP), etc., and displays the data in a common map to provide a more transparent visualization of water flow.

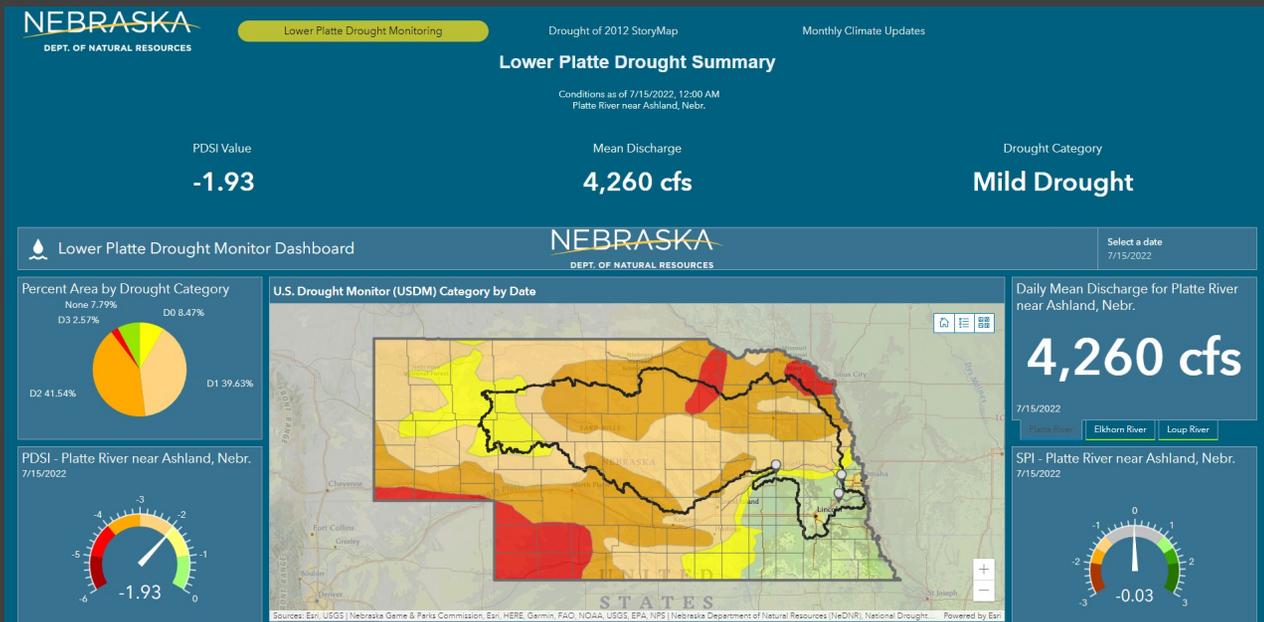


Monitoring Water Availability

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

The Lower Platte River Drought Contingency Plan (Plan), finalized in 2019 ([link here](#)), helps to guide the members of the Lower Platte River Consortium (Consortium) in monitoring and identifying drought indicators that are critical in management of the Lower Platte River and water supplies relied upon by Omaha, Lincoln, and other communities along the river. To aid in observation and availability of drought-indicating index values identified by the Plan, The Nebraska Department of Natural Resources (NeDNR) worked closely with Consortium members to create the Lower Platte Monitoring Dashboard ([link here](#)). This dashboard provides real-time information for informed decision making for Consortium members, as well as tracking drought information through time, and allowing a look back historically to severe drought as an opportunity to take lessons learned forward into the future.

NeDNR has also provided, to the Consortium, a summary of the monthly North Central U.S. Climate and Drought Summary and Outlook webinar via email. This is a monthly collaborative report from authoritative climate experts throughout the U.S. about recent regional climate trends observed and climate predictions for the near future. The information in these webinars had been summarized and provided to Consortium members via email until recently. NeDNR's Water Planning Division, working closely with NeDNR's IT division, has updated the Lower Platte Monitoring Dashboard to provide monthly updates in a publicly available and on-demand format. This information is on a page that is accessible from the dashboard link above. This advancement allows for viewing of webinar information with accuracy and whenever a user needs access. This separate page also features a reservoir storage and capacity dashboard, as well as links to relevant climate data. The Lower Platte Monitoring Dashboard is, as intended, a one stop shop for Lower



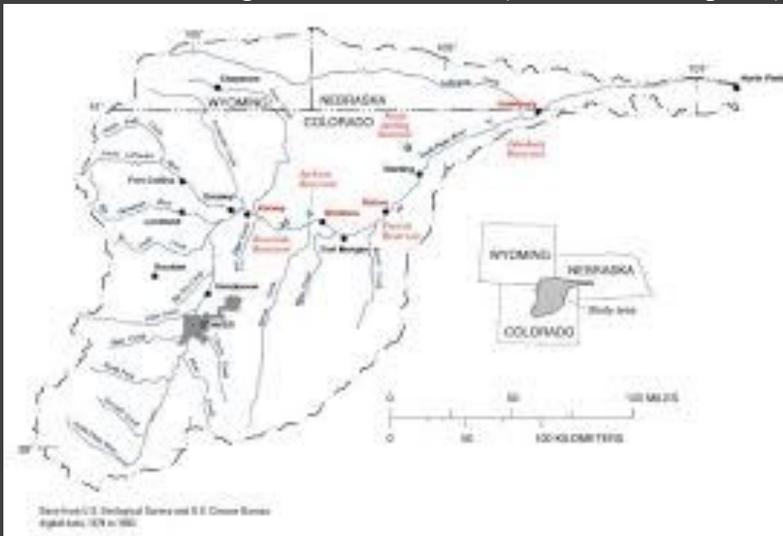


NeDNR Water Initiatives

Protecting Our Water Rights

The Nebraska Department of Natural Resources, working in conjunction with Natural Resources Districts and a variety of water users and water-related interests throughout the Platte River Basin, have been conducting focused water planning efforts throughout the Basin since 2004. These water planning efforts consist of Basin-Wide Plans, Integrated Management Plans (plans developed for an individual NRD), and drought plans, along with work in conjunction with Nebraska's interstate compacts, decrees, and agreements. Particular attention is often given to the interstate components during water planning efforts to ensure that Nebraska fulfills its obligations and that our state's water users receive the full benefits of Nebraska's water entitlements. One area of focus is to ensure Nebraska's full entitlements under the South Platte Compact are realized and protected for the future of all Nebraskans.

To further advance these efforts in the South Platte River Basin, the Legislature passed LB1015 during the 2022 legislative session in conjunction with funding that authorizes the Department of Natural Resources to continue to advance preliminary planning and design for infrastructure necessary to fully protect Nebraska's non-irrigation season flows (October 15 – April 1) authorized under the terms of the South Platte Compact.



Hugh Carey, The Colorado Sun

In adopting LB1015, the Legislature found that it is essential to the economic prosperity, health, and welfare of the people of the State of Nebraska, and to the environmental health of the entire Platte River Basin, to protect Nebraska's full entitlement to the flows of the South Platte River as provided for in the South Platte River Compact. The Legislature authorized the Department to develop, construct, manage, and operate the Perkins County Canal Project (project as named in South Platte Compact) and has provided preliminary funding (\$53.5M) to continue advancing these efforts.

Producer Learning Community

This legislative session, the Legislature passed LB 925, which created the Resilient Soils and Water Quality Act.

The purposes of the Act are 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;
- provide proof of healthy soil benefits through demonstration and research farms.

Under LB 925, the Department of Natural Resources will provide technical and legal assistance in the formation of a producer learning community (PLC).



Getty Images/Stock photo

Improving Recreation Opportunities

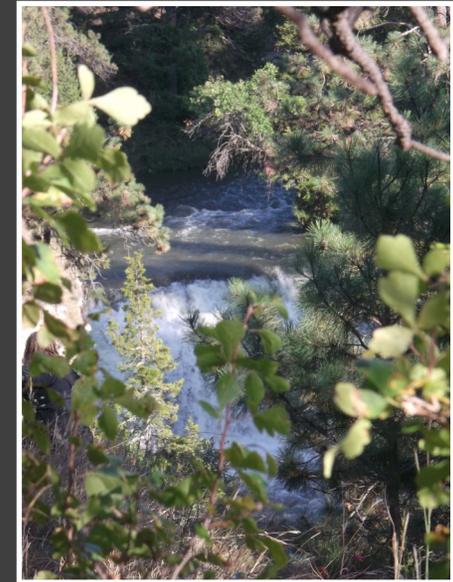
The purpose of LB 1023 is to carry out projects recommended by the State Tourism And Recreational Water Access and Resource Sustainability (STAR WARS) Special Committee of the Legislature. The STAR WARS committee was created by LB 406 (2021) and charged with studying strategies to secure Nebraska's future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

- ◆ Lower Platte River Lake Development: construction of a combined reservoir within the floodplain of near the Platte River that will create a 4,000 acre lake that will provide unprecedented new development and recreation opportunities, as well as enhancing flood control and water quality in the area
- ◆ The Lewis and Clark State Recreation Area: marina construction projects to expand water access and recreational opportunities
- ◆ Lake McConaughy: marina construction projects to expand water access and recreational opportunities
- ◆ Niobrara State Park: construction of an event center and lodge to increase access to and enjoyment of the Niobrara State Park

The bill authorizes the Department of Natural Resources to administer the Lower Platte River Lake Development Project and authorizes the Game and Parks Commission to administer the Lake McConaughy, Lewis and Clark State Recreation Area, and Niobrara State Park projects. The STAR WARS projects are innovative opportunities that will secure Nebraska's future water supply and flood control, create more opportunities for water access and recreation, and catalyze economic activity.



Lake McConaughy, above. Niobrara River, below



Investing in Irrigation Infrastructure Improvements

Surface Water Irrigation Infrastructure Fund

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 how many users and acres of land would be affected by a proposed project along with how critical the project is to the infrastructure.



Funding Water Infrastructure



Gering/Ft. Laramie Tunnel repairs

Fred Knapp, NET News

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 has been appropriated ARPA funds under LB1014 into two programs. Program 314 – Critical Infrastructure Facilities was appropriated \$23,100,000 and Program 319 – Water Projects was appropriated \$20,000,000.

Program 314 will help to complete the rebuilding of the Gering-Fort Laramie tunnel that collapsed in 2019. The tunnel and connected canals provides water for irrigation for Western Nebraska.

Program 319 monies will be used to help the City of Lincoln develop access to more water for its growing population and increased needs.



Financials

Financial Summary Table

Budget & Actual — Admin. Services, Streamgaging, Water Planning, & Litigation
 Program 334 — Subprogram. 06, 07, 19, & 21
 As of 8/10/2022

	<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>Plan</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	\$2,431,167	\$2,552,725	\$2,680,361
Travel Expenses	\$39,178	\$16,503	\$40,966	\$45,000	\$45,000	\$45,000
Operating Expense—SOS Temporary Personnel	\$35,883	\$87,218	\$191,425	\$200,000	\$200,000	\$200,000
Operating Expense—Mgmt Consultant, Contractual Services, and Engineering & Architectural Services	\$861,456	\$1,487,862	\$1,635,610	\$1,900,000	\$1,900,000	\$1,900,000
Equipment, Computer, and Software	\$338,564	\$236,143	\$482,393	\$500,000	\$500,000	\$500,000
Operating Expense—Other	\$216,364	\$122,350	\$415,583	\$400,000	\$400,000	\$400,000
Capital Outlay/Fixed Assets Except Computer	\$89,649	\$33,888	\$66,446	\$85,000	\$85,000	\$85,000
Interstate Water Litigation	\$4,800	\$4,800	\$4,800	\$10,000	\$10,000	\$10,000
TOTAL	\$3,741,297	\$4,424,882	\$5,152,620	\$5,571,167	\$5,692,725	\$5,820,361



NEBRASKA

Good Life. Great Water.

DEPT. OF NATURAL RESOURCES

245 Fallbrook Boulevard, Suite 201
Lincoln, Nebraska 68521

402-471-2363

www.dnr.nebraska.gov