Planning Documents

- Master Plan 2024-2034
- Long Range Implementation Plan 2024-2029

Upper Big Blue

NATURAL RESOURCES DISTRICT

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Master Plan (2024-2034)

ABOUT US

Partnership with the communities, families, and individuals in our region motivates the Upper Big Blue Natural Resources District to improve quality of life through effective stewardship of water and soil.

With expert knowledge, intimate understanding of the needs of the region, and commitment to fair, local governance, the Upper Big Blue Natural Resources District serves people and communities through a range of conservation activities. From improving practices for ag producers through education and research on best management practices, to improving life for all residents by assuring access to quality drinking water and recreation areas, the Upper Big Blue Natural Resources District provides a vital service in Adams, Butler, Clay, Fillmore, Hamilton, Polk, Saline, Seward, and York counties.

The Upper Big Blue Natural Resources District is a political sub-division of the State of Nebraska. The district was created on July 1, 1972, along with 23 other NRDs across the state. The districts cover the entire state, including all urban and rural areas. The districts are governed by elected Boards of Directors that set individual district policies, approve programs and projects, set budgets, and approve expenditures. Each district has a general manager who reports directly to the board. The general manager of each district manages a staff that conducts the day to day activities to carry out policies, programs, and projects.

OUR MISSION

The Upper Big Blue Natural Resources District shall be a leader in conserving, protecting, developing, and managing the natural resources of this District for the health and welfare of the people of the District.

Road Map for the Future

As a leader in local natural resources management, the Upper Big Blue NRD knows that the focus cannot just be on today, but we must also look well into the future to ensure sustainability and conservation of our natural resources for generations to come. This is a challenging job considering the many competing uses and complex situations, but one the Board of Directors and NRD staff are fully committed to taking on. However, we know this cannot be accomplished alone and we recognize that proper planning and partnership-building are essential. To reach our goals, meet our statutory obligations, and best serve the residents and producers of the district, we use a variety of strategies:

- Vision-casting for the next 10 years using this Master Plan to guide efforts
- Collaboration and partnerships
- A focus on water quality and quantity challenges and needs for agricultural producers, flood management in times of weather extremes, and ensuring adequate potable drinking water
- Efforts to address soil health and conservation in support of sustainable agricultural production that is vital to our economy
- Protection and management of important habitat and forestry resources, and providing recreational opportunities to help meet and balance a wide range of needs, interests, and uses
- Outreach and engagement with communities and producers to encourage participation, foster greater understanding, and provide necessary information and data to make informed decisions

RESPONSIBILITIES

The Upper Big Blue Natural Resources District is a multi-purpose, local unit of Nebraska government for management, development and protection of the soil and water resources. The basic responsibilities of the district, which are authorized by statute, are listed below:

- Development, management, use, and conservation of groundwater and surface water
- Soil conservation
- Erosion prevention and control
- Flood prevention and control
- Pollution control
- Water supply for any beneficial uses
- Prevention of damages from flood water and sediment
- Development and management of recreational and park facilities
- Forestry and range management
- Development and management of fish and wildlife habitat
- Drainage Improvement
- Solid waste disposal

METHODS

The methods we will employ to meet these responsibilities are...

1. Leadership
2. Information and education
3. Technical advice and assistance
4. Cost-sharing
5. Construction and operation by the District
6. Monitoring, data collection, and research
7. Guidelines, recommendations, and regulations
8. Formulating and maintaining public and private partnerships

PURPOSE

The master plan for the Upper Big Blue Natural Resources District presents the goals and objectives relating to the 12 purposes of districts as stated in the revised statutes of Nebraska, Section 2-3229, (1) erosion prevention and control, (2) prevention of damages from flood water and sediment, (3) flood prevention and control, (4) soil conservation, (5) water supply for any beneficial uses, (6) development, management, utilization, and conservation of ground water and surface water, (7) pollution control, (8) solid waste disposal and sanitary drainage, (9) drainage improvement and channel rectification, (10) development and management of fish and wildlife habitat, (11) development and management of recreational and park facilities, and (12) forestry and range management.

In accordance with Section 2-3276, the master plan is to be updated at least every 10 years, or more frequently if major changes in planning and development of objectives occur before the end of the period.

The master plan helps the district to expand our mission, vision, and statutory requirements into goals, objectives, and actionable items in conjunction with the Long Range Implementation Plan. This master plan was adopted by the Board of Directors on September 21, 2023.

The priorities and goals are the framework for all Upper Big Blue Natural Resources District activities, programs, practices, and regulations. The board is guided by these priorities and goals in establishing policies and budgets. The staff does that same in carrying out day-to-day activities.

No attempt is made in the master plan to present current plans or budgets, or to present background information on resources and needs. Such information about the natural resources of the district is available from many other NRD publications. Comprehensive data and information is also on file at the district office and online at www.upperbigblue.org. Individual project plans and studies are on file for planned as well as completed projects. Historical data concerning past programs, projects, staffing, and funding are also in the district files. The details of district programs, activities, and administrative policies are published in the following documents, which are periodically updated:

- Long Range Implementation Plan
- Annual budget
- Programs and cost-share practices
- Rules and regulations
- Master Plan
- Annual report
- Audits
- Operating policies
- Personnel policies

GOAL: WATER RESOURCES

The primary goal of the Upper Big Blue Natural Resources District is successful, long-term water management, for both quantity and quality.

The district strives to provide adequate supply of acceptable quality groundwater to fulfill the reasonable groundwater demands within the district for domestic, agricultural, manufacturing or industrial, and other uses deemed beneficial by the Board of Directors.

Groundwater Quantity

The control area (now known as the Groundwater Management Area #1) was declared on December 9, 1977, with these goals:

- Encourage, promote, and regulate the efficient management and conservation of groundwater and to significantly reduce the rate of decline in the groundwater table.
- Hold the district groundwater level above the 1978 level through various programs and regulations.
- Provide an adequate water supply for existing users, as well as domestic users in the small region outside of the Groundwater Management Area #1.

Groundwater Quality

The special protection area (now known as the Groundwater Management Area #2) was declared on September 23, 1993, with these long-range goals:

- Reduce the potential for non-point source contamination of groundwater through education, research, management practices and incentives that would not adversely affect the economy of the area.
- Develop and implement an appropriate system of monitoring and evaluation of non-point source groundwater contamination including indicators such as nitrates in groundwater and the unsaturated zone, use of best management practices and other factors that are indicators of the rate of non-point source groundwater contamination.
- Encourage the use of best management practices to reduce deep percolation and to support research and adoption of equipment and techniques that have potential for reducing ground-water nitrates.

Groundwater Objectives

- Provide information and education and consider cost-sharing to encourage groundwater users to:
  - » Attain the most economical use of groundwater
  - » Use crop rotation
  - » Control runoff
  - » Construct water storage and land treatment where needed
  - » Use irrigation scheduling
  - » Use surface water where available
  - » Check and maintain pumping plant efficiency
  - » Keep records
  - » Install and maintain flow meters (irrigation and urban)
  - » Alternative irrigation systems (pivot conversions or sub-surface drip systems)
  - » Sample soil for nitrogen carryover
  - » Set realistic yield goals
  - » Complete full nutrient analysis (soil and water)
  - » Use nitrogen flow regulators
  - » Split nitrogen applications
  - » Use fertigation/chemigation
  - » Proper lawn and garden watering and fertilization
  - » Proper decommissioning of abandoned wells

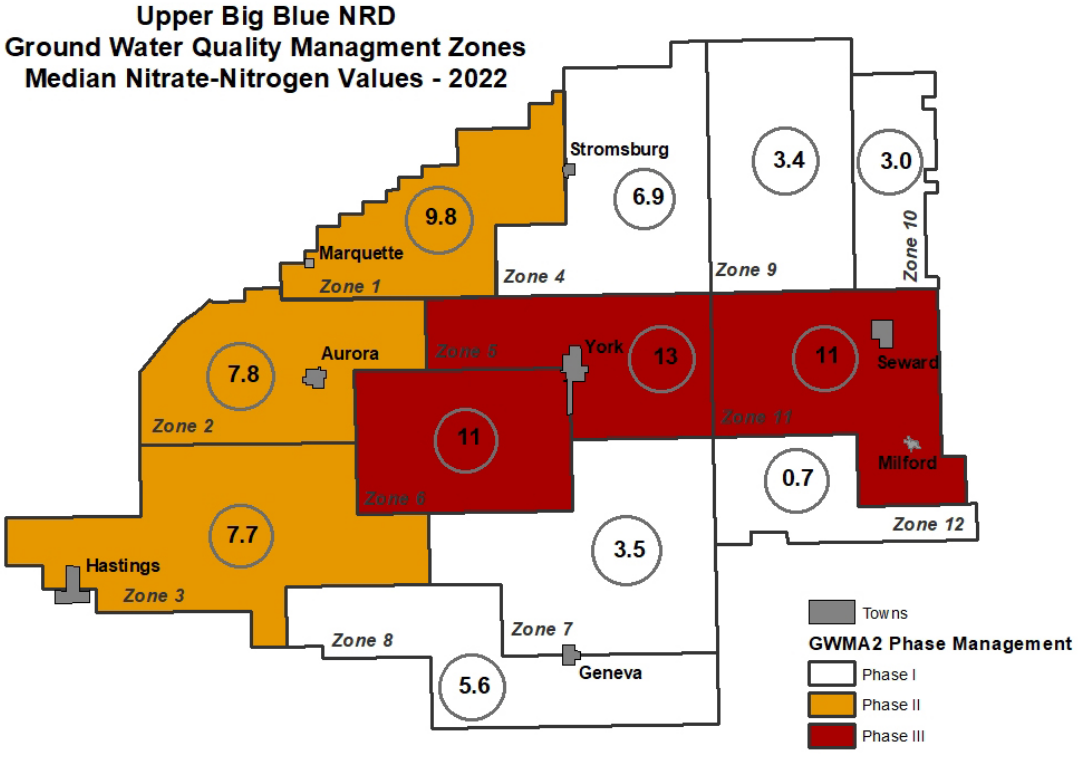
- Monitor the groundwater conditions by:
  - » Measuring spring groundwater levels district-wide in the established network of existing wells.
  - » Measuring seasonal changes in groundwater levels using dedicated, continuous recorder wells.
  - » Monitoring groundwater quality annually, district-wide in the established network of existing wells.
  - » Monitoring seasonal changes in groundwater quality using dedicated water quality monitoring wells.
  - » Work cooperatively with other agencies to collect and evaluate groundwater data.

continued...

GOAL: WATER RESOURCES

Groundwater Objectives (continued)

- Regulate the use and protection of groundwater through the implementation of:
  - » Groundwater Management Area quantity regulations to reduce conflicts between users and to manage the decline of groundwater
  - » Groundwater Management Area quality regulations to stabilize and reduce nitrate contamination of groundwater
  - » Chemigation regulations to reduce the risk of contamination of groundwater through irrigation systems
  - » Irrigation runoff regulations to conserve groundwater and to reduce conflicts between neighbors
- Provide necessary budget, staff and other assistance to carry out an effective management and regulatory program
- Conduct studies and research to better understand and manage groundwater in the district
- Advocate groundwater management by natural resource districts at the local level
- Assist in the planning and development of domestic water supplies where requested by local units of government or citizen groups
- Encourage other agencies to conserve groundwater when implementing their programs, such as groundwater remediation plans
- Cooperate with municipalities on wellhead protection areas.
- Promote and publicize the conservation and wise use of groundwater, through an extensive and comprehensive public relations effort.



The Upper Big Blue Natural Resources District's goal is to store, conserve, and protect surface water for beneficial uses as determined by the Board of Directors, such as domestic, agricultural, and manufacturing.

Surface Water Objectives

Objectives in this area include:

- Development of multipurpose surface water projects consistent with local desires for water conservation, water use, flood control, groundwater recharge, recreation, and fish and wildlife habitat.
- Construct and/or cost-share on dams designed to maximize conservation water storage
- Encourage soil conservation practices as a method of improving water quality in streams and lakes.
- Determine surface water project priorities consistent with the greatest long-term benefits.
- Obtain funding for surface water projects from private, other local, state, and federal sources to supplement the district tax requirement for such projects.
- Develop management agreements for surface water projects with affected units of local government and encourage such governments to assume the management, operation, and maintenance responsibilities connected with these projects.
- Promote, publicize, and offer technical advice and assistance for surface water conservation.

GOAL: SOIL CONSERVATION

The NRD's goal is to maximize soil and water conservation efforts in order to preserve the resources for future use while maintaining production today.

Objectives

- Prevent erosion through a voluntary land treatment program and by encouraging minimum or reduced tillage.
- Implement erosion or sediment control regulations where necessary to reduce conflicts between neighbors.
- Discourage channel straightening and dredging, unless steps are taken to prevent detrimental effects.
- Minimize and control erosion of soil through improved conservation practices, conversion of steep slopes with erosive soils to non-cultivated uses, protection of stream banks, and improved land management.
- Maintain soil nutrient levels for productive land use and reduction of water pollution through improved soil management practices.
- Cooperate with local units of government in implementing necessary erosion control practices, as needed, on all residential or commercial development, industrial development, road construction, and other non-agricultural sites.
- Promote, publicize, and offer technical advice and assistance to promote soil conservation through cover crops, buffer strips, water and sediment control basins, and other practices.
- Budget funds and provide financial assistance for the soil and water conservation efforts implemented by landowners.
- Obtain funding for soil conservation from private, other local, state, and federal sources to supplement district funds.

GOAL: FLOOD CONTROL

The goal of the NRD is to reduce flooding and flood damages to acceptable levels, while making the best use of flood plain land. Flood plain management is of prime importance, as in many cases, it is the most practical way to reduce flood damages.

Objectives

- Encourage flood plain management as a necessary step in creating the proper balance between structural and non-structural methods of flood protection.
- Create a greater awareness of flood plain problems and potential solutions through local planning, education and information programs.
- Sponsor, construct, operate, and maintain flood control projects, where feasible, to protect property from flood damages. Design and plan for multi-purpose uses of flood control projects where ever possible. Acquire grants and other funding to supplement district funding.
- Promote public linear parks, greenbelts, and open space in flood plains as an alternative to allowing real estate development and building construction if lands have the potential of changing from agricultural to developed areas
- Consider, on a case by case basis:
  - ◊ Sharing the consulting services and costs with other local governments in connection with the planning of linear parks, greenbelts, and open space in flood plains.
  - ◊ Acquiring grants for and sharing the land rights costs of flood plain buyouts with other local governments.
  - ◊ Assisting communities with flood control projects by offering technical and administrative assistance, offering cost-share, and acquiring grants or other funds. Encourage multi-purpose uses of flood control projects.
- Encourage local cities and villages to assume sponsorship of all municipal storm water management projects.
- Encourage local communities to identify flood management projects in their sections of the Hazard Mitigation Plan and to apply for cost share funding for these projects.
- Discourage any creek or river straightening or shortening project within the district's boundaries. Limit channel projects to those necessary for flood control. Discourage drainage improvements designed to develop additional real estate or cropland, because of potential conflicts between property owners.

GOAL: POLLUTION CONTROL

The goal of the district is to minimize the misuse and pollution of our natural resources, to protect and enhance the quality of the land, surface water, and groundwater within the district's boundaries.

Objectives

- Protect ground and surface water from point and non-point sources of pollutants.
- Inform and educate the public to make the citizens aware of potential and existing pollution and the need for prevention.
- Encourage other agencies to take water conservation and beneficial uses into account in cleanup efforts.
- Promote regional efforts toward managing solid waste, both urban and rural. Encourage the sound planning and development of solid waste disposal sites in order to adequately protect land and water quality. Encourage recycling of solid waste.

GOAL: PARKS & RECREATION

The district goal is to improve and increase the outdoor recreation opportunities in the region, especially in conjunction with multi-purpose water projects.

Objectives

- Plan recreation use on district owned projects. The level of recreation provided depends on the scope, size and cost of the project.
- Manage, improve, and/or expand existing district park and recreation facilities. Develop new park sites on major multi-purpose projects where the land is held in title by the district. Developed public use sites may include roads and trails, improved parking areas, picnic areas and shelters, drinking water, boat ramps, playgrounds, camping sites, trash service, and restroom facilities.
- Establish and manage primitive public use areas on undeveloped district projects and properties throughout the district. Primitive public use areas are to provide access for walking, and may include fishing or hunting where practical. Off-road unimproved parking is to be furnished for traffic safety. Roads, improved trails, picnic areas and shelters, drinking water, boat ramps, playgrounds, improved camping sites, trash service, and restroom facilities are not provided, maintained, or encouraged.
- Consider providing cities and villages, on a case by case basis, with planning and financial assistance for multi-use parks and recreation improvement and development that stresses natural resources such as tree plantings, wildlife habitat, and open spaces. Public use areas that have aspects of soil and water conservation are to have a priority. Ball fields, tennis courts, swimming pools and similar facilities need to be planned and funded by others.
- In flood plains, promote public linear parks, greenbelts, and open space for public access, by offering planning and financial assistance to counties, cities, and villages.
- Cooperate with counties and state and federal agencies, in public use area development and management where their activities are consistent with those of the district.
- Provide information and education to promote parks and recreation uses of public lands.

GOAL: FORESTRY & RANGE MANAGEMENT

The NRD's goal is to maintain and improve the quality of woodlands and grasslands in this region for soil and water conservation, as well as livestock production, timber, and wildlife.

Objectives

- Provide technical advice on forestry and grassland management. Encourage tree planting for windbreaks and other conservation purposes, and native grass plantings for soil erosion prevention. Encourage proper range and pasture management to provide for better mixes and stands of grass, while increasing productivity.
- Provide a tree planting program to assist landowners in planning for tree plantings, offer seedling trees for sale, and to provide a planting service for windbreak, Christmas tree, or wildlife plantings.
- Consider providing cities and villages on a case by case basis, with planning and financial assistance for community tree, shrub, and native grass plantings.
- Discourage the conversion of existing tree plantings, woodlands, and grasslands to cropland or other uses.
- Promote proper tree trimming and pruning, and vegetation control undertaken by communities and power districts.
- Encourage outdoor classrooms and environmental education in order to show the importance of trees and grasses in conservation.

GOAL: FISH & WILDLIFE

The NRD's goal is to conserve and improve the fish and wildlife habitat found in the district.

Objectives

- Provide technical assistance for private landowners to develop and maintain new fish and wildlife habitat.
- Develop fish and wildlife habitat, where practical, on district projects.
- Obtain funding for habitat programs from private, other local, state, and federal sources.
- Discourage practices by public entities and individuals that result in the unnecessary destruction of permanent vegetation and trees.
- Encourage private landowners to preserve existing wetlands and/or restore original wetlands through Agriculture Land Easements (ALE), Wetland Reserve Easement (WRE) or other programs.
- Discourage dredge and fill activities, and conversion to croplands, unless there are reasonable wetland mitigation sites available.
- Encourage state and federal agencies and private landowners to work together to solve wetland habitat needs and irrigation runoff control, as well as working together to solve lowland flooding problems.
- Promote fish and wildlife habitat on private and public lands.

UPPER BIG BLUE
Natural Resources District

Protecting Lives • Protecting Property • Protecting the Future

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This Master Plan Document was Adopted by the Board of Directors, Upper Big Blue Natural Resources District, on September 21, 2023 in accordance with Nebraska Law (Section 2-3276).

Our Mission

The Upper Big Blue Natural Resources District shall be a leader in conserving, protecting, developing, and managing the natural resources of this District for the health and welfare of the people of the District. The core of the Upper Big Blue Natural Resources District focuses on these things:

- Water
- Soil
- Urban Conservation
- Flood Control
- Trees and Wildlife Habitat
- Recreation
- Grazing Lands
- Education

Long Range
IMPLEMENTATION PLAN 2024-2029

Upper Big Blue
NATURAL RESOURCES DISTRICT

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HISTORY & PURPOSE

More than 56,000 citizens rely on the Upper Big Blue Natural Resources District (NRD) to provide direction and assistance in the wise use, conservation and development of soil, water and related natural resources. The Upper Big Blue NRD is dedicated to the conservation and careful development of natural resources to serve everyone's needs.

In 1972, over 150 special purpose districts were consolidated into Nebraska's NRDs. There are 23 NRDs, formed to correspond with the state's major river basins. The NRDs carry the names of these rivers, hence the Upper Big Blue NRD, Lower Platte South NRD, and so on.

NRDs are organized as political subdivisions of the state. Local control is provided by a board of directors, elected by voters within the district. Across the state, NRDs are a major source of assistance to landowners in conservation and natural resources management. The NRDs also, by law, regulate the use of groundwater in the state.

At the Upper Big Blue NRD, a 17 member board of directors establishes policy. These elected directors represent the citizens' interests in conservation. Not only do directors make decisions about conservation programs at the district level, they also bring a wealth of local judgment and experience to bear when adapting state and national programs to local situations.

The directors (two from each of eight sub-districts and one at-large) are nominated and elected from the individual sub-districts except any at-large candidates, who are nominated and elected by all the voters of the district.

The NRD staff, under the direction of the general manager, is responsible for the implementation of NRD polices and regulations, and serves as the focal point for planning and operations for the district.

The NRD works closely with state and federal agencies to coordinate conservation efforts. A key agency is the Natural Resources Conservation Service (NRCS), which provides planning, technical aid, and inspections for private landowners. NRCS field offices are located in Aurora, Clay Center, David City, Geneva, Hastings, Osceola, Seward, Wilber, and York.

A major source of funding for projects, programs and administration comes from a tax levy on all taxable property within the district. Other sources include federal, state, and private grants. The NRD has the authority to coordinate land and water management projects and programs with local, state, and federal conservation organizations and other governmental units. These projects may be funded through the sharing of project costs by the sponsoring agencies.

PROGRAMS & ACTIVITIES

This plan document follows the goals and objectives of the Master Plan, and summarizes the planned district activities for the next five years, including projections of financial, staffing and land rights needs of the district. The NRD offers several major natural resources programs, as well as administers rules and regulations for groundwater use and protection in these areas:

- Water Conservation Dams
- Flood Control
  - » Dams
  - » Levees
  - » Flood Plain Buyouts
  - » Buffer Strips
- Storm Water Drainage (Urban)
  - » Master Drainage Plans
  - » Storm Water Drainage Systems
- Hazard Mitigation Planning
- Land Treatment Cost-Share
  - » Terraces
  - » Dams
  - » Diversions
  - » Windbreaks
  - » Irrigation Efficiency Improvements
  - » Buffer Strips
  - » Community Native Grass Resources
- Public Relations
  - » Publications, Social Media, E-mails
  - » Public Speaking
  - » Public Events
  - » Scholarships
  - » Educational Capital Projects Fund
- Parks and Recreation
  - » Parks Cost-Share
  - » NRD Recreation Areas
- Groundwater Quantity
  - » Observation Wells
  - » Crop Water Use Information
  - » Irrigation Scheduling Equipment
  - » Flow Meter Cost Share
  - » Demonstration Fields (Project GROW)
  - » Project GROW Field Day
- Groundwater Quality
  - » Monitoring Wells
  - » Well Abandonment Cost-Share
  - » Municipal Water Quality Assistance
  - » Domestic Well Quality Testing
  - » Chemigation Cost-Share
- Wildlife Habitat
  - » Habitat Improvement
  - » Corners for Wildlife
  - » WILD Nebraska Program
  - » Wetlands Grazing Portable Corral
  - » Divots in the Pivots (wetland conservation cost-share)
- Tree Plantings
  - » Seedling Sales
  - » Conservation Plantings
  - » Storm Damage Tree Replacement
  - » Community Tree Cost-Share
- On-Farm Research

BOARD OF DIRECTORS

The Upper Big Blue Natural Resources District is governed by a 17-member Board of Directors. Two directors are elected from each of the eight sub-districts, plus one at-large member from any sub-district. The board sets policy for the district and works closely with the staff through a committee system to carry out the district's goals. Board meetings are conducted on the third Thursday of each month at the district office. Committees meet throughout the month. Special meetings are called as needed to consider important concerns and issues. The district board of directors sets the direction, policies and budget for the natural resources district.

Board of Directors

- Roger W. Houdersheldt, Shelby, Sub-district 1
- Kevin Peterson, Osceola, Sub-district 1
- Jeff Bohaty, Seward, Sub-district 2
- Douglas L. Dickinson, Seward, Sub-district 2
- Richard Bohaty, Seward, Sub-district 3
- Bill Stahly, Milford, Sub-district 3
- Paul Weiss, McCool Junction, Sub-district 4
- Lynn Yates, Geneva, Sub-district 4
- Micheal D. Nuss, Sutton, Sub-district 5
- Kendall Siebert, Henderson, Sub-district 5
- John Miller, Aurora, Sub-district 6
- Bill Kuehner, Jr., Aurora, Sub-district 6
- Rodney Grotz, York, Sub-district 7
- Anthony Bohaty, York, Sub-district 7
- Matthew Perry, York, Sub-district 8
- Paul Bethune, York, Sub-district 8
- Teresa Otte, David City, At-Large Member

DISTRICT STAFF

As of June 2023, the district has 30 employee positions: 28 full-time and two occasional workers. Full-time and part-time employees are permanent employees with paid benefits. Full-time employees work 40-hour work weeks all year, whereas part-time employees work a regular schedule of at least 20 hours per week. Occasional workers are temporary employees who do not earn benefits. Their hours vary depending on available work.

The management staff are also instrumental in budget and policy development which are ultimately approved by the board. The management staff are the project managers who conducted oversee planning, design, contracts and construction of district projects. Consultants are sometimes hired for specific tasks, such as geotechnical investigations or research. Occasionally consultants are hired for project design, but only under close supervision by management.

WATER REGULATIONS

The long-term management and regulation of groundwater quantity and quality is a high priority in this District. That commitment requires a staff of nine and a large part of the annual budget (about one-third of the total NRD staff and budget).

- Groundwater quantity (most of the NRD)
  - » Well permits
  - » Large water user studies
  - » Well spacing
  - » Transfers
  - » Irrigated acres certification
  - » Groundwater use reports
  - » Flow meters
  - » Irrigation runoff
- Groundwater quality (all of the NRD)
  - » Fertilizer timing restrictions
  - » Operator training
  - » Soil sampling
  - » Irrigation scheduling
  - » Irrigation water test for nitrates
  - » Annual reporting
- Basin Modeling Projects
- Chemigation
- Erosion and Sediment Control

For additional information on the specifics of the programs and regulations of the NRD, please view the regularly updated Programs and Rules & Regulations publications.

SOIL & WATER RESOURCES: PLANNING & MANAGEMENT

Vadose Zone Study

The Upper Big Blue NRD will partner with the University of Lincoln to measure indicators in the vadose zone across the district. The focus of the study will be to look at groundwater nitrate and other agrochemical contaminant occurrence in the vadose zone. To do this, researchers will examine both historic and spatial changes in groundwater nitrate throughout the district's 12 water quality management zones to compare the changes in nitrate levels. Nitrate levels will be determined by drilling test holes for chemical analysis, along with characterizing the soil type and physical characteristics.

Goals & Benefits
For the past few decades, NRD staff have documented a steady increase in nitrogen concentration in some parts of the district. While some areas of the district have seen decreases in nitrate levels, the district overall has had an increase of 54 percent. This study will further document with greater accuracy the current levels of nitrate contamination in the unsaturated zone to give us a picture of groundwater quality concerns in the future.

Timeline
2021-2026

Cost
$375,000

Areas of Responsibility
- Pollution control
- Development, management, use, and conservation of ground water and surface water

Groundwater Annual Monitoring

The NRD is responsible for monitoring water quality and quantity, as well as collecting data about water use across the district each year to ensure availability for all beneficial purposes.

Goals/Benefits

Measuring spring groundwater levels district-wide in the established network of existing wells; measuring seasonal changes in groundwater levels using dedicated continuous recorder wells; monitoring groundwater quality annually, district-wide, in the established network of wells; monitoring seasonal changes in groundwater quality using dedicated water quality monitoring wells. Outlined in the district's Rules and Regulations, producers are required to report their annual groundwater use. Producers are also required to report nitrogen management practices in Phase II/III Management Areas for groundwater quality. The benefit of all of this measurement and monitoring is to ensure quantity and quality into the future.

In 2022, improvements to the monitoring well network were discussed. The United States Geological Survey (USGS) presented a project proposal to review the current Groundwater Management Area #2 (GWMA#2) well network to ensure the wells being sampled fit the original criteria of the 1995 study that established the network. This study could be the first phase of a larger study to look at the monitoring network and the parameters and contaminant data collected. This study is expected to cost $86,680.

Online reporting: A major goal was accomplished in 2019 as online reporting for water use and for Phase II/III management area producers was introduced. While paper reporting is still allowed, many producers experimented with the online reporting and found it quick and easy. The new tool received praise from many producers and streamlined the data management for NRD staff as well. This tool will continue to be used in the next five years, with the expectation that it will increasingly replace traditional reporting. Improvements continue to be made to ensure ease of use and maximum functionality.

Areas of Responsibility

- Development, management, use, and conservation of ground water and surface water
- Water supply for any beneficial uses

SOIL & WATER RESOURCES: PLANNING & MANAGEMENT

Irrigation Scheduling Equipment

The district provides reduced cost equipment for water management to district producers to encourage appropriate monitoring that leads to greater levels of water conservation.

Goals & Benefits
Irrigation scheduling is a critical part of good irrigation water management. Over-irrigation increases production cost, can reduce crop yields, and leaches nitrates out of the crop root zone, thus polluting the groundwater. Simple management tools are available, which can help the irrigator decide when it is appropriate to irrigate and when he or she can wait.

The district sells several of these tools at a 50% discount to irrigators in the district. The equipment is also for sale to others at regular prices. The irrigation scheduling equipment available includes:

- Irrometer - Moisture Sensors, Hand Held Meters and Data Loggers
- ET Gage Company – Atmometers
- Clement, Standard, and Backsaver Soil Probes

Timeline
Ongoing

Cost
$11,753.50/ year

Areas of Responsibility
- Development, management, use, and conservation of ground water and surface water

Domestic Water Testing Programs

The NRD provides water testing for nitrate and bacteria contamination for district residents so that individuals can make informed decisions about their water quality.

Goals & Benefits
The domestic well testing educational program partners with rural homeowners to test rural domestic wells for drinking water nitrate. Samples are taken each fall from previously selected rural domestic wells throughout the district and tested at the district's laboratory. Approximately 250 domestic wells are tested annually. Although domestic well samples may not provide an accurate representation of the condition of the aquifer, they are an indication of the quality of the drinking water being used by the rural public.

The district offers free analysis for nitrates and bacteria in groundwater to anyone in the district. Domestic wells should be tested at least once a year for both nitrates and bacteria. Ten parts per million is the safe drinking water standard set for nitrates in public water supplies. Infants are at highest risk from high nitrate poisoning. A condition called methemoglobinemia, also known as "blue baby syndrome," limits the blood's ability to carry oxygen. This can result in brain damage and even death if not treated promptly. High nitrates have been shown to cause health and reproduction problems in livestock. Certain health studies indicate that high nitrates may also be associated with some forms of cancer. While most wells are free of harmful bacteria, it can be introduced into a well during construction or repairs or may enter a well through a crack in the casing or surface seal. It is well documented that certain bacteria pose a serious health risk to humans and livestock.

The district also supplies basic at-home test kits for nitrates, nitrite, and phosphorus. While these tests are not as precise as our other testing programs, they do allow homeowners a quick and accurate way to diagnose a problem that would require further attention.

Timeline
Ongoing

Cost
Approximately $10,000 per year

Areas of Responsibility
- Pollution control
- Water supply for any beneficial uses

SOIL & WATER RESOURCES: PLANNING & MANAGEMENT

Crop Water Use Information

This program encourages efficient irrigation water use by providing the irrigator with daily water use data for crops throughout the growing season.

Goals & Benefits
The daily crop water use is determined by collecting data from an automated weather station (located at Recharge Lake near York), sponsored by the district and the University of Nebraska High Plains Climate Center. The collected information includes minimum-maximum daily temperature and corresponding relative humidity, solar radiation and wind run. This data is entered into a computer program developed by the University of Nebraska which calculates the amount of water used by the crop under those existing weather conditions.

Crop water-use information can be heard daily on KAWL radio in York, Nebraska. This information is also published in the *York News-Times* each day during irrigation season. Several county extension agents are also making this information available through their hotlines or weekly newspaper columns. For information, contact the Upper Big Blue NRD or your county extension office.

The benefit is that irrigators are able to make more informed decisions about when to irrigate and how much, leading to greater conservation of water resources.

Timeline
Ongoing

Cost
$3,200/year

Areas of Responsibility
- Development, management, use, and conservation of ground water and surface water
- Water supply for any beneficial uses

Municipal Water System Assistance Program

This program provides assistance to communities for improvements to water system to mitigate the impacts of non-point source contamination.

Goals & Benefits
This program is intended to provide assistance to communities for improvements in their water system to mitigate the impacts of non-point source groundwater contamination for the protection and public health of the community's residents. The reasons for system improvements must be related to the impacts of contamination from pollution sources which are non-point in nature, not from point source contamination.

Timeline
Ongoing

Cost
The district will provide financial assistance to the city or village in the amount not to exceed 25% of the local share of project cost, not to exceed $100,000.

The district will consider funding above the formula amount on a case-by-case basis. If part of the applicant's wellhead protection area also lies in another natural resources district, the district may adjust its contribution.

Financial assistance per community over a five-year period is limited to the maximum amount provided.

A recent use of this program was a new municipal well in McCool Junction. The total project cost was $848,500, of which the NRD contributed $41,650.

Areas of Responsibility
- Development, management, use, and conservation of ground water and surface water; pollution control
- Water supply for any beneficial uses

SOIL & WATER RESOURCES: PLANNING & MANAGEMENT

Nebraska Soil Carbon Project

In 2021, the Upper Big Blue NRD began a partnership with The Nature Conservancy, Ecosystem Services Market Consortium, Cargill, Target, and McDonald's, USDA-NRCS, and the Central Platte NRD to create a five-year pilot program to increase benefits and support for farmers to implement key practices on their acres. The Nebraska Soil Carbon Project could provide up to $4 million over five years to producers in the Upper Big Blue and Central Platte NRDs to implement cover crops, diverse rotations, and no-till practices. It will also give them the opportunity to experiment with the carbon market concept that is predicted to have a major impact on agriculture in the future.

Goals & Benefits
Increasing cropland soil carbon has multiple benefits for the producer and the environment including more stable yields; improved nutrient availability and water holding capacity; and climate stabilization. Now is a great time to invest in soil health practices that increase soil carbon, as markets are emerging to link soil carbon buyers and suppliers. Private companies are looking for ways to decrease their carbon footprint and Nebraska's growers can provide these benefits by improving their farming operations as they implement soil health practices. It is a win-win situation, as this systems approach gives companies a way to meet part of their greenhouse gas reduction goals while supporting farmers who are implementing conservation practices.

The Upper Big Blue and Central Platte NRDs plan to engage 100 farmers and 100,000 acres in the program over its five-year duration.

Timeline
Ongoing

Cost
Total cost of this program is $8 million; NRD will be reimbursed for all costs and staff time for this project.

Areas of Responsibility
- Soil conservation
- Erosion prevention and control
- Pollution control
- Water supply for any beneficial uses

Project GROW

Project GROW is a test plot of NRD-managed farmland owned by the City of York that sits atop the city's wellfield. The space also features community garden plots and pollinator habitat areas. Its purpose is to educate growers on the benefits of soil health practices and protect water quality in the city's wellhead.

Goals & Benefits

The five-year collaboration between the city and the NRD involves farming 120 acres using soil health practices including diverse crop rotations, cover crops, livestock grazing, and reduced tillage. Soil health practices are shown to reduce the leaching of nitrogen and other agrochemicals into the groundwater supply. The goal of this project is to improve the soils above the wellfield (where water for residents of the City of York is drawn) and thus protect water quality. It is also a demonstration site, where producers and students can learn more about soil health practices. The Project GROW Winter Workshop is held annually in York, which is a soil health symposium for growers that brings together a diverse group of researchers and practitioners, presenting on subjects from increasing soil carbon to more accurate irrigation and fertilization practices, to climate resiliency.

Timeline

Initial period of project: 2018-2022
Project renewed for 2023-2028

Cost

The total cost for this project was approximately $100,000, most of which was covered by grant funding. The NRD portion was approximately $40,000. This includes $50,000 in grant funds from National Association of Conservation Districts and $50,000 in available funds from Source Water Protection Grant administered by Nebraska Department of Environment and Energy (the NRD did not use the entirety of the grant from NDEE).

Areas of Responsibility

- Soil conservation
- Erosion prevention and control
- Pollution control
- Erosion prevention and control

SOIL & WATER RESOURCES: PLANNING & MANAGEMENT

Research Partnerships

The Upper Big Blue NRD is working with the University of Nebraska Medical Center (UNMC) and University of Nebraska Lincoln to collect data for multiple studies involving environmental factors and human health.

Goals & Benefits

The Nebraska Cancer Registry has shown that between 1987 and 2016, 37 cases of pediatric cancer have been diagnosed within the Upper Big Blue NRD area. Could there be a link to water quality? Upper Big Blue NRD staff have collected samples from domestic wells in the district located close to documented cases of pediatric cancer. The samples were analyzed for nitrates, arsenic, atrazine, uranium, and uranium decay products. Due to season variability, additional samples will be collected in intervals over a two-year period. Samples will be collected in April/May (pre irrigation), June/July (during irrigation), and October/November (after irrigation). The goal is to sample 50 wells across the district. Water quality information will be sent to the homeowner with an explanation of their results. If elevated levels of contaminants are detected, the participants will be provided with information about technologies for removing these compounds from drinking water.

At the conclusion of the study, location-based result maps will be generated to show where areas with high pediatric cancer incidence intersect with areas that have elevated agrochemical concentrations in drinking water. All data reported to the public will be aggregated, so that individual results cannot be tracked to a specific home, well, or family. The findings from this research will allow for development of a comprehensive monitoring program for environmental contaminants in areas where elevated incidence rates for pediatric cancer have been documented. UNMC anticipates development of techniques that will enable them to draw preliminary conclusions about water quality and pediatric cancer. Researchers have also used data collected in a related study about birth defects in Nebraska.

Timeline: 2021-2024

Areas of Responsibility

- Pollution control
- Development, management, use, and conservation of ground water and surface water
- Water supply for any beneficial uses

Blue Basin Modeling

The Upper Big Blue NRD joined forces with Tri-Basin, Lower Blue, and Little Blue NRDs as well as the State of Nebraska Department of Natural Resources to create a comprehensive groundwater flow model tool to map areas of hydrologic connectivity between ground and surface water. This tool can also be used to look at large water users and their potential impacts to existing ground and surface water users.

Goals & Benefits

The goal of this is to build a tool to identify areas of hydrologic connection between surface and groundwater and look at future groundwater uses and their potential impacts on existing groundwater and surface water resources in the Blue River Basin. By comparing surface water flow rates and ground water levels, to drought patterns and irrigation use, the NRD will be able to accurately set or adjust policy to ensure adequate supply for all water users.

Timeline

Recording and monitoring for this project began in 2017 continued through 2020. The model is now in calibration and is expected to provide results in 2024.

Costs

The total cost of this multiyear project is estimated to be $700,000. The Upper Big Blue NRD is responsible for 19% of the total cost ($133,000). The rest of the cost is covered by partners in the project.

Area of Responsibility

- Development, management, use, and conservation of ground water and surface water

SOIL & WATER RESOURCES: PLANNING & MANAGEMENT

Water Quality Management Plan/ Lake Hastings Improvement Plan/ Regional Basin-wide Groundwater Flow Model

The Upper Big Blue Natural Resources District has finalized a district-wide Water Quality Management Plan (WQMP) which will provide a concise summary on water resource conditions in the district as well as offer direction for a coordinated approach to address non-point source pollution. The WQMP is based on the U.S. Environmental Protection Agency's Nine-Elements of Watershed Planning as well as basin planning guidance provided by the Nebraska Department of Environment and Energy.

The WQMP documents specific projects intended for implementation over the next five years. These projects and practices are aimed at improving water quality and removing targeted water bodies from NDEE's list of impaired waters.

Over the next five years the district is expecting an increase in the number of land treatment practices implemented due to the adoption of the district's Water Quality Management Plan WQMP. The target areas of the plan for the first five-year period include two impaired segments of Beaver Creek and the drainage basin above Recharge Lake (York). In 2022, the plan was expanded to include the entirety of the Beaver Creek Watershed. Planning has also begun for expanding the plan to include the Lake Hastings watershed.

The engineering firm JEO was contracted to help with this project. The WQMP was adopted by the Environmental Protection Agency in March 2020.

Next steps in the implementation of the WQMP will include developing creative ways to encourage the adoption of best management practices to improve water quality in the priority and special priority areas.

Work continues on the Voluntary Integrated Management Plan (VIMP) as a regional basin-wide groundwater flow model is being developed in partnership with the Nebraska Department of Natural Resources and the Blue River Basin natural resources districts. The outcome of the regional model will be incorporated into the final VIMP.

Goals/Benefit

1. The quality of surface water and groundwater resources in the basin will be enhanced through a comprehensive and collaborative program that efficiently and effectively implements actions to restore and protect natural resources from degradation and impairment.
2. Resource managers, public officials, community leaders, and private citizens will understand the effects of human activities on water quality and support actions to restore and protect water resources from impairment by non-point source pollution.
3. Land and water resources will be stable and productive using community-supported best management practices.
4. The water quality of surface and groundwater resources will meet the conditions necessary to support domestic, industrial, agricultural, recreational, and ecological uses.

Timeline

The initial Water Quality Management Plan process began in 2018 and will be ongoing. The Lake Hastings Improvement Plan began in 2022 and will be ongoing.

Cost

For the Watershed Stakeholder Implementation Plan the NRD received an EPA grant through the Nebraska Department of Energy and Environment that covered 60% ($18,000) of the study costs (total $30,000) and the NRD contributed the remaining 40% ($12,000).

For the NRD wide Water Quality Management Plan, the district also received an EPA grant through the Nebraska Department of Energy and Environment that covered 60% of the plan costs. Total costs for the plan were $307,655.00, with the EPA grant covering $184,599 (60%) and the NRD providing $123,066 (40%).

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SOIL & WATER RESOURCES: PLANNING & MANAGEMENT

For the Lake Hastings Implementation Plan, funding will be applied for through Non-point Source Water Quality grants. The total cost of the project will be split between the City of Hastings, and the Upper Big Blue and Little Blue NRDs.

The planning phase for the Lake Hastings Watershed Improvement is estimated to cost $64,815. Grant funding from NDEE/EPA is expected to provide 60 percent ($40,000) and local funding will provide 40 percent ($20,000) for the implementation phase of the restoration project. Local funding will be provided by the Upper Big Blue and Little Blue NRDs and the City of Hastings.

Goals of the Lake Hastings Watershed improvement include shoreline stabilization, urban planning for improved drainage, reduction of sediment load in the lake, and improving the waterbody for recreational purposes.

Areas of Responsibility

- Soil conservation
- Pollution control
- Erosion prevention and control
- Development, management, use, and conservation of ground water and surface water
- Water supply for any beneficial uses

Aquifer Quality Well Abandonment Cost-Share Assistance Program

Wells that have not been properly decommissioned are a direct conduit for contaminants to gain entry into our drinking water. The Aquifer Quality Well Abandonment Cost-Share Assistance Program (AQWACAP) provides funds for proper decommissioning of wells.

Wells must be decommissioned according Nebraska Department of Health and Human Services System regulations governing water well standards. All decommissioning activities must be conducted by a licensed contractor.

The cost-share rate is 60 percent of the actual labor and materials. The maximum cost-share rates for the proper plugging of wells of various casing diameters is $750 for all wel ls.

All below ground pipe and any above ground pipe, tower or apparatus that may impede the plugging activity must be removed. Any cost incurred for this removal is not eligible for cost-share. The district may require that a representative be present during the actual plugging process. (This will be done on a random basis.)

The goal of this project is the prevention of groundwater contamination.

Timeline
Ongoing

Cost
In 2022-2023, the NRD distributed $42,756.34 through this program. Average cost from year to year varies.

Areas of Responsibility

- Pollution control
- Development, management, use, and conservation of ground water and surface water
- Water supply for any beneficial uses

SOIL & WATER RESOURCES:
PLANNING & MANAGEMENT

Flow Meter Maintenance Program

The Upper Big Blue Natural Resources District encourages the efficient use of groundwater for irrigation so that there will continue to be abundant water for all beneficial uses in our district. NRD funds are available for irrigators to repair and maintain flow meters.

All flow meters used in the district are eligible for flow meter repair cost-share once every four years. The cost-share rate is fifty percent (50%) not to exceed $300 per flow meter repair. The maximum cost-share per landowner for flow meter repair is $1,000 per fiscal year.

The district is in the mandatory reporting phase of the Groundwater Management Area Rules and Regulations. Proper maintenance is critical to ensuring that flow meters accurately measure groundwater withdrawal. Without regular maintenance flow meters will begin to provide inaccurate data and eventually fail. Routine flow meter inspection and maintenance is required for all irrigation flow meters in the district. Mechanical flow meters will be inspected and serviced on a five (5) year rotation. Electronic flow meters will be visited every four (4) years. The district will replace batteries. The cost of batteries will be billed to the owner of the flow meter.

All flow meters used on irrigation wells are required to be enrolled in the NRD's flow meter maintenance program. There is no charge for this service. One hundred percent (100%) of the program's funding is provided by the district. Costs associated with repairs of a flow meter and/or its proper installation, determined by the maintenance inspection, are the responsibility of the well owner and could be covered by cost-share.

Timeline
Ongoing

Areas of Responsibility
- Soil conservation
- Pollution control
- Erosion prevention and control
- Development, management, use, and conservation of ground water and surface water
- Water supply for any beneficial uses

Water Use Summary Reporting Software

NRD staff are working with a third-party vendor to develop a summary report showing producers their pooling and water use. The report would use data available in the Water Accounting Platform. The intent would be to educate producers on how the district views and uses their water use data in an allocation.

The goal of this project is to provide producers with information to assist them in making better management decisions about irrigation and to provide greater transparency about NRD decision making.

Timeline
Development beginning in 2022, plan to roll out new platform in 2023 or 2024

Cost
Development phase: $10,000

Areas of Responsibility

- Development, management, use, and conservation of ground water and surface water
- Water supply for any beneficial uses

SOIL & WATER RESOURCES:
PLANNING & MANAGEMENT

Chemigation Program

The Upper Big Blue NRD is looking for ways to incentivize producers who try fertilizer application using chemigation as a means of increasing adoption of this practice. Chemigation is a useful way to apply chemicals and fertilizer onto fields using a center pivot to control application uniformity. All that is necessary to chemigate is an applicators license, the appropriate safety equipment, and a permit from the NRD. The goal of this incentive program is to increase the number of producers using this fertilizer application method by giving cost-share to producers to help offset the startup cost.

For approved Chemigation Equipment Cost-Share Incentive Program applications, the maximum cost-share rate is 50% of the actual cost, up to $1,000 per site, for the purchase of new chemigation equipment and chemigation permit. This program is intended for new chemigation sites and those that have not had an active chemigation permit in the last ten (10) years. The minimum cost-share payment is $100.00. NRCS, NSWCP, and NRD funds will not be combined for any practice. Eligible applicants will need to keep their permit active for 3 years. Any equipment purchased prior to application authorization is ineligible for cost-share. To be approved for cost-share, applicants must provide a receipt for equipment purchased, chemigation permit, and any other forms deemed necessary by the district. Application approval will be based on fund availability.

Timeline
Beginning in 2023, ongoing

Areas of Responsibility
- Pollution control

PROJECTS & PROGRAMS

Rawhide Portable Corral Grazing Equipment

The NRD owns equipment that can be utilized by area cattle producers to encourage wetland grazing.

Goals & Benefits
Grazing wetlands is a useful management tool to keep the habitat in the early successional stage of growth, which is the state that is best suited to many types of wildlife, especially migratory waterfowl and shorebirds. The NRD managed program is offered in partnership with the Rainwater Basin Joint Venture. It benefits cattle producers, who are able to use the equipment free of charge; the equipment makes loading cattle in and out of wetlands much simpler. The benefit to the NRD and Rainwater Basin Joint Venture is that wetlands are managed in a natural, cost-effective way.

Timeline
Beginning in 2019, ongoing

Cost
- Value of corral was $23,350, donated by Rainwater Basin Joint Venture
- Cost to the NRD is $0

Areas of Responsibility
- Forestry and range management
- Development and management of fish and wildlife habitat

PROJECTS & PROGRAMS

Recreation and Education Areas

The NRD provides annual maintenance and management of six publicly accessible nature areas (Pioneer Trails Recreation Area; Teal View Wetland Education Area; Bruce L. Anderson Recreation Area and Archery Range; Oxbow Trail Recreation Area; Overland Trail Recreation Area; Smith Creek Recreation Area), with various amenities including camping pads, boat docks, and bathrooms.

Goals & Benefits
Five of the six recreation areas include dam structures to create lakes usable for many recreation purposes that are free to the public to use for boating, fishing, swimming, hiking, etc. The recreation areas also provide walking trails and other amenities, as well as vital habitat for many species of animals and plants. They also provide aquifer recharge and flooding containment, as well as opportunities for studies on water quality, water quantity, and land treatment practices. Teal View Wetland Education area is a restored wetland that provides wildlife habitat for migratory bird species that traverse the central flyway of Nebraska annually. It also provides educational opportunities for the public to engage with this essential and disappearing type of landscape.

>>Pioneer Trails Recreation Area

- Dam Constructed: 1986
- Total cost: $446,619 (NRD share: $111,233)
- Recreation Area Constructed: 2015
- Total cost: $728,367.95 (NRD share: $728,367.95)

>>Bruce L. Anderson Recreation Area

- Recharge Lake Demonstration Project Constructed: 1990
- Total cost: $682,447 (NRD share: $148,624)
- Bruce L. Anderson Recreation Area Constructed: 2011
- Total cost: $697,045.06 (NRD share: $697,045.06)

>>Oxbow Trail Recreation Area

- Constructed: 1998
- Total cost: $232,105 (NRD share: $232,105)

>>Overland Trail Recreation Area

- Constructed: 1998
- Total cost: $132,353 (NRD share: $132,353)

>>Smith Creek Recreation Area

- Constructed: 1983
- Total cost: $310,000 (NRD share: $310,000)

>>Teal View Wetland Education Area

- Acquired: March 2021
- Total cost: $61,230 (NRD share: $0)

Timeline

Ongoing

Areas of Responsibility

- Development and management of fish and wildlife habitat
- Development and management of recreational and park facilities
- Flood prevention and control

PROJECTS & PROGRAMS

Existing Dams (Operation, Maintenance, and Rehabilitation)

The district has 44 dams on both district property and private property that provide a range of conservation benefits. These dams require ongoing maintenance at varying levels.

Goals & Benefits

The district is responsible for the maintenance of 44 dams that have benefits including soil and water conservation, irrigation water supply, groundwater recharge, fish and wildlife benefits, and recreation benefits. Common issues at these dams include noxious weed control, rodent damage, shoreline erosion, tree and shrub control, encroachment of right of way, and deterioration of outlet pipes, drawdown pipes, and risers. Many of these structures are 40-50 years old and will be in need of major rehabilitation.

In order to retain the benefits provided by these dams, they must be maintained and repaired as needed. During the past few years, the district has rehabilitated a number of these aging structures. The district's dam inspections have revealed Increased erosion at a number of dams, including Stara Dam, Percival-Erickson Dam, and Dorchester 2A Dam. The NRD added rock on the dam faces of each of these dams to stop or slow erosion.

As other dams continue to age, there will be an ongoing need for major repairs. The district identifies these needs through annual inspections, including Nebraska Department of Natural Resources inspections. Pipes are inspected with the NeDNR's camera which can pinpoint failing pipe sections. These inspections can identify issues before they progress further and can prevent dam failure or the need for larger dam repairs.

Cost

- Johnson Creek 46 Dam - $37,300
- Mentink Dam - $57,800
- Friesen Dam - Adjacent Culvert - $31,300
- Dunker Dam - $31,800
- Stara Dam - $18,848
- Percival-Erickson Dam - $11,775
- Dorchester Dam 2A - $22,822.96

Removing these 7 from the list of 44, that leaves 37 dams that will eventually need major repair for a total estimate of $1.48 million.

Areas of Responsibility

- Development and management of fish and wildlife habitat
- Flood prevention and control
- Water supply for any beneficial uses
- Prevention of damages from flood water and sediment
- Erosion prevention and control

PROJECTS & PROGRAMS

Land Treatment Program

Annually the NRD installs various land treatment options to prevent erosion and provide other benefits on district properties. Land treatment practices include cost-share funding.

Goals & Benefits

There are two sources of cost-share assistance available to area landowners for installing conservation practices on their land. The Nebraska Soil and Water Conservation Program (NSWCP) and the Upper Big Blue NRD offer the incentives through the Land Treatment Program. The cost-share programs place primary importance on water conservation, water quality, and erosion control practices.

The Natural Resources Conservation Service (NRCS) is a vital federal agency partner of the Upper Big Blue NRD as both entities work together to facilitate various aspects of the district's Land Treatment Program. Local NRCS personnel provide technical assistance and other conservation services to farmers and landowners.

Land Treatment Program practices installed in 2023 included: sediment control basin, diversions, terrace system, windbreak plantings, brush management, and windbreak renovation.

Cost

A total of 43 practices were given cost-share assistance in fiscal year 2023, for a total cost-share of $109,389.01. From this total, the Nebraska Soil and Water Conservation Program (NSWCP) state share was $78,060.19 with the remainder ($31,328.82) coming from the Upper Big Blue NRD. *Extreme drought conditions in the district in FY23 limited the amount of land treatment improvements that could be installed in the district.*

Areas of Responsibility

- Soil conservation
- Erosion prevention and control
- Flood prevention and control
- Pollution control
- Development, management, use, and conservation of ground water and surface water

NRD Conservation Tree Planting

The NRD provided 23,650 low-cost seedlings for planting in the spring of 2023. Since 1974 when this program began, 1.9 million trees have been sold in the Upper big Blue NRD.

Goals & Benefits

Landowners can receive low-cost seedlings and shrubs for windbreaks, wildlife habitat, riparian buffer strips, and other land enhancement purposes. The NRD provides local administration and planting services for the program. The trees planted are essential for reducing erosion and for providing air and water purification, as well as wildlife habitat.

Cost: FY23 Tree Program

Trees/supplies	$18,283.05
Operating Costs	$4,136.25
Revenue	$35,803.56
Revenue less costs	**$11,852.43**

Areas of Responsibility

- Soil conservation
- Erosion prevention and control
- Flood prevention and control
- Pollution control
- Forestry and range management
- Development and management of fish and wildlife habitat

PROJECTS & PROGRAMS

Trail Projects

Seward Trail
The district provided technical, financial, and construction assistance to the City of Seward for the construction of a 2.7 mile hiking/biking trail along the east side of Seward which was completed in 2004. Through an interlocal agreement with the city, the Upper Big Blue NRD is providing financial assistance to the city for the extension of the trail which will loop around the perimeter of Seward. This trail project involves construction of a five-mile, 10- foot wide, concrete trail for bicycle and pedestrian use in southern, western and northern Seward. The project would connect to the existing trail at the Plum Creek Trailhead on South Columbia Avenue, just south of Depot Road. The trail would proceed west along the south edge of Seward crossing beneath Highway 15, through the Seward County Fairgrounds before passing beneath the Highway 34 bridge. At this point the trail would head north to Waverly Road. The trail would then travel along the south side of Waverly Road, cross Highway 15 at-grade and end at the existing trail located on the southeast corner of the intersection of Karol Kay Boulevard and Waverly Road, which is the northern end of the existing Plum Creek Trail.

Cost
The total cost of this project is $3.7 million. The NRD will contribute $150,000 to this project when it is complete (construction expected to begin in fall 2024).

Goals
The goal of these projects are to provide a quality of life enhancement for district residents with an emphasis on outdoor recreation.

Area of Responsibility
- Development and management of recreational and park facilities

Warning Sirens at Recreation Areas

The NRD will increase safety of campers at high use recreation areas in the district through the addition of storm warning sirens.

Goals & Benefits
With funding assistance through a grant agreement with the Nebraska Emergency Management Agency, the NRD plans to add warning sirens at four recreation areas (Bruce L. Anderson Recreation Area; Pioneer Trails Recreation Area; Smith Creek Recreation Area; and Oxbow Trail Recreation Area) to alert campers to the need to take shelter in the event of severe weather.

The NRD has been working with the local county emergency managers on the selection of the type of warning sirens that will be installed and the siren locations.

Cost
$120,000
NEMA: $108,000 (90%)
NRD: $12,000 (10%)

Timeline
These sirens are planned to be installed in FY 2024

Area of Responsibility
- Development and management of recreational and park facilities

PROJECTS & PROGRAMS

Urban Storm Water Master Planning and Drainage Projects

The district has completed storm water master drainage planning for Aurora, Milford, Giltner, and parts of Seward. The NRD is currently working with the City of York on this type of project as well.

Goals & Benefits
Due to the recently updated Flood Insurance Rate Maps (FIRM), the district assisted the City of York in conducting a Flood Mitigation Feasibility Study. This study provided a reconnaissance level feasibility study that identified potential flood risk reduction and mitigation measures that included structural, non-structural, and programmatic measures to reduce flood risks in and around York. The NRD provided $20,000 of financial assistance for the first phase of this project and approved an additional $21,000 for the second phase. Through this second phase the district is providing 50% cost share assistance to the City of York to apply for a Letter of Map Revision (LOMR) that will reduce the 100-year flood plain within the city.

The proper sizing and location of drainage works throughout a village or city should be considered, not just a local fix for a neighborhood problem. The district is also in a position to consider the impacts and solutions for drainage from or to rural areas. After the master planning is complete for a community, some construction cost share assistance from the district may be necessary to encourage construction of the highest priority components. It is expected that requests will be made over the next several years.

Timeline
Ongoing

Cost
$20,000-$35,000/year

Areas of Responsibility
- Flood prevention and control
- Drainage improvement

Interlocal Agreement with Lower Platte South NRD, Branched Oak

The Lower Platte South NRD has drafted an Interlocal Agreement with the Upper Big Blue NRD to cooperate and effectively implement programs and projects along the shared NRD boundary. This Interlocal Agreement will be amended for specific projects. These amendments will specify the identity, location, and terms of each specific project to be implemented in the neighboring NRD.

Amendment No. 1 to the Interlocal Agreement between the Upper Big Blue NRD and the Lower Platte South NRD outlines details of cost-share opportunities within the Branched Oak Watershed, which is mostly in the Lower Platte South NRD, but extends into the Upper Big Blue NRD.

Timeline
Beginning in 2022, ongoing

Areas of Responsibility

- Pollution control
- Development, management, use, and conservation of ground water and surface water
- Water supply for any beneficial uses
- Fish and wildlife habitat

PROJECTS & PROGRAMS

Community Park Enhancements

The NRD provides funding and professional support for the improvement of parks in district communities where it has been requested. The district provides technical and financial assistance to communities for the development or improvement of natural resources in nature areas, campgrounds and park facilities though the district's Parks Program.

Goal
The goal of these projects are to provide a quality of life enhancement for district residents with an emphasis on outdoor recreation.

Timeline
Ongoing

Cost
$10,000-$20,000/year, depending on requests

Area of Responsibility

- Development and management of recreational and park facilities
- Fish and wildlife habitat

Pioneer Trails Recreation Area Improvements

Pioneer Trails Recreation Area is one of the more developed recreation areas near a larger municipality in the district and gets heavy use by the public. Located just north and east of Aurora, the dam was constructed in 1986 with a 40 surface-acre lake designed to provide flood control, aquifer recharge, fish and wildlife habitat, and recreational opportunities. Initially high seepage rates kept the dam from storing much water and limited recreation opportunities. In 2013, the district sealed the lake bottom and in 2015 the district developed the recreation facilities. Pioneer Trails Recreational Area includes a variety of amenities such as RV and tent camping with electrical hook-ups, a picnic shelter, an amphitheater, trails, fishing, swimming, a boat launch, and restrooms.

In 2023, a shoreline access improvement project was completed.

Goals & Benefits
In the near term, the board is considering enhancements such as development of a playground area, development and implementation of a prescribed burn program, improved access to the lake for fishing, trails development, and roadway improvements. To meet a growing demand, future recreational improvements may include expansion of RV camping pads, installation of a boat dock and ADA accessible fishing dock or pier, removal of sediment, and installation of fish habitat structures. The district may also look into purchasing additional property adjacent to the lake (pending willing landowner) to expand recreation opportunities and public access.

Timeline
2021-2024

Cost
$500,000

Areas of Responsibility
- Development and management of recreational and park facilities
- Flood Prevention and control
- Fish and wildlife habitat

PROJECTS & PROGRAMS

Oxbow Trail Recreation Area Improvements

The Oxbow Trail Recreation Area offers one of the best fisheries in the area, thanks to the natural springs that supply water to the reservoir. The serene setting is popular for nature lovers and wildlife. In the summer of 2021, the district improved the space by adding a new restroom facility, ADA parking stalls, and a domestic water well. In 2023 the district is planning to add a supplemental water supply well to keep the reservoir elevation up during drought periods in order to protect the fishery.

Goals & Benefits
In the future, the board is considering the purchase of additional property adjacent to the lake where RV and tent camping pads could be added. The goal is to expand use of this recreational area.

Timeline
2021-2024

Cost
$1M

Area of Responsibility

- Development and management of recreational and park facilities
- Flood prevention and control
- Fish and wildlife habitat

Project Priority List FY2024

Project	Rank
Pioneer Trails – Silt Removal – North of Road 14 Bridge	1
Pioneer Trails – ADA Fishing Dock	2
Water Quality – RO Pilot Program	3
Recharge – Fishing Rehab	3
Recharge – Silt Removal – West of Road K Bridge	5
Oxbow Trail – Expand Rec Area to the West	6
Recharge – Additional ROW, RV Pads	7
Smith Creek – Silt Dam Repair or Alternative	7
Smith Creek – Playground Equipment	9
Oxbow Trail – Tent Camping Area near Entrance	10
Smith Creek – Additional ROW for RV Rec Area	10
Pioneer Trails – Add Boat Dock	12
Overland Trail – Pedestrian Bridge Across Creek	13
Dorchester Watershed – NRCS WFPOP	14

GENERAL EXPENSES

Expenses	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029
Auto & Truck Expenses	$78,453	$81,199	$84,041	$86,982	$90,027	$93,178
Directors' Expense	$32,000	$32,000	$32,000	$32,000	$32,000	$33,120
Directors' Per Diem	$44,339	$45,891	$47,497	$49,160	$50,880	$52,661
Dues & Memberships	$50,369	$52,636	$55,004	$57,479	$60,066	$62,168
Expenses -- Personnel	$54,131	$56,025	$57,986	$60,015	$62,116	$64,290
Fees & Licenses	$31,666	$32,774	$33,921	$35,108	$36,337	$37,609
Information & Education	$98,542	$101,991	$105,561	$109,256	$113,080	$117,038
Insurance	$87,975	$91,054	$94,241	$97,539	$100,953	$104,486
Legal Notices	$1,760	$1,821	$1,885	$1,951	$2,019	$2,090
Misc. Expense	$1,000	$1,000	$1,000	$1,000	$1,000	$1,035
Office Supplies & Expenses	$35,216	$36,448	$37,724	$39,044	$40,411	$41,825

Expenses	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029
Postage	$23,805	$24,638	$25,501	$26,393	$27,317	$28,273
Special Projects	$273,499	$283,071	$292,979	$303,233	$313,846	$324,831
Professional Services	$570,024	$589,974	$610,623	$631,995	$654,115	$677,009
Project Legal Costs	$5,175	$5,356	$5,544	$5,738	$5,938	$6,146
Project Operation & Maintenance	$142,313	$147,293	$152,449	$157,784	$163,307	$169,023
Other Operation & Maintenance	$24,737	$25,602	$26,489	$27,426	$28,386	$29,380
Materials for Resale	$98,325	$101,766	$105,328	$109,015	$112,830	$116,779
Utilities	$42,539	$44,027	$45,568	$47,163	$48,814	$50,522
Rent Expenses	$13,706	$13,706	$13,706	$13,706	$14,186	$14,683
Telephone	$29,498	$30,530	$31,598	$32,704	$33,849	$35,034
Salaries	$1,679,583	$1,738,369	$1,799,212	$1,862,184	$1,927,360	$1,994,818
Payroll Taxes	$128,345	$132,837	$137,486	$142,298	$147,279	$152,434
Employees' Benefits	$601,302	$622,348	$644,130	$666,675	$690,008	$714,158
Building Maintenance	$25,875	$26,781	$27,718	$28,688	$29,692	$30,731
Scholarship	$8,050	$8,050	$8,050	$8,050	$8,050	$8,332
TOTAL OPERATING EXPENSES	**$4,182,224**	**$4,327,189**	**$4,447,251**	**$4,632,588**	**$4,793,867**	**$4,961,652**

CAPITAL EXPENSES

Capital Expenses	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029
Land - Title & Easements	--	--	--	--	--	--
Project Construction Costs	$840,979	$870,413	$900,878	$932,408	$965,043	$998,820
Building Improvements	$10,000	$10,350	$10,712	$11,087	$11,475	$11,877
Land Treatment Cost Sharing	$284,625	$294,587	$304,897	$315,569	$326,614	$338,045
Intergovern. Cost Sharing	$285,660	$295,658	$306,006	$316,716	$327,801	$339,274
Buffer Strip Cost Sharing	$32,274	$33,404	$34,573	$35,783	$37,036	$38,332
Water Meter Repair Cost Share	$41,400	$42,849	$44,349	$45,901	$47,507	$49,170
Abandoned Well Cost Share	$58,995	$61,060	$63,197	$65,409	$67,698	$70,067
Chemigation	$51,750	$53,561	$55,435	$57,376	$59,384	$61,462
Wildlife Habitat	$2,588	$2,678	$2,772	$2,869	$2,969	$3,073
Storm Damage Tree Replacements	$8,280	$8,570	$8,870	$9,180	$9,501	$9,834
Private Dams Program	$207,000	$214,245	$221,744	$229,505	$237,537	$245,851
Transfer from Sinking Fund	--	--	--	--		--

Capital Expenses	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029
Total Capital Improvements Exempt from Levy Limit	$1,823,551	$1,887,375	$1,953,433	$2,021,803	$1,2,092,566	$2,165,806
Machinery & Equipment	$10,000	$10,350	$10,712	$11,087	$11,475	$11,877
Autos & Trucks	$50,000	$51,750	$53,561	$55,436	$57,376	$59,384
Office Equipment	$72,582	$75,123	$77,752	$80,473	$83,290	$86,205
Other Capital Expenses	$304,759	$315,425	$326,465	$337,892	$349,718	$361,958
Total Capital Improvements Not Exempt from Levy Limit	**$437,341**	**$452,648**	**$468,491**	**$484,888**	**$501,859**	**$519,424**
Total Capital Expenses (Exempt & Not Exempt)	**$2,260,892**	**$2,340,023**	**$2,421,924**	**$2,506,692**	**$2,594,426**	**$2,685,231**

TOTAL EXPENSES

	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029
General Expenses	$4,182,224	$4,327,189	$4,477,251	$4,632,588	$4,793,867	$4,961,652.35
Capital Expenses	$2,260,892	$2,340,023	$2,421,924	$2,506,692	$2,594,426	$2,685,231
Debt Service Expenses	--	--	--	--	--	--
TOTAL EXPENSES	**$6,443,116**	**$6,667,212**	**$6,899,175**	**$7,139,279**	**$7,127,867**	**$7,377,342**

CASH RESERVE

	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029
CASH RESERVE	$350,000	$350,000	$350,000	$350,000	$350,000	$350,000

ASSETS

ASSETS	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029
Cash in Bank	$1,000,000	$1,000,000	$1,000,000	$1,000,000	$1,000,000	$1,000,000
Accounts Receivable -- Federal	$18,630	$19,282	$19,957	$20,655	$21,378	$22,126
Accounts Receivable	$2,820	$2,919	$3,021	$3,127	$3,236	$3,349
Inventories & Prepaid Expenses	$102,417	$106,002	$109,712	$113,552	$117,526	**$121,639**
TOTAL ASSETS	**$1,123,867**	**$1,128,203**	**$1,132,690**	**$1,137,334**	**$1,142,141**	**$1,147,115**

LIABILITIES

LIABILITIES	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029
Accounts Payable	$271,384	$280,882	$290,713	$300,888	$311,419	$322,319
Accrued Vacation	$125,120	$129,499	$134,032	$138,723	$143,578	$148,603
Payroll Taxes Payable	$31,151	$32,242	$33,370	$34,538	$35,747	$36,998
Retirement Payable	$12,644	$13,640	$13,544	$14,018	$14,509	$15,017
Sales Tax Payable	$137	$142	$147	$152	$157	$162
Annuity Payable	--	--	--	--	--	--
FSA Payable	$2,626	$2,718	$2,813	$2,911	$3,013	$3,118
Net Cash Balance	$1,588,061	$1,643,643	$1,701,171	$1,760,712	$1,822,336	$1,886,118
Investments	$708,004	$723,784	$758,431	$784,976	$812,450	$840,886
County Treasurers' Balances	$26,075	$26,988	$27,932	$28,910	$29,922	$30,969
Total Liabilities	**$2,765,201**	**$2,861,983**	**$2,962,152**	**$3,065,827**	**$3,173,131**	**$3,284,191**

STATE AND FEDERAL RECEIPTS

	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029
State Grants & Funds	$317,016	$325,112	$339,596	$351,482	$363,783	$376,515
Federal Grants & Funds	$251,505	$260,308	$269,418	$278,848	$288,608	$298,709
Private Grants	$47,093	$48,741	$50,447	$52,212	$54,040	$55,931
Labor on Sale of Trees	$1,035	$1,071	$1,109	$1,148	$1,188	$1,230
Customer Charges	$3,623	$3,749	$3,881	$4,016	$4,157	$4,302
Income from investments (interest)	$3,623	$3,749	$3,881	$4,016	$4,157	$4,302
Miscellaneous Income	--	--	--	--	--	--
Reimbursement by other NRDs	$136,360	$141,132	$146,072	$151,184	$156,476	$161,953
Pro-Rate Motor Vehicle & Car Line Tax	$8,073	$8,356	$8,648	$8,951	$9,264	$9,588
Income from Counties/Cities	$33,206	$34,368	$35,571	$36,816	$38,105	$39,439
Transfer from other Funds	--	--	--	--	--	--
TOTAL RECEIPTS	**$801,533**	**$829,586**	**$858,622**	**$888,673**	**$919,777**	**$951,969**

PROPERTY TAXES

	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029
Property Taxes	$3,507,601	$3,630,367	$3,757,430	$3,888,940	$4,025,053	$4,165,930
County Treasurers Commission	$35,076	$36,304	$37,574	$38,889	$40,251	$41,660
TOTAL PROPERTY TAX REQUIREMENT	**$3,542,677**	**$3,66,671**	**$3,795,005**	**$3,927,830**	**$4,065,304**	**$4,207,590**

UPPER BIG BLUE
Natural Resources District
Protecting Lives • Protecting Property • Protecting the Future

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(402) 362-6601

This Long Range Plan Document was Adopted by the Board of Directors, Upper Big Blue Natural Resources District, on September 21, 2023 in accordance with Nebraska Law (Section 2-3276).

Our Mission

The Upper Big Blue Natural Resources District shall be a leader in conserving, protecting, developing, and managing the natural resources of this District for the health and welfare of the people of the District. The core of the Upper Big Blue Natural Resources District focuses on these things:

- Water
- Soil
- Urban Conservation
- Flood Control
- Trees and Wildlife Habitat
- Recreation
- Grazing Lands
- Education