



## NRD RECREATION AREAS IMPROVED

The NRD recently installed upgrades to two recreation areas to increase access to all patrons. New bathroom facilities have been installed at Smith Creek (Utica) and Oxbow Trail (Ulysses) Recreation Areas. These restrooms are ADA accessible and future plans include adding ADA parking stalls and sidewalks. Other planned improvements at these sites include the installation of domestic wells and hydrants, security lights, and outlets at the picnic shelters.

Safety features may be installed in the coming months, including severe weather shelters and sirens. More upgrades and expansions are being explored for these facilities to increase their recreational capacity, amenities, and value in the future. The year 2020 was filled with challenges, but it also was a time of renewed enthusiasm for outdoor activities, as evidenced by the record number of people who visited recreation areas managed by Nebraska's Natural Resources Districts for camping, boating, fishing, hiking and more. Recreation areas remained popular in 2021, though camping at NRD facilities was not quite as high as the previous year.

“If there is one lesson COVID-19 has taught everyone, it’s how important good health is to us,” said NRD board member Ronda Rich. “It was a time we couldn’t go to other indoor activities, but being out in



the fresh air was truly recommended. We are thankful that our NRD had these rec areas for families and our districts residents to use and still do things and enjoy the great outdoors. We, as a board, are excited to see these areas used and it gives us the momentum to improve the areas knowing that they truly are good use of tax payers’ dollars.”

Learn more at [www.upperbigblue.org/recreation](http://www.upperbigblue.org/recreation). ♦♦♦

UPPER BIG BLUE NATURAL RESOURCES DISTRICT  
**BLUEPRINT**

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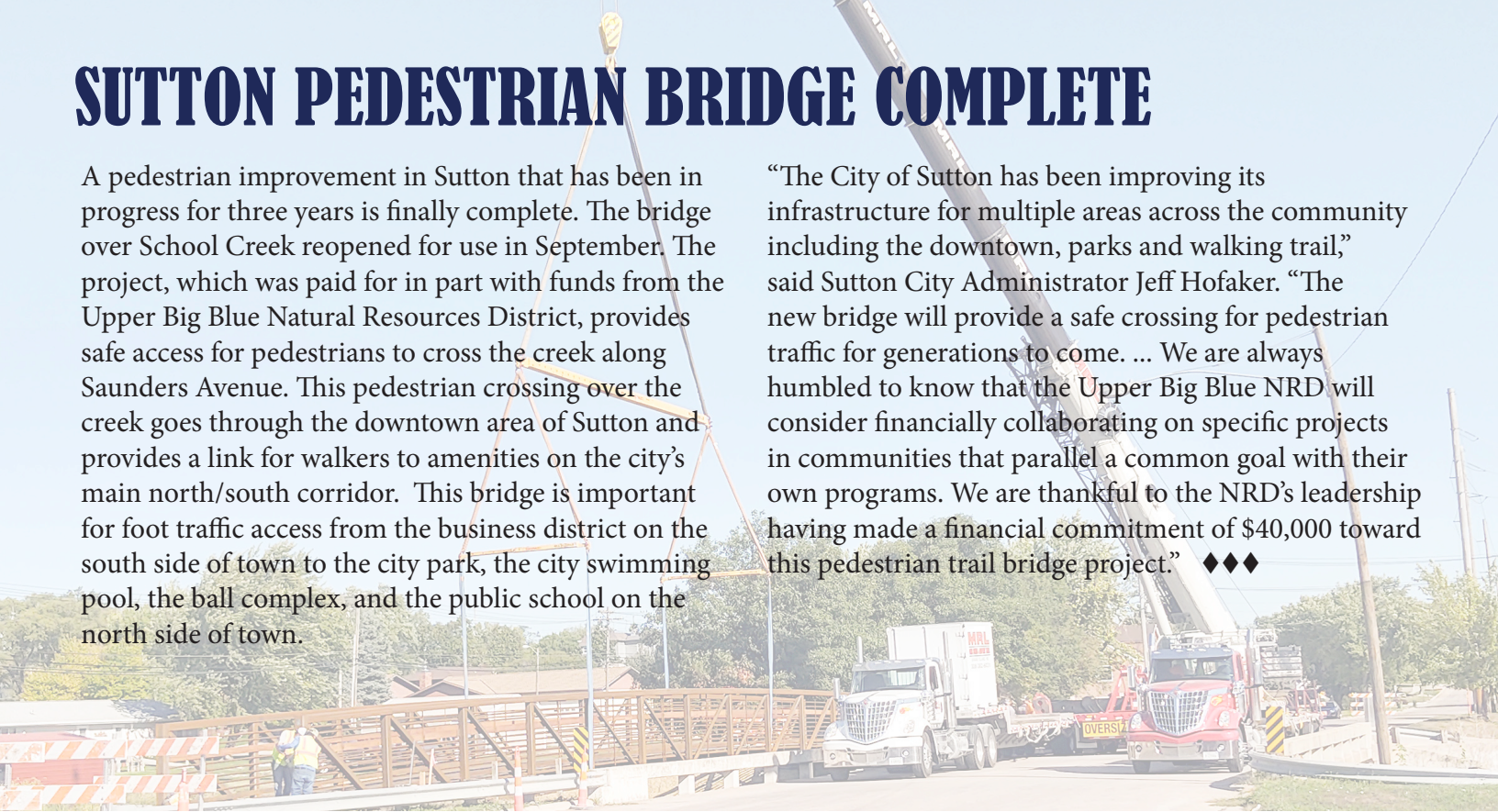
Nancy Brisk, administration department manager, was recognized for 40 Years of NRD service in September.



# SUTTON PEDESTRIAN BRIDGE COMPLETE

A pedestrian improvement in Sutton that has been in progress for three years is finally complete. The bridge over School Creek reopened for use in September. The project, which was paid for in part with funds from the Upper Big Blue Natural Resources District, provides safe access for pedestrians to cross the creek along Saunders Avenue. This pedestrian crossing over the creek goes through the downtown area of Sutton and provides a link for walkers to amenities on the city's main north/south corridor. This bridge is important for foot traffic access from the business district on the south side of town to the city park, the city swimming pool, the ball complex, and the public school on the north side of town.

“The City of Sutton has been improving its infrastructure for multiple areas across the community including the downtown, parks and walking trail,” said Sutton City Administrator Jeff Hofaker. “The new bridge will provide a safe crossing for pedestrian traffic for generations to come. ... We are always humbled to know that the Upper Big Blue NRD will consider financially collaborating on specific projects in communities that parallel a common goal with their own programs. We are thankful to the NRD’s leadership having made a financial commitment of \$40,000 toward this pedestrian trail bridge project.” ♦♦♦



## NATURE'S CLASSROOM

### Learning Activities at Bruce L. Anderson Recreation Area

1. A group of students from York Elementary School Boost Summer Program built a picnic table with donated materials. They gave the handcrafted item to be used at Anderson Recreation Area (York) as a thank you to the NRD for maintaining the park that students frequently use as an outdoor classroom space.
2. York College students Emily Eggar and Blayne Winkler conducted an 8-week water quality study, collecting samples from Recharge Lake throughout the summer.
3. A youth fishing clinic was held in June at Recharge Lake. Kids caught catfish with the help of leaders from Nebraska Game and Parks.





# High Tech Treatment for Invasive Species at Oxbow Trail Recreation Area

An eagle-eyed recreation enthusiast spotted the trouble first: tall, reedy plants with fluffy seed heads were proliferating on the southern edge of property at Upper Big Blue Natural Resources District's Oxbow Trail Recreation Area (near Ulysses). The distinctive looking plants were non-native Phragmites (frag-MY-tees), an aggressive wetland grass that outcompetes native plants and displaces wildlife. This species of reed can rapidly reach up to 18 feet tall and growth is exceptionally dense.

The spread of Phragmites is especially problematic at the NRD managed property, as it threatens two of the main goals of the area: human recreation and wildlife habitat. Phragmites can reduce native fish and wildlife populations by making the area uninhabitable, limiting recreation value for birdwatchers, walkers, fishers, boaters, and hunters. Phragmites creates a dense jungle of vegetation that, unchecked, will block out native vegetation while providing little or no food or shelter for most native wildlife.

The species poses another threat—fire. Phragmites grows very rapidly and each fall plant material dies back, creating large concentrations of tinder-dry vegetation that increase the potential for fast-spreading fires that can threaten surrounding property. This is a major concern for parts of Nebraska that are dealing with the impacts of drought.

Once the problem was identified, NRD staff acted quickly to treat the species at Oxbow. Due to the multiple ways

Phragmites spreads (through seed production, underground rhizomes, and above ground stolons), it can be tricky to kill off completely once it gets established. Mowing or burning is generally unsuccessful in managing this species unless it is a concentrated, multiyear effort.

The best way to control the species according to U.S. Fish and Wildlife is through the careful and targeted application of specific herbicides by licensed applicators.

The NRD contracted with an applicator, who used a drone to spray the phragmites stand with an EPA approved herbicide. The drone was the perfect tool to use for this job, as it was in a hard-to-reach marshy area and it required precision application to ensure that only the phragmites were impacted, not other plants growing nearby.

The NRD staff encourages all district residents to be on the watch for this invasive species and to alert the office if you spot it growing on NRD managed properties. If you see it on your land, call your county's noxious weed office. For more information on this topic, you can view resources from U.S. Fish and Wildlife on our website. ♦♦♦



## PLAYGROUND PROJECT FUNDING APPROVED

The community effort to bring an all-inclusive playground to York has gotten an additional boost from the Upper Big Blue Natural Resources District. The board of directors of the NRD recently approved the expenditure of \$10,000 for this project, which will be used by the City of York toward the construction of a specialized bathroom facility at the proposed park. Like other recent community enhancement projects in Geneva and Beaver Crossing, the City of York was able to apply for funds for the new playground through the NRD's parks program. *More information on this program at [www.upperbigblue.org](http://www.upperbigblue.org).* ♦♦♦





# NEW INCENTIVE PROGRAM ANNOUNCED

## Payments to producers for practices in target areas

The Upper Big Blue Natural Resources District is offering a new incentive program for producers in portions of the Recharge Lake Watershed, the Beaver Creek Watershed, and some municipal Wellhead Protection Areas. Practices included in this program are cover crops, buffer/filter strips, and land treatment practices. Qualifying producers are eligible for an incentive payment to install these practices immediately.

The purpose of the program is to increase incentives for producers who are interested in installing these important conservation practices. Cover crops and buffer strips are simple ways to improve water quality, as they keep sediments and chemicals on the fields instead of washing into waterways.

“Our hope is that this program will allow more producers to plant cover crops and filter strips to improve the quality of the water in our district in key areas where we know we can make a significant impact,” said Marie Krausnick, water department manager at the Upper Big Blue NRD. “We want to make it as simple as possible for producers who have been thinking about installing these practices to go ahead and take action now and get started.”

These two practices were among those identified by a district stakeholders group as those that are likely to be adopted by the district’s agricultural community, if the right incentives and supports were in place. The stakeholder group that made recommendations to the board of directors of the NRD included landowners, operators, agribusiness owners, recreationists, municipal representatives, and livestock producers in the Beaver Creek watershed. They met from January to March of 2021 to discuss water quality issues in the district and hosted an open house event to present

ideas to the public.

As with much of the state of Nebraska, water quality concerns in the area targeted by this program include nitrates, which are known to cause adverse health outcomes for humans. The program will also help with concentrations of atrazine and phosphorus, which harm wildlife that depend on streams, lakes, and rivers in the district. If widely adopted, this new incentive program could improve the quality of drinking water in the district, as well as improve the recreational opportunities at Bruce L. Anderson Recreation Area in York, where the fishery has been dramatically decreased due to poor water quality.

Producers who are interested in applying for the incentive program can call John Bush at the NRD office at (402) 362-6601, or complete a short form on the NRD website. The application process is quick and easy to allow for installation of conservation practices as soon as possible. This program is funded directly by the Upper Big Blue Natural Resources District and is not affiliated with any federal conservation programs. However, the program does include collaboration with local NRCS soil specialists to ensure best results. Full program details at [www.upperbigblue.org/WQMPIncentiveProgram](http://www.upperbigblue.org/WQMPIncentiveProgram). ◆◆◆





# Land Treatment Program 2021 Summary

Land treatment is the construction or installation of conservation practices to prevent or reduce soil erosion, sedimentation, and water contamination, and to assist with management of both surface water and groundwater. Many land treatment practices result in an additional benefit including the creation of habitat for wildlife.

The district administers a land treatment program that receives funding from the Nebraska Department of Natural Resources (NeDNR) through the Nebraska Soil and Water Conservation Program (NSWCP). The district's board also budgets local tax dollars to fund this program. The district also administers the Nebraska Buffer Strip Program which receives funding from the Nebraska Department of Agriculture. ♦♦♦

**Want to add these or other practices to your land? Call us to get started!  
(402) 362-6601**

Projects by # of Practices Installed

Practice Type	NRD	NSWCP	Total #	% of Total
Basin -- Sediment Control	5	6	11	29.73%
Brush Management	0	1	1	2.70%
Outlet	0	0	0	0%
Pasture Planting	0	0	0	0%
Planned Grazing	0	0	0	0%
Terrace System	2	6	8	21.62%
VRI (Variable Rate Irrigation)	1	0	1	2.70%
Waterway -- grassed	0	1	1	2.70%
Windbreak Planting	14	0	14	37.84%
Windbreak Renovation	0	0	0	0%
Subsurface Drip Irrigation (SDI)	1	0	1	2.70%
<b>TOTAL</b>	<b>23</b>	<b>14</b>	<b>37</b>	<b>100%</b>

Projects Cost Share Funding by Practice

Practice Type	NRD	NSWCP	Total #	% of Total
Basin -- Sediment Control	\$30,220	\$33,794	\$64,014	42.5%
Brush Management	0	\$787	\$787	.52%
Outlet	0	0	0	0%
Pasture Planting	0	0	0	0%
Planned Grazing	0	0	0	0%
Terrace System	\$12,352	\$38,150	\$50,502	33.53%
VRI (Variable Rate Irrigation)	\$1,695	0	\$1,695	1.13
Waterway -- grassed	0	\$2,474	\$2,474	1.64%
Windbreak Planting	\$23,642	0	\$23,642	15.7%
Windbreak Renovation	0	0	0	0%
Subsurface Drip Irrigation (SDI)	\$7,500	0	\$7,500	4.98%
<b>TOTAL</b>	<b>\$75,409</b>	<b>\$75,205</b>	<b>\$150,614</b>	<b>100%</b>



# EXPANSIVE RIVER BASIN MODELING NEARS COMPLETION

Imagine this: a severe drought hits Nebraska, causing rivers and streams to slow to a trickle. Lakes are so low that fish are flopping in the mud. Groundwater levels dip as well as the aquifer continues to be drawn down, with little precipitation to refill it. There's one question on everyone's mind as the drought drags on--will there be enough water to meet the needs of domestic users, irrigators, and industry if everyone continues to use water at the same level as before?

While this worst-case scenario sounds like an exercise in pessimism, it is a very real problem faced in the western United States. Given the right circumstances, could it happen here? To safeguard the water supply for all users and prevent future shortages, the Upper Big Blue Natural Resources District has partnered with the Nebraska Department of Natural Resources and three other NRDs in the Blue River Basin in an ambitious project. Since 2017, the group has been working with an engineering firm to conduct a comprehensive survey of the Blue River and tributaries to identify the extent to which they are hydrologically connected—where groundwater and surface water interact. The balance between surface water and groundwater is a vital data point to understanding the water system in the district.

By collecting information about stream flow, groundwater recharge, land use in the basin, drought patterns, and average rainfall and water use, engineers are creating a computer model that allows users to run scenarios to test different variables. For example, what would the impact to groundwater recharge be if land use changed from irrigated farmland to dryland or livestock production? What would the impact be on stream flow if a new industry entered the district and increased demand on water? How long would surface water and groundwater supplies last at typical levels of use if the rainfall decreased by 75 percent in a given period? These variables can be run through the model to determine likely outcomes for geographic and time-based scenarios.

The monitoring and data collection was completed in

2020. Now the model is being refined and calibrated to produce the most accurate results and is expected to start providing useful data in early 2022. Once completed, the model will provide a sophisticated tool for forecasting future possibilities that can assist boards of directors at the Upper Big Blue, Tri-Basin, Lower Blue, and Little Big Blue NRDs as they set policy to ensure reliable water use for all.

“Keeping the agricultural economy of the Blue River Basin strong requires the best science to inform policy for water use,” said Marie Krausnick, water department manager for the Upper Big Blue NRD. The model will also assist Nebraska to keep in compliance with the Blue River Basin Compact, which strives to achieve equitable apportionment of the water in the Big Blue Basin between Nebraska and Kansas.



Modeling in the Upper Big Blue Natural Resources District started in 2005 with an effort to produce a similar tool for the Platte River. At that time, the Nebraska Department of Natural Resources was looking for data about whether the Platte River basin (surface and ground water) was fully appropriated (meaning the balance of water use and water demand indicates that increased planning is needed) or over-appropriated. Part of the district between Phillips and the Platte River was deemed fully appropriated at that time based on the results of the modeling project.

“At that point, the district saw the value in groundwater modeling,” said Krausnick. When that study was complete, the focus shifted from the Platte River hydrologic interconnection to the Blue River. The current model being created relies on updated data and methodologies, reflecting the best available science, providing a more robust model.

Once the areas of hydrologic connection are identified, the information will become part of the district's Voluntary Integrated Management Plan. Having this plan in place would allow the NRD to apply for additional funding through the Water Sustainability Fund to make improvements in the district to reduce the threat to the water supply. ◆◆◆



# DIRECTORS TOUR DISTRICT PROJECTS

How is water quality being protected and what can be done to improve it in our district? These questions were explored during the annual board of directors tour hosted by the Upper Big Blue Natural Resources District in August. The tour featured six sites in Hamilton and York counties where directors met with experts and saw first-hand what NRD staff and partners are doing to safeguard water quality in the district. “It’s really important for

directors to see the projects and programs in our district first-hand so we can make better decisions when these things come up for discussion,” said Lynn Yates, board chairperson, who attended the tour. “If you can see things yourself, it’s easier to understand. I wish all directors would go on these tours because there is so much to see in the district.” Yates appreciated the expert input provided by two fisheries biologists the group met with on the tour to discuss the health of the lakes at Bruce L. Anderson and Pioneer Trails Recreation Areas. “I learned so much from Brad Eifert and Matthew Perrion from Nebraska Game and Parks. It was helpful to learn more about water quality in our reservoirs and what we can do to improve it.” ♦♦♦



*The NRD board of directors cuts a ceremonial ribbon at Teal View Wetland Education Area (Hampton) during their annual district tour in August. Changes are coming soon for Teal View, including infrastructure for grazing cattle, as cattle are an important management tool to keep the vegetation in an early successional state. More info on our website.*

## BLUEPRINT



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- Rodney Verhooff.....Assistant General Manager
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- Marie Krausnick ..... Water Dept. Manager
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- Drew ten Bensel ..... Water Resources Technician
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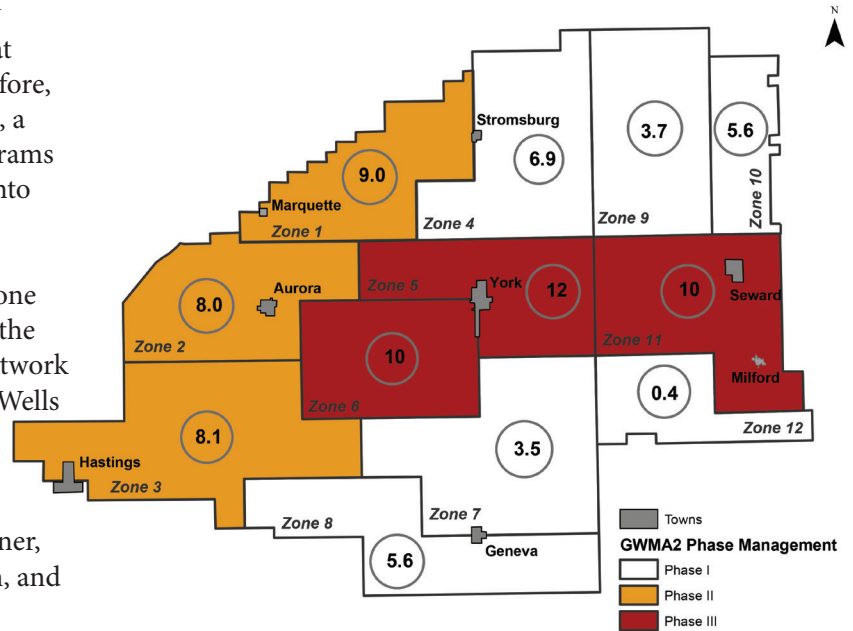
# NITROGEN LEVELS IN DISTRICT GROUNDWATER LEAD TO INCREASED MANAGEMENT

After lively debate, two zones of the Upper Big Blue Natural Resources District are moving from Phase II management to Phase III management as of January 1, 2022. This change is due to elevated median levels of nitrate in the groundwater in these areas. The Upper Big Blue NRD is divided into 12 groundwater quality Management Zones. The median nitrate value for that zone determines the phase of management and therefore, rules and regulations. According to the NRD's Rule 5, a zone will move into Phase II management at 7 milligrams of nitrogen per liter (mg/L) in median samples and into Phase III at 10 milligrams per liter.

The 2021 median nitrate level for both Zone 6 and Zone 11 is 10 mg/L. The median nitrate value for a zone is the product of water samples collected from a specific network of wells selected based on construction and geology. Wells sampled include domestic, irrigation, and public municipal uses.

Communities impacted by this change include Goehner, Milford, Seward, Tamora, Utica, Henderson, Lushton, and

a portion of McCool Junction. Zone 5, which includes the York, Bradshaw, and Waco areas, is already under Phase III management due to elevated nitrates. For full details, visit [www.upperbigblue.org](http://www.upperbigblue.org). ♦♦♦



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