

Master Plan 2019 - 2029



LOWER PLATTE NORTH
Natural Resources District

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LPNNRD Directors

November 2019

Lon Olson	Fremont	Subdistrict 1
Kelly Thompson	Fremont	Subdistrict 1
Frank Pollard	Fremont	Subdistrict 2
Bill Saeger	Fremont	Subdistrict 2
Dave Saalfeld	North Bend	Subdistrict 3
Larry Feala	North Bend	Subdistrict 3
Chris Yosten	Schuyler	Subdistrict 4
Matt Bailey	Schuyler	Subdistrict 4
Mark Seier	Newman Grove	Subdistrict 5
John Hannah	Columbus	Subdistrict 5
Joe Birkel	David City	Subdistrict 6
Robert Hilger	David City	Subdistrict 6
Nancy Meyer	Cedar Bluffs	Subdistrict 7
Ryan Sabatka	Weston	Subdistrict 7
Jerry Johnson	Wahoo	Subdistrict 8
Alex Kavan	Wahoo	Subdistrict 8
Don Veskerna	Ashland	Subdistrict 9
Bob Meduna Jr.	Wahoo	Subdistrict 9
Gene Ruzicka	North Bend	At Large

LPNNRD Staff

November 2019

Main Office Staff:

Daryl Andersen	Water Resources Manager
Tyler Benal	Water Resources Specialist
Jill Breunig	Bookkeeping Department Head/Administrative Assistant
Will Brueggemann	Water Resources Specialist
Duke Dokulil	Operations & Maintenance Technician
Sean Elliott	Projects/Rural Water Manager
Eric Gottschalk	General Manager
Bob Heimann	Operations & Maintenance Manager
Dave Moore	Operations & Maintenance Technician
Tom Mountford	Assistant Manager
Russell Oaklund	Lead Water Resources Technician
Dave Odvody	Recreation Facilitator
Chris Poole	Grants/GIS Department Head
Karen Rezac	Department/Administrative Assistant
Lacey Sabatka	Information & Education Assistant/Receptionist
Bret Schomer	Lake Wanahoo Supervisor/Water Resources Specialist
Desirae TePoel	Information & Education Department Head

Staff Support for NRCS Offices:

Rob Christian	NRD/NRCS Technician
Kimberly Piitz	Field Office Assistant (Butler County)
Kristin Miller	Field Office Assistant (Colfax County)
Luz Schafersman	Field Office Assistant (Dodge County)
Marla Milliken	Field Office Assistant (Saunders County)

Lower Platte North NRD Master Plan

Introduction

The Lower Platte North Natural Resources District (LPNNRD) is one of 23 Natural Resources Districts created in 1969 with the passage of LB 1357 by the Nebraska Unicameral. Since its formation in 1972, LPNNRD has been assisting people in the Lower Platte North River Basin in the development and protection of our soil and water resources. Nebraska Statutes require that the Natural Resources Districts develop a Master Plan. The purpose of this plan is to include goals and objectives for LPNNRD for the next 10 years (January 1, 2020 - December 31, 2029). The goals reflect the responsibilities and authorities contained in State Statutes as outlined below. The listed objectives are included in the District's Long Range Implementation Plan, which is the implementation tool of the Master Plan. Included in this plan are chapters on LPNNRD's: Physical Description, History, Program & Projects and what is expected in the future.

The Natural Resources Districts have been given statutory responsibility outlined in Sections 2-3229, R.R.S. 1943. In this section it states that "The purposes of the Natural Resources Districts shall be to develop and execute, through the exercise of powers and authorities contained in this act, plans, facilities, works and programs relating to: (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 groundwater 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."

ADMINISTRATION

LPNNRD Directors

The Lower Platte North NRD programs and projects have been established to achieve our objectives of properly conserving and developing our soil, water and related land resources. Project and program priorities and policies have been established by a 19-member Board of Directors who govern the District. LPNNRD Directors are elected at the general election for four-year terms with half of the members up for election every two years. One member is elected at large and is up for election every four years.

LPNNRD operates with four standing committees and subcommittees are formed as needed. The standing committees are: Operations (including Education, Operations & Maintenance, and Rural Water); Water Resources; Projects; and Executive. LPNNRD operates by a set of bylaws which are kept on

file at the District Headquarters in Wahoo, Nebraska.

LPNNRD Staff

The staff of LPNNRD headquarters consists of 15 full-time and three part-time/seasonal employees. LPNNRD also staffs a full-time Conservation Technician, and four Field Office Assistants in Natural Resource Conservation Service county offices located in Wahoo, David City, Fremont and Schuyler. Positions are also supported in Boone, Platte, and Madison Counties. As of January 2020, the staff consists of a General Manager, Assistant Manager, Bookkeeping Department Head/Administrative Assistant, Water Resources Manager, Operations and Maintenance Manager, Projects/Rural Water Manager, Lead Water Resources Specialist, two Water Resources Specialists, Lake Wanhoo Recreation Supervisor/Water Resource Specialist, Information & Education Department Head, Information & Education Assistant/Receptionist, GIS/ Grants Department Head, two Operation and Maintenance Technicians, Recreation Facilitator, and a Department/Administrative Assistant.

In addition to the above listed full-time positions, LPNNRD employs seasonal and summer employees to assist with the Lake Wanhoo NRD Recreation Area, water programs, tree planting, and maintenance of NRD projects.

HISTORY

The area within LPNNRD is very diverse. Originally, most reaches along the Platte River and Todd Valley areas were marshy habitat areas with tall grasses and abundant wildlife. Dense prairie grasses covered the rolling hills of the District. The dense grass provided an outstanding natural deterrent to soil erosion caused by the actions of wind and water. In the mid 1800's, settlers began to develop this area for row crop production and other development. As the land use changed, soil erosion and sedimentation increased to make this portion of the State one of the most vulnerable to soil loss.

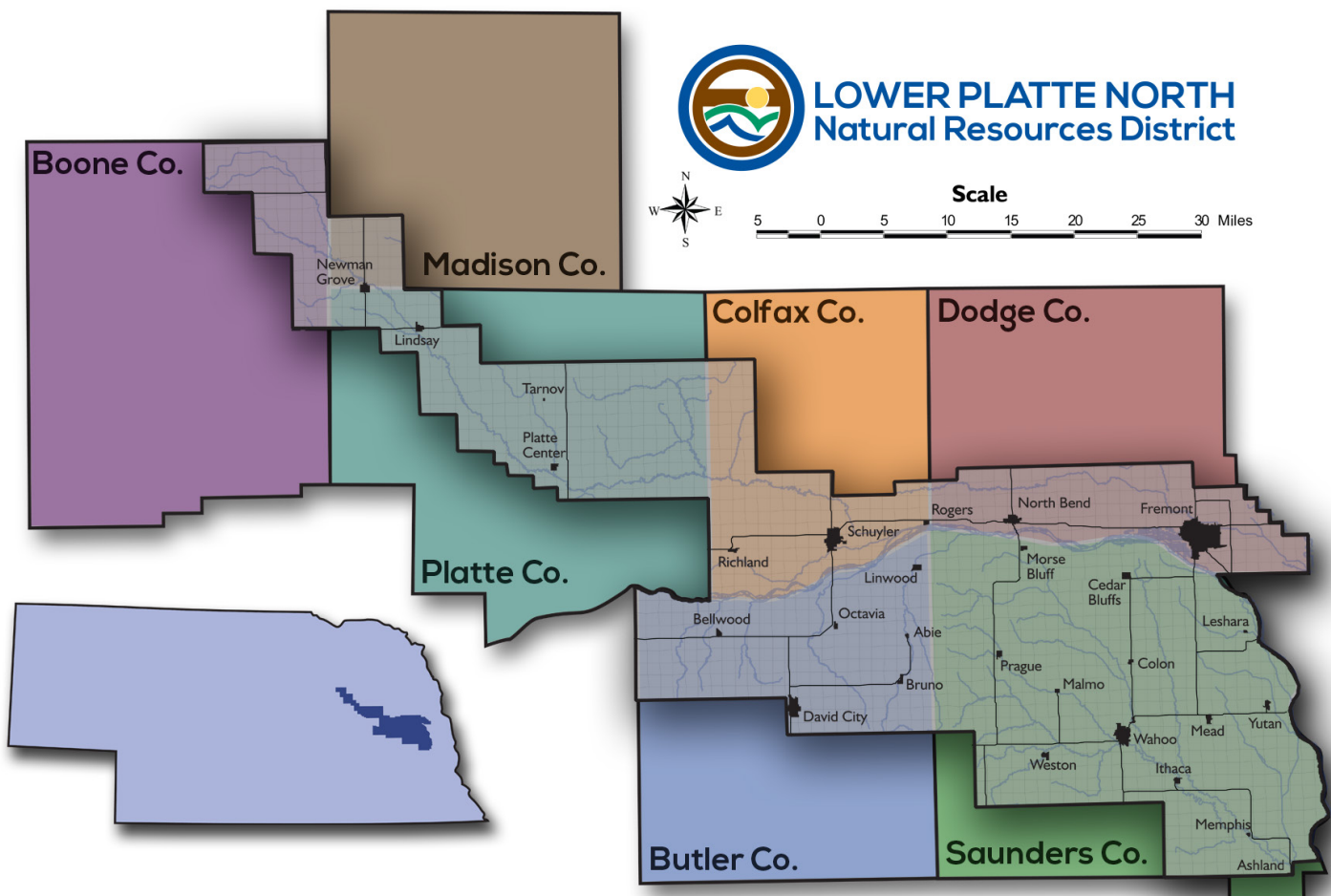
In 1933, Congress created the Soil Erosion Service (SES) as a part of

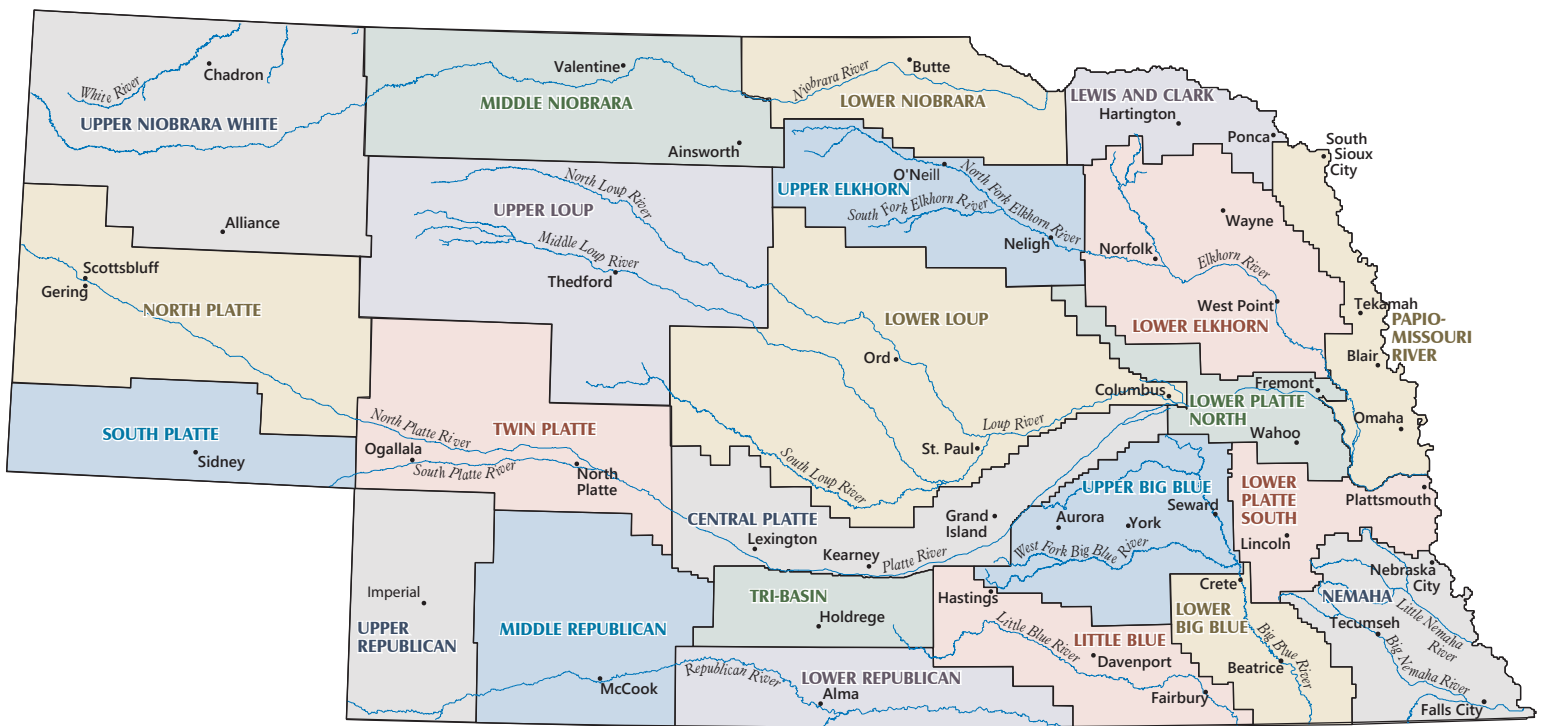
the New Deal legislation package that gave soil conservation practices national attention. In 1935, the Soil Conservation Service (SCS) was created and took over the responsibilities of the SES. While changing and broadening its mission in the 1980's and 1990's, the SCS has evolved into the Natural Resources Conservation Service (NRCS), as it is known today. In 1937, Nebraska adopted what was called the "Standard Act" and resulted in the creation of Soil Conservation Districts in 1959. The Soil Conservation Districts were sympathetic to excessive erosion and sedimentation from increased cultivation, development and flooding.

In 1954, Public Law 83-566 (Watershed Protection and Flood

Prevention Act) was passed by Congress and delegated flood control responsibilities to Local governments. In 1960, the Salt-Wahoo Watershed Association was the first group formed in the area to actively pursue flood reduction.

As time passed, Nebraska recognized that a consolidated effort would be a better approach in addressing complex natural resource issues and concerns. In 1972, 154 single purpose districts were absorbed by 24 (now 23) Natural Resource Districts (NRD's) with their creation by the Nebraska legislature in 1969. The NRD's use their expanded responsibilities to conserve and properly develop our State's invaluable natural resources.





PHYSICAL DESCRIPTION OF THE DISTRICT

Location

The Lower Platte North Natural Resources District is located in the Lower Platte River Basin in eastern Nebraska and includes 1,031,000 acres of land. Seven other NRD's border LPNNRD which are: the Lower Platte South NRD; Papio-Missouri River NRD; Lower Elkhorn NRD; Upper Elkhorn NRD; Lower Loup NRD; Central Platte NRD and the Upper Big Blue NRD. Approximately 72-miles of the Platte River flow directly through or border the District. Other important tributaries include: Wahoo Creek, Skull Creek, Bone Creek, Loeske Creek, Taylor Creek, Shell Creek, Elm Creek, Clear Creek, Silver Creek, Rawhide Creek, Sand Creek and Duck Creek.

A portion of Saunders, Butler, Platte, Dodge, Colfax, Boone and Madison Counties are

within LPNNRD. This includes 28 cities, towns and villages; the largest being Fremont, followed by Wahoo, Schuyler, David City, North Bend, Newman Grove, Yutan, Cedar Bluffs, Mead, Bellwood, and Lindsay. The population of LPNNRD is approximately 63,000, which is about 40% rural and 60% urban.

Topography

Topography varies greatly from rolling hills to flat plains and it is very evident that the District has undergone significant erosion. The northwest arm of the District comprising portions of Boone, Madison and about two-thirds of Platte County is mostly hilly land with moderate to steep slopes, sharp ridge crests and flat plains. Some flat valley areas exist in north central Platte County. East central Platte County and western Colfax County are mostly hilly land containing moderate to steep slopes.

The Platte River extends the length of the District from Columbus to Ashland, a distance of about 72 miles. Throughout the western half of this stretch, the Platte valley is five to seven miles wide but tapers near Fremont to about two miles wide at Ashland. The valley side walls vary in topography from gently sloping hills to steep narrow canyons. The valley is nearly flat with a southeast slope of 4 - 6 feet per mile.

Todd Valley, 5 - 8 miles wide, runs through the east central portion of Saunders County from approximately Morse Bluff and Cedar Bluffs to Ashland. This area consists of nearly level lands that drain to the southeast. West and southwest Saunders county and eastern Butler are composed of bluffs along the north edge (adjacent to the Platte River Valley) and rolling hills, ridges and steep valley slopes further south of the Platte.

Soils

Within LPNNRD, soils in the uplands of Butler and Saunders Counties are primarily clays and silty clay to silty clay loams. Water permeability of these soils is less than 1.0 inch per hour on slopes that range from gentle to 20 percent. Recharge rates are quite low and recharge is limited primarily to perched aquifers. These soils are loess type soils with some intermixed glacial till areas. The drainage pattern and floodplain configuration of Wahoo Creek is primarily composed of silty clay loam that ranges from moderately to poorly

drained.

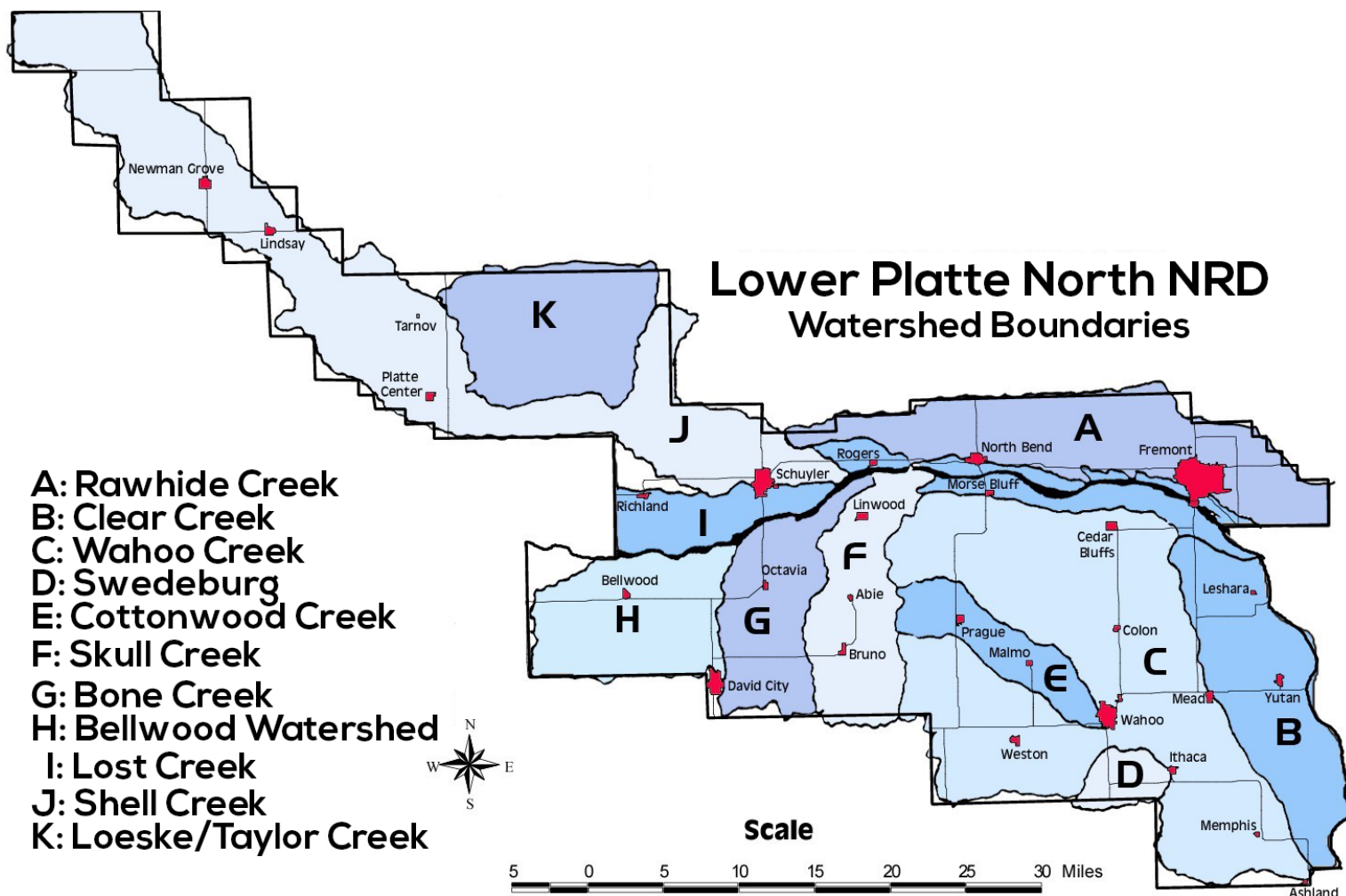
The western portion of the Platte River corridor is made up of alluvial fine sands underlain by sand and gravels. The eastern portion of the corridor is practically the same, however, depth to water in the eastern area is greater. This water line is bounded on the north by poorly drained silty and clayey soils. Areas to the south and a few areas along the western end of the Platte River corridor contain silty soils that are well drained and of loess origin.

The northwest corner of the District is composed of

moderately to well drained silty type soils with permeability ranging from 1 to 2 inches per hour above the areas adjacent to Shell Creek areas in northeast Platte County and have permeability ranges of 1.5 to 5 inches per hour.

Land Use

LPNNRD contains 1,031,000 acres, or approximately 2 percent of Nebraska's land mass. The majority of the land in the district is used for crops (approximately 80 percent). The remaining acres comprise pasture/range, forest and other land.



Projects and Programs

LOWER PLATTE RIVER BASIN

One of the great natural resources of Nebraska is the Platte River. It is the feature that attracted early settlers to our State and guided the wagon trails. Today, we look at the

Platte River much differently. It is a water source for cities like Fremont, Lincoln and Omaha, a haven for wildlife and a place for recreation. Issues surrounding the river are top priority at LPNNRD as approximately 72 miles of it either flow directly

through or border the District. As development along the corridor increases, concerns related to flooding, ice jamming, endangered species and recreation also increase.

SURFACE & GROUNDWATER

One of the Lower Platte North NRD's major responsibilities is to conserve and protect our ground and surface water supplies. To accomplish this goal, the Lower Platte North continues to participate in water quality studies, monitoring groundwater levels, and water resource educational activities. LPNNRD believes that prevention is less costly than correction of groundwater problems. This is why the District has developed a groundwater program emphasizing a protection-based approach rather than a reactive, corrective approach. Data gathered since 1985 indicates areas where groundwater quality conditions have deteriorated beyond those established as health standards. Additional areas show increasing levels of contamination.

Groundwater Management Area (GWMA)

LPNNRD implemented a District-wide Groundwater Management Area (GWMA) on January 1, 1997, to address both water quality and quantity concerns. This action

was based on data gathered since 1985 indicates where groundwater quality conditions have deteriorated beyond those established as health standards, such as nitrate nitrogen. On that date, groundwater quality Phase I (education) regulations became effective for the entire District. One primary rule in Phase I requires certification for fertilizer use. The District has developed a groundwater program emphasizing a protection-based approach rather than a reactive, corrective approach. Since that time, advanced Phase areas have been determined by trigger levels listed in the rules and regulations of the GWMA. The District has two Phase groundwater quality control areas, those being Bellwood and Richland/ Schuyler. The Bellwood Phase 2 Area was established in 2003. This area covers approximately 30 square miles in the western portion of the Platte Valley in Butler County and includes the town of Bellwood. The Richland/Schuyler Phase 2 Area was established

in 2004. In 2015 this area was raised to Phase 3 because of the rising nitrates. This area covers approximately 55 square miles in the Platte Valley of Colfax County and includes the towns of Richland and Schuyler. In 2015, 10 sections north of the Richland/Schuyler Area became a Phase 2 area. Elevated nitrate-nitrogen levels continue to be the major concern in both Phase 2 areas.

In February 2014, the District saw mid-summer declines in the Bruno area and the uplands of Platte and Colfax Counties. These are now designated as the Butler-Saunders and Platte-Colfax Special Quantity Subareas. The District mandated water flow meters, rolling allocations and annual report in these areas starting in 2016.

In June 2018 the District updated it Groundwater Rules and Regulations by adding a Phase Four under Water Quality and managing water by consumptive use or acre feet limitations.

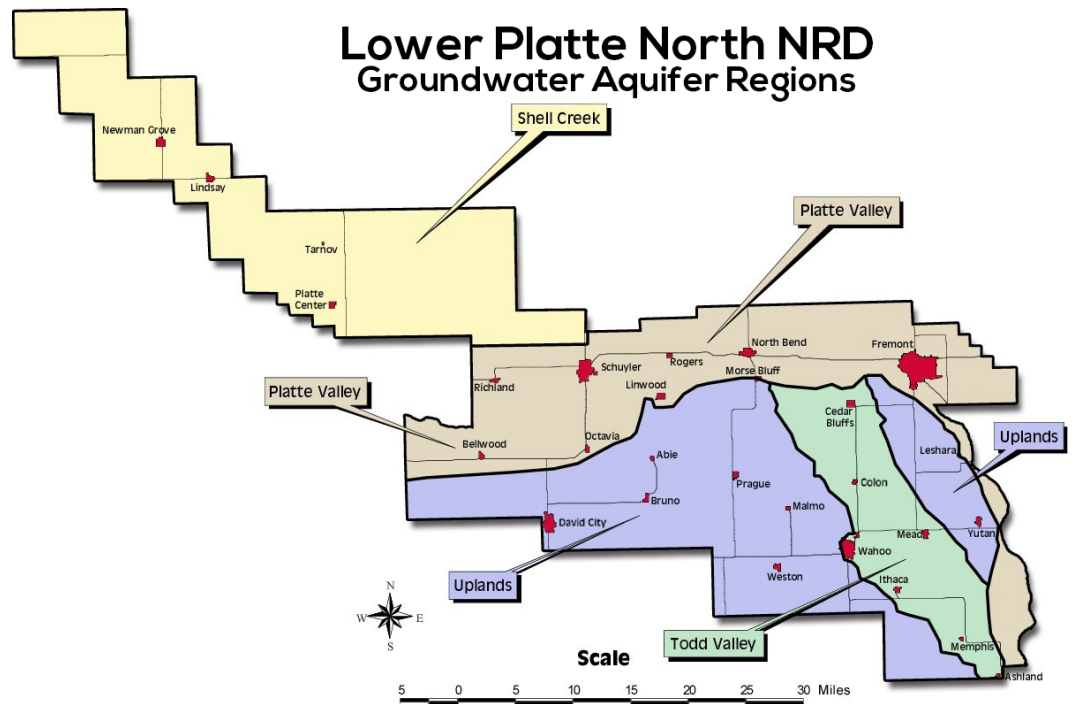


Three NRDs in the Lower Platte Basin LPSNRD, PMRNRD, LPNNRD along LWS, MUD and NeDNR formed a Lower Platte Consortium to develop a drought contingency plan for the Platte River. The Plan should be completed in early 2020. As of January 1, 2019, the District had 4563 active registered irrigation wells and 206 wells in our GWEL network.

Current Rules and regulations of the GWMA are available at LPNNRD headquarters in Wahoo.

Voluntary Integrated Management (V-IMP)

In December 2008, the Nebraska Department of Natural Resources (NeDNR) declared the Lower Platte River Basin as “fully appropriated”. After an intense review of the model that NeDNR used, it was discovered that there were errors that lead to this declaration. NeDNR reversed their preliminary decision in April 2009 and declared that the basin was not fully appropriated at this time. With the passage of LB



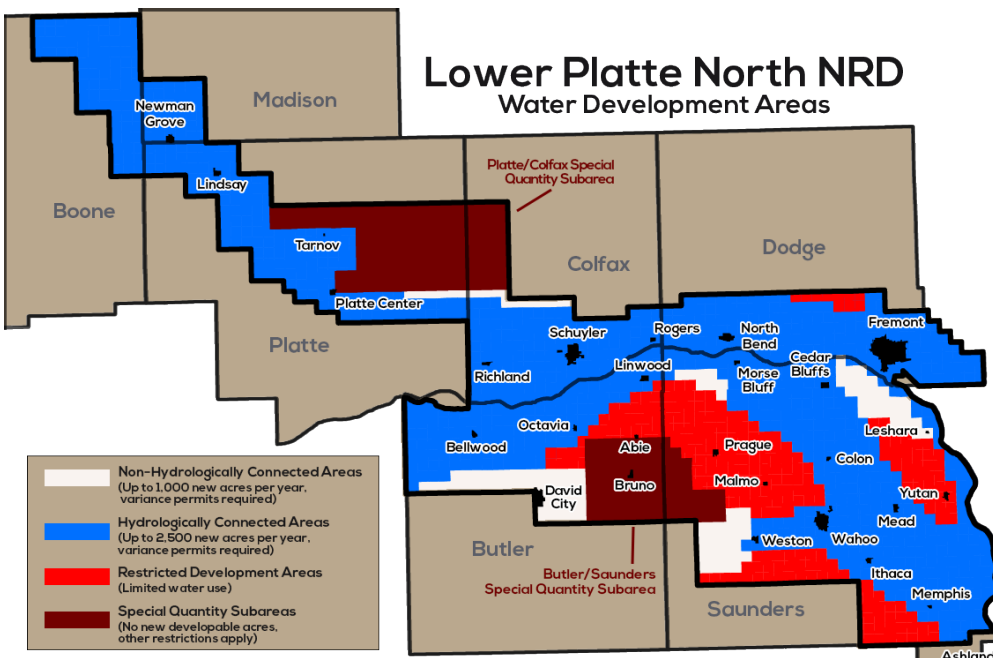
483, the District along with other NRDs have completed rules and regulations, which were approved by NeDNR, to help avoid becoming fully appropriated in future years.

In 2012 seven NRD’s agreed to develop a Lower Platte Basin plan, which is a cooperative agreement for a Basin Plan. This plan was approved in December of 2017 with each district assigned a depletion allotment within the Basin. The allotment is in 5-year increments starting in 2016,

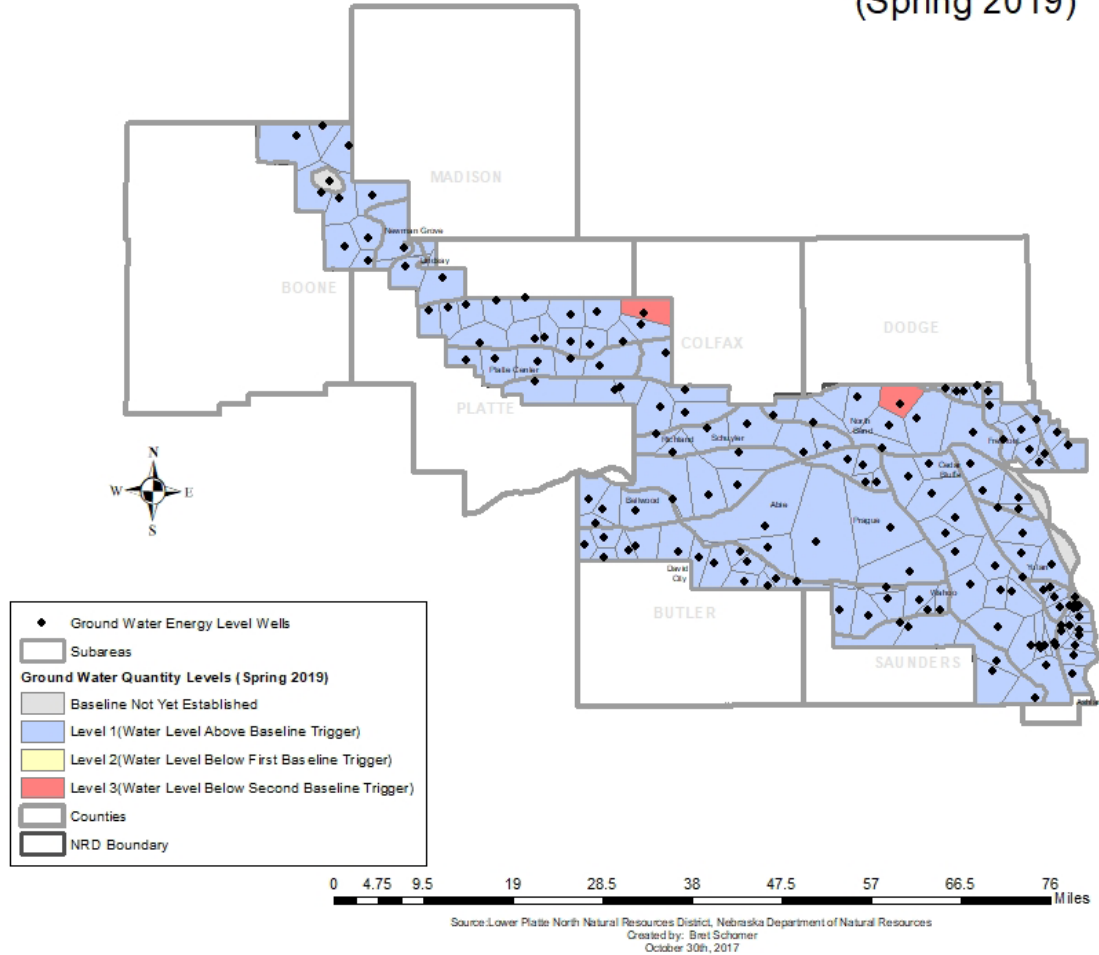
with a formula to determine the acre feet use for new water uses. The District completed its V-IMP in June of 2018 by adding an additional rule of required municipal water use reporting and an annual report to NeDNR.

Groundwater Quality

The Lower Platte North NRD continues efforts to develop a groundwater quality inventory. The District has been divided into four primary aquifer regions: Todd Valley, Platte Valley, Shell Creek and the Uplands, and further divided into 26 subareas. The District’s main focus is on the Statewide groundwater quality network, where staff sample the same 53 wells each summer to determine long term trends for nitrate-nitrogen and pesticides. This information is provided to the Department of Environmental and Energy and the Department in turn provides this to the Nebraska Legislature on an annual basis.



Lower Platte North Natural Resources District Ground Water Energy Level Network (Spring 2019)



The District is in the process of expanding its sampling areas to get more results from different water levels within the aquifer. Certain areas within the District is showing higher levels of contaminants, so more wells need to be sampled for a better understanding of the extent. As emerging contaminants become more prevalent, the District will evaluate the water sampling standard operating procedures.

[Groundwater Energy Level Monitoring Network](#)

One of the responsibilities of Nebraska NRDs is to monitor fluctuations in groundwater levels. With the help of area cooperators, a groundwater

energy level monitoring network has been established in LPNNRD. This monitoring network has been established to obtain a better understanding of the groundwater levels throughout the District. As of June 2019, LPNNRD had 206 wells in the groundwater energy level monitoring network. These wells are monitored each Spring and Fall, with selected wells also measured in late August. The District also has dedicated monitoring wells throughout the district with continuous reading for the purpose of recording groundwater levels throughout the season. This information can be used for management decisions.

The District has also established

with the help of Lincoln Water System (LWS), Metropolitan Utilities District of Omaha (MUD), US Geological Survey, US Army Corps of Engineers, University of Nebraska, Lower Platte South NRD, and Saunders County a network of monitoring wells to track changes in groundwater levels in the Wann Basin area, which is in the Platte River valley north of Ashland. This area has two major municipal well fields (MUD & LWS), and the ongoing clean up efforts of a former ordnance plant south of Mead, Nebraska.

[Chemigation](#)

Chemigation is the practice of applying fertilizers or other

agricultural chemicals to land or crops through an irrigation system. To protect Nebraska's groundwater from possible back-flow of chemicals into irrigation wells, the Legislature enacted LB 284, the Chemigation Act in the 1980's. The Act requires the operator of a chemigation system to obtain a permit prior to use. To obtain this permit, the irrigation system must be properly equipped, inspected, and approved by the NRD before applying any chemicals. As of November 1, 2019, the District had 717 active chemigation sites.

[Decommissioned \(Abandoned\) Wells](#)

Decommissioned (Abandoned) wells are a health and safety concern and have been ruled as illegal by the Nebraska Legislature. It is estimated that there are approximately one thousand improperly abandoned wells within the Lower Platte North Natural Resources District boundaries. A well not used for three consecutive years or one which is no longer useful is considered to be abandoned and needs to be properly decommissioned. LPNNRD offers cost-share assistance to landowners to properly decommission abandoned water wells. Since 1992, the District administered local and state cost-share dollars to decommission approximately 651 wells.

[NeRain](#)

The Lower Platte North NRD is working with all 23 NRDs on a precipitation gauging network, which consists of sites maintained by cooperating landowners.

Precipitation information is useful when merged with other District water programs including: groundwater quality sampling, groundwater energy levels, and surface water/groundwater correlations, among others.

[Registered Wells](#)

The Nebraska Legislature declared that the conservation and the beneficial use of groundwater are essential to the future well-being of the State. State Law requires that all water wells in the State of Nebraska be registered with the Department of Natural Resources. Wells that are not registered are illegal and should be registered as soon as possible. It is estimated that 5% of the total irrigation wells in the District are not registered. As of January 1, 2019, LPNNRD had 4,563 registered irrigation wells in the District.

[Certifying Acres](#)

In July 2009, LPNNRD signed a contract with GIS workshop to develop a GIS database and obtain county assessor records as the preliminary step to certifying acres. Staff then contacted landowners to verify the irrigation status of known parcels. This information provides a true inventory of irrigation in the District, which is an important part of future groundwater management and planning. As a secondary effort to certifying irrigated acres, LPNNRD staff worked with landowners to update their well registration records as required by law. This updated information gives a more accurate assessment of groundwater use throughout the

district.

[Nebraska Ordinance Plant Clean-Up, Mead](#)

During the 1940s, 1950s and 1960s, an Army Ordnance Plant near Mead was used to assemble bombs and store Atlas missiles. Over time, the soil and groundwater at the plant site became polluted with various explosive residues and solvents. The groundwater cleanup has involved modeling efforts to determine the impact of the proposed Omaha Metropolitan Utilities District (MUD) (located in the Platte Valley, two and a half miles northeast of the edge of one of the contaminant plumes) on containment of the contaminant plumes. LPNNRD has and will continue to play a vital role in working with the Army COE, MUD and area landowners to help insure containment of the contaminant plumes and eventual cleanup without severe impact to the underground aquifer supplying the area.

[Wellhead Protection Program](#)

LPNNRD implemented a Wellhead Protection Program (WPP) in FY 2001. The goal of the program is to minimize potential polluting activities on the land surrounding a community's public water supply well(s). The District has identified 22 communities with public supply wells and they have been encouraged to become involved in the program. The LPNNRD has 7 approved WPP plans.

RURAL WATER DISTRICTS

In recent years, the District has worked with communities who have had difficulties with water quality and quantity by forming two rural water systems. The Butler County system linked the village of Bruno, who was having water quality and quantity problems, to David City. The

Saunders County system linked the village of Colon, who was experiencing water quality concerns, to Wahoo. LPNNRD operates both of these systems. The District purchases water from the larger communities and delivers it to the smaller communities. Both systems are designed to serve rural customers along each service route. The



District will address other community water needs on a case by case basis to provide guidance as needed.

GEOGRAPHIC INFORMATION SYSTEMS (GIS)

LPNNRD has been using Geographic Information System (GIS) technology since 1996. GIS is an automated system that combines an information system with mapping capabilities. Features on a map created with GIS technology contain attributes or feature descriptions that are referenced by location. Initially, a series of base maps were created and coverages included counties,

townships, sections, major streams, and major roads with the District. Later, new coverages were generated using Digital Elevation Models (DEM's), Digital Orthophoto Quarter Quadrangles (DOQQ's), and the NRCS Soil Survey, among other sources. The District has incorporated the use of GIS to greatly enhance program and project activities. LPNNRD continues to update and advance GIS use in all district projects. Adding current aerial photography and LiDAR elevation

data allows LPNNRD to assess changes to the landscape over time. The Global Positioning System (GPS), a series of 28 NAVSTAR satellites, provides worldwide positioning and navigation information around the clock. Receivers acquire signals from satellites to determine precise locations on earth. The data obtained from taking GPS positions can be downloaded and mapped with GIS, making the two technologies complementary.

SOIL CONSERVATION

In response to the Erosion and Sediment Control Act (LB 474) passed in 1986, the Natural Resources Commission developed the Nebraska Soil and Water Conservation Strategy, that outlines action for efficiently conserving and managing the State's natural resources. The Lower Platte North

NRD administers the Erosion and Sediment Act and we have patterned our local program after the State's strategy. Strategy objectives include completing 80% of the 1987 land treatment needs by the year 2010 and reduce soil loss on all lands to soil levels ("T") by 2025. While the District has made tremendous progress, it appears that the 2010 goal is not yet obtained.

The District will continue to administer aggressive soil and water programs to one day obtain desired treatment levels. The District presently administers approximately \$375,000 of State, Local and EPA 319 grant funds annually to provide cost-share opportunities to landowners for implementing various soil and water conservation practices.

FLOOD DAMAGE REDUCTION

Watershed projects have been completed in five of eleven sub-watersheds (see map) in LPNNRD

to help control flood water and provide grade stabilization. These completed projects include Clear Creek, Cottonwood Creek, Swedeburg, Rawhide Creek,

Bellwood and the Sand/Duck Creek watershed (Sand Creek Environmental Restoration Project). Priority efforts will continue to accomplish flood

reduction and erosion control/ water quality projects in the Shell Creek, Wahoo Creek, Bone Creek and Skull Creek Watersheds. The District has especially initiated flood reduction efforts in the Wahoo Creek Watershed and in making plans to complete a series of eleven flood reduction dams. The District will also continue efforts with several communities and other entities in repairing damages and looking for flood reduction and drainage improvement solutions due to 2019 flooding. On Federal and State projects where LPNNRD acts as project sponsor, the District obtains land rights and mitigates disturbed areas. LPNNRD is responsible for operation and maintenance activities on sponsored projects after they are built. LPNNRD offers local assistance for the construction of small dams and grade stabilization structures that can help counties and landowners protect county roads, cropland and property from flooding, provide erosion control and obtain water for livestock and wildlife.

[2019 Flood Damage and Drainage Prevention Actions Initiated](#)

During the Spring and Summer of 2019, land, property and infrastructure received substantial damage from record flooding, particularly several areas along the 72 mile stretch of the Platte River that run through or border the LPNNRD. The primary damage was from a combination of snowmelt and rainfall that occurred in March 2019. This had a huge impact on LPNNRD

operations as we began assisting numerous landowners, villages, towns, cities, counties and many other entities on addressing flood damages and repairs. This assistance included District cost share funding assistance, direction toward FEMA/NEMA funding assistance and future flood prevention planning.

The 2019 flooding and resulting damages initiated the formation of the Joint Water Management Advisory Board (JWMAB) in the Spring of 2019. The advisory board is made up of several entities that initially include: City of Fremont, Dodge County, Village of Inglewood, Lower Platte North Natural Resources District, City of North Bend, Cotterell & Diking Drainage District, Ames Diking & Drainage District, North Bend Drainage District, Elkhorn Township, Platte Township, Sanitary & Improvement District #3 (Lake Ventura) and , Sanitary & Improvement District #5 (Timberwood). It is expected that more entities from the lower third of Dodge County may join the Advisory Board over time. The Board has meet regularly in 2019 with one of its first major focuses is seeking outside funding assistance to complete a flood resiliency study of the entire area along the Lower Platte River Basin and identify options for reducing future flood damages. It is expected that over the next ten years and beyond, JWMAB will work corporately together looking for solutions to reduce future flood damages within the lower third of Dodge County. A major priority of JWMAB is to find funding partners to improve flood flows through approximately

50 miles of eleven drainage ditches that were constructed between 1909 to 1929 by the Elkhorn River Drainage District. In 1929, the Elkhorn Drainage District dissolved and turned their assets and property rights over to Dodge County. Little maintenance of the system has occurred since 1929 and there is a glaring need for this system to be improved to handle storm water flowing from the city of Fremont and about 25,000 acres east of Fremont.

[Sand/Duck Creek Watershed Flood Damage Reduction](#)

With the completion of the Sand Creek Environmental Restoration Project (includes Lake Wanahoo, sediment nutrient trap/wetlands components and seven upstream flood reduction/environment enhancement structures), significant floodwater reduction is provided from the 87-square mile Sand/Duck Creek Watershed above Wahoo, Nebraska. At Wahoo, Lake Wanahoo provides 500-year frequency storm flood protection. The seven upstream structures are designed to 200-year storm frequency standard. Lake Wanahoo Components, the Breakwater Structure and the Sediment/Nutrient Trap/ Wetlands Project were completed in 2009. Completion of Lake Wanahoo occurred in 2010 and the upstream structures were completed in 2012.

[Skull/Bone Creek Watershed](#)

In 1986, the Nebraska Natural Resources Commission (NNRC) approved a flood control project in the Skull Creek Watershed

that included three flood water retention structures and a levee system. The District completed one of the three dams, Homestead Lake in 2001, which combines flood water reduction with public recreation in that watershed. Due to the lack of available funding assistance and landowner acceptance, the District was required to delay completing additional structures in the immediate future.

In 2019, a comprehensive Water Quality Plan of the Lower Platte Corridor was completed in cooperation with Lower Platte South and Papio-Missouri NRDs. A primary concern brought up by the study was the prevalence of E. Coli bacteria within the watershed. As overall water quality has become a high priority LPNNRD will look to leverage potential federal and state grant dollars to mitigate water quality issues within these watersheds.

[Wahoo Creek Watershed](#)

In the fall of 1995, LPNNRD submitted a watershed plan to the NRCS for funding through the PL 566 program. This plan included the potential construction of 17 flood control dams in the watershed (included seven dams in the Sand/ Duck Creek Watershed that will be constructed as part of the Sand Creek Environmental Restoration Project). In 2019, the District updated the Wahoo Creek Watershed Plan to include 11 new flood water reduction dams in the lower portion of the Wahoo Creek Watershed. The District received federal (NRCS) and state (NeDNR) to complete three of the eleven structures by 2022 and federal funding to design the remaining

eight dams by 2021. LPNNRD will continue to pursue additional federal and state funding for completing the remaining 8 structures within the next ten to fifteen years.

[Elkhorn Breakout Project](#)

Landowners petitioned LPNNRD in the fall of 1996 to administer an Improvement Project Area (IPA) to reduce flooding on the Elkhorn River, just east and north of Valley, Nebraska. The project, constructed in 1997, was designed to repair and stabilize about a quarter mile of eroded Elkhorn River bank, thus protecting 5,100 acres in Dodge and Douglas Counties. The project keeps water from leaving the river before it reaches a 10-year frequency storm event. LPNNRD continues to administer the IPA and has operation and maintenance responsibilities for the project. Landowners were assessed for a portion of the local project costs and an operation and maintenance fund was established for future project repairs.

[Rawhide Creek Watershed](#)

The Merlon England Flood Control Project, completed in 1994, includes 9 miles of ditch (#8) and a large flood control dam (in the Trouble Creek Watershed). The project was a cooperative effort between the Nebraska Natural Resources Commission, LPNNRD, Dodge County, the City of Fremont and



Shell Creek Watershed Improvement Group

local landowners to protect the City and adjacent landowners from floodwaters from Rawhide Creek. The District has operation and maintenance responsibilities for this project. In 2020, the District will be completing major flood damages to the ditch that occurred from 2019 spring rains and snow melt.

[Western Sarpy/Clear Creek Levee Project](#)

After the 1993 floods, the river reach upstream of Highway 6 in Sarpy and Saunders County was identified for a levee improvement project by the Corps of Engineers and the adjoining NRDs. This 42 million-dollar project included the construction or improvement of nearly 18 miles of levees on both sides of the river, as well as the elevating or removal of impacted cabins. The Papio-Missouri River NRD is the project sponsor of approximately 8 miles of the levee system on the Sarpy County side, and the Lower Platte North NRD, in partnership with the Clear Creek Diking District, is the project sponsor of the Clear Creek Levee on the Saunders County side.

Environmental and wildlife enhancements were a part of

the project. Major construction activities began in 2009 and the project was completed in 2018. However, over the next two years, LPNNRD will be repairing major flood damages to 10 miles of the Clear Creek Levee that occurred from 2019 spring rains and snow melt.

Shell Creek Watershed

Shell Creek has experienced many floods from its tributaries and upstream drainage areas. Several Federal and State evaluations and studies have been completed over the years but no economically viable structural alternative has been identified. In 1999, a locally led landowner group was formed (Shell Creek Watershed Improvement Group). In 2015, the group became an official advisory group to Lower Platte North NRD. With SCWIG advisement, LPNNRD continues to work on priority water quality projects with other partners including the Natural Resources Conservation Service, Nebraska Department of Environmental and Energy, Nebraska Environmental Trust, University of Nebraska Extension Service, Newman Grove Shell Creek Science Club and area landowners to promote

and fund the application of best management conservation practices in the watershed. The results of this effort became evident in 2018, when Shell Creek was the first watershed in the nation to be de-listed from EPA's 303 (d) list for atrazine contamination. The District will continue to partner with SCWIG, Counties, Communities and landowners in the watershed to improve water quality, reduce erosion and flood damage to roads, facilities, and adjacent land.

Operations and Maintenance

LPNNRD completes inspections on more than 45 watershed flood protection structures and special projects located throughout the NRD. These inspections help detect problems that can be corrected before they become serious. Annual maintenance includes controlling noxious weeds, debris removal, fence repair, structural and erosion repair.

As a result of the 2019 flooding, LPNNRD experienced much damage to our sponsored projects most notably in Saunders and Dodge Counties. Major

damages occurred to the Clear Creek levee which had one major breach and loss of the project fuse plug which is a safety valve at the lower end of the levee system located on the Army National Guard property. There were 31 total areas identified that need at least some measure of repair that LPNNRD has addressed with the United States Army Corps of Engineers (USACE). The 10 miles of the Clear Creek Levee is LPNNRD's portion of the Western Sarpy Clear Creek Levee system that was completed in 2017 with assistance from the USACE and the Nebraska Department of Natural Resources at a total project cost of approximately \$42 million.

LPNNRD has also initiated flood damage repairs on several other LPNNRD sponsored projects that include: Rawhide Ditch No. 8 (Part of Merlon England Project Flood Control Project, Dodge County); Lake Wanahoo Breakwater (repairs completed in 2019) & Wanahoo's Stilling Basin below the dam embankment outlet. These repairs have been coordinated with FEMA/NEMA to obtain emergency funding assistance as flood damage repairs are completed.

FORESTRY, RANGE, & WILDLIFE HABITAT

The District administers and promotes several programs such as the Tree Planting Program, the Soil and Water Conservation Program, and Wildlife Habitat Programs designed to enhance the development of forestry, range, and wildlife lands in the

District. The District also sponsors educational activities such as Range Judging and Land Judging contests, and other school oriented activities.

Tree Program

One of the most visible and popular programs offered by LPNNRD is the District's tree planting program. As a direct

result of this program, which started in 1973, nearly 825,000 trees and shrubs have been planted in the District. Trees and shrubs may be obtained from the NRD for farmstead windbreaks, livestock protection shelter belts, wildlife habitat, woodlots, and Christmas tree plantings. Besides providing a planting service, the NRD also designs tree planting

plans and offers technical advice for ground preparation for tree sites. The Community Tree program also assists District communities, churches, schools and other special interest groups with tree establishment.

Wildlife Habitat Improvement

In cooperation with the Nebraska Game and Parks Commission, LPNNRD administers the WILD NEBRASKA Program which pays landowners to set aside cropland and technical assistance to improve lands for wildlife. Under this program, LPNNRD has signed

up wildlife habitat acres that allow public access for hunting, hiking and other recreation opportunities. LPNNRD also assist Pheasants Forever with their Corner For Wildlife Program in enhancing wildlife habitat. The District will consider assisting other federal programs in the development of wildlife habitat.

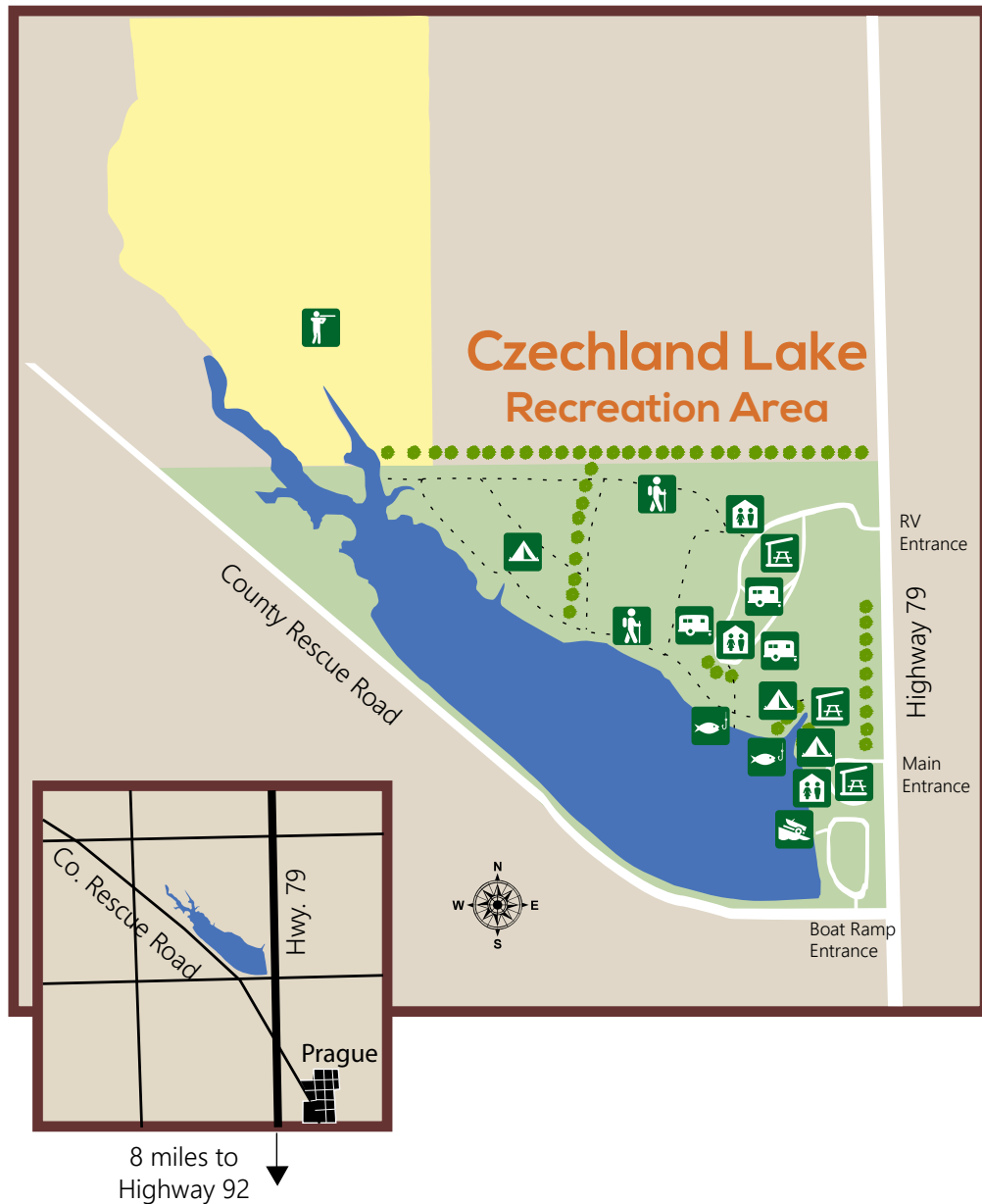
RECREATION

Czechland Lake Recreation Area

Czechland Lake Recreation Area, is a multipurpose project

that combines flood control, recreation and education as the main benefits brought to the District with the construction of this project. Located one mile north of Prague, Nebraska

on Highway 79, this recreation area is conveniently located to Omaha, Lincoln, Fremont and Wahoo. The 85-surface-acre lake is situated on 290 acres of public access land, operated





and maintained by LPNNRD. Originally built as one of twelve flood water structures in the Cottonwood Creek Watershed, Czechland Lake has developed into one of the areas most popular recreation spots in the District. Funding for the project was shared by the Nebraska Natural Resources Commission, Saunders County, USDA Natural Resources Conservation Service and LPNNRD. Grant monies from the U.S. Environmental Protection Agency and Nebraska Environmental Trust have been used to reduce non-point source pollution entering the lake and to provide educational resources.

Homestead Lake Recreation Area

Homestead Lake, completed in 2001, combines flood water reduction with public recreation near the town of Bruno, Nebraska. The 37-surface-acre reservoir, situated on 160 acres

of public lands, is open to the public for fishing, picnicking, no-wake boating, and other outdoor activities. Funding partners for the various project components and watershed treatment was shared by the Nebraska Department of Nebraska Natural Resources, Nebraska Environmental Trust, Butler County, Nebraska Game & Parks Commission, USDA Natural Resources Conservation Service and LPNNRD.

Lake Wanahoo NRD Recreation Area

With the completion of the Lake Wanahoo (Sand Creek Environmental Restoration Project) public recreation has been developed as a project component in and around this 662-acre reservoir. The lake is situated on approximately 1,777 acres of public lands for fishing, picnicking, no-wake boating, and other outdoor activities.

LPNNRD took over the operation and management of the park from the Nebraska Game & Parks Commission in 2019. Additional recreation components have been developed, including Pork Chop Island camping, a Nature Education Trail & Disc Golf Course, an Education Building, and a bird/wildlife viewing platform.



DRAINAGE IMPROVEMENT & CHANNEL RECTIFICATION

LPNNRD provides financial and technical assistance for drainage improvement and channel rectification when it is determined that a project provides public benefit and is sponsored by a county, community, drainage district or other entity. Within this policy, the District has partnered on many such drainage and channel projects that provide benefit to the general public. While the District does not participate with private drainage improvements, it does offer cost share assistance to landowners for river and creek bank stabilization through a Rock and Jetty Program. As a result of the 2019 flooding, it is anticipated that LPNNRD will be involved working with various entities and landowners on flood damage repairs for the next several years.

Central Butler Northwest Drainage Project

Since the 1970's LPNNRD has partnered with David City, Butler County and the Upper Big Blue NRD (UBBNRD) on projects to reduce flood damages in the area. The first project, the Central Butler Project, was completed in the late 1970's. This project involved channel improvement several miles downstream of David City to the south that drains southwest to a large flood control impoundment structure (Struebing Dam) located in the Upper Big Blue NRD. In 1997, the NRD's and Butler County completed the first phase of the David City Northwest Drainage Project. This phase redirected 330 acres that had been once draining south to David City, back to its natural northwest drainage course. Phase I also included the construction of a temporary

detention dam located 12 mile northwest and improved one mile of existing ditch east of the dam to improve flows. In 2012, LPNNRD, UBBNRD and David City partnered together to complete Project Phase II, which improved channel flows and reduced flood damage from about 200 acres north of the City and safely route them west and south of the City.

Rock & Jetty Program

This LPNNRD program offers cost-share assistance to landowners to construct erosion control devices for streambank stabilization and to assist Dike and Drainage Districts with maintenance of dikes along the Platte and Elkhorn rivers and perennial streams. With the result of the March 2019 flooding, the District will enhance its financial assistance to landowners and Dike & Drainage Districts.

WASTE DISPOSAL & POLLUTION CONTROL

In the 1990's vast changes occurred in Nebraska's solid waste regulations. Prior to that time, garbage and other waste in LPNNRD were disposed of

in a variety of ways including burning, unauthorized "dumps", and landfills lacking in proper design and operation. In order for a landfill to operate it must be approved by the State and receive a permit. While LPNNRD does not operate community

waste disposal facilities, there is one permitted landfill in the District near David City. LPNNRD projects and programs all focus on reducing pollution to our surface and groundwater resources.

INFORMATION & EDUCATION

A major responsibility of the Lower Platte North NRD is to keep the public aware of the district's various programs and projects, and to inform and educate youth and adults about natural resources conservation.

LPNNRD accomplishes this through education programs and contests, printed publications, website management, videos, social networking platforms, and special events.





LOWER PLATTE NORTH
Natural Resources District

MASTER PLAN GOALS & OBJECTIVES

2019-2029

The following goals and objectives are considered of equal importance to the Lower Platte North NRD and are not listed in any order of priority.

LOWER PLATTE RIVER BASIN

Goal:

Protecting Lives, Protecting Property and Protecting the Future by Wise and Proper Development Within the Lower Platte River Basin

Objectives:

1. Continue to work with counties, communities and all landowners in the Platte River Basin to insure the wise use and proper development of the river corridor.
2. Promote, encourage, educate and partner with all District residents and entities to use wise floodplain planning and management.
3. In cooperation with PMRNRD, LPSNRD, and Sarpy, Cass, Douglas, Saunders, Dodge, Colfax, Platte, Butler, Saunders, and Lancaster Counties to continue to actively support the Lower Platte Weed Management Area in controlling noxious weeds along the lower Platte River.
4. Support the Nebraska Land Trust in acquiring easements for the protection and preservation of quality lands.
5. In cooperation with PMRNRD, LPSNRD, and Saunders, Cass, Douglas, & Sarpy Counties to continue to actively support the Ice Jam Agreement and assist in protecting land, infrastructure and lives from ice induced flooding.
6. Continue to be an active partner with the Joint Water Management Advisory Board for achieving flood reduction and drainage improvement solutions.

WATER QUALITY, QUANTITY, & RURAL WATER

Goal:

Protect and Enhance Ground and Surface Water Supplies for Domestic, Agricultural and Industrial Uses within the District

Objectives:

1. Protect and enhance groundwater quality and quantity through implementation of the District's Groundwater Management Area Rules and Regulations.
2. Protect surface water supplies through accomplishing objectives and priorities as outlined in the District's Erosion & Sediment Control Plan and the District's Soil and Water Conservation Program.

3. Maintain and expand as needed aggressive groundwater quality and quantity monitoring programs.
4. Implement the District's water quality goals and objectives as outlined in the EPA/NDEE Water Quality Watershed Implementation Plans.
5. Protect and enhance public water supplies through use of education and water conservation practices.
6. Maintain existing rural water systems with Colon-Wahoo and Bruno-David City and to direct them toward self-sufficiency.
7. Work with landowners to properly register and GPS all high capacity wells in the District.
8. Partner with the Nebraska Department of Natural Resources and partnering NRDs to manage groundwater and surface water resources by accomplishing goals and objectives as identified in the Lower Platte River Basin Management Plan, LPNNRD's Voluntary Implementation Management Plan, and the Lower Platte River Drought Contingency Plan.
9. Promote and actively pursue the proper application of fertilizers and pesticides.
10. Achieve 100% compliance on the proper use of chemigation through inspections, permits and training.
11. Assist landowners, communities, counties and other entities to locate and properly decommission all abandoned wells within the District.
12. Continue to monitor and provide technical assistance on groundwater clean up efforts by the Army COE at the Former Ordnance Plant at Mead, Nebraska.
13. Continue to support and develop groundwater modeling and assessments to accurately define District groundwater aquifer boundaries and supplies.
14. Work with communities to become involved in the Wellhead Protection Program within their boundaries including their one or two mile zoning jurisdiction.
15. Continue to develop and enhance GIS and GPS tools for the District, District Partners and general public use.
16. Continue to certify all new irrigated acres within the District.
17. Continue NRD certification classes for all major water users and fertilizer users in the District.

SOIL CONSERVATION & SEDIMENT MANAGEMENT

Goal:

Protect the Future by Conservation of Our Soil Resources

Objectives:

1. Work toward achieving all objectives as outlined in the District's Erosion & Sediment Control Plan and the District's Soil and Water Conservation Program.
2. Reduce sediment damage to lakes, rivers, creeks and streams through the administration of local and state soil and water conservation programs and by partnering with other agencies that administer conservation programs. Continue working with NRCS and NDEE to utilize high priority status within selected watersheds to implement wide variety of BMPs utilizing both local and federal funds.

3. Achieve and maintain a minimum of 75% land treatment (to soil replacement levels) in watersheds above planned and existing District floodwater reduction structures and above the District's cost share sites for small dams and grade stabilization structures.
4. Continue to work with and utilize Sediment and Erosion Law (LB 474) to work with individual landowners to implement BMPs on ground that is adversely affecting neighboring land.
5. Assist all District landowners, communities, counties, locally led conservation groups and other entities in using GIS technology, soil surveys, and environmental suitability assessment information for sustainable and proper land use.
6. Partner with all counties to implement grade stabilization practices within the District.

FLOOD DAMAGE REDUCTION & DRAINAGE IMPROVEMENT

Goal:

Protect Lives and Property by Reducing Floodwater Damages on Private and Public Lands

Objectives:

1. Continue with high priority land treatment practices as set forth in the District's Soil and Water Conservation Program to reduce flood water flows and related erosion damages.
2. Continue to partner with NRCS, Saunders County, City of Wahoo, Village of Weston and landowners to implement Wahoo Creek Watershed Flood Reduction Plan resulting in the construction of eleven flood reduction dams throughout watershed.
3. Partner with all counties, communities and other entities to implement grade stabilization practices within the LPNNRD.
4. Continue the partnership with the Joint Water Management Advisory Board in developing a plan to work together in implementing solutions to reduce future flood damages and improve drainage within Dodge County and drainage problems east of Fremont.
5. Through the District's All Hazard Mitigation Plan, partner with District communities, counties and other entities to identify and reduce flood damages identified as a natural disaster concern.
6. Continue to actively pursue partnerships with Federal, State and Local entities to identify, fund and implement cost effective flood protection measures in the Shell Creek, Bone Creek, Skull Creek and other watersheds as opportunities arise.
7. Support efforts of the Shell Creek Watershed Improvement Group and its efforts at reducing flood damage and increasing water quality throughout the watershed.
8. Budget required staff time and funds to properly operate and maintain completed flood control projects sponsored by LPNNRD.
9. Work through the Joint Water Management Board to explore options and secure funding assistance for improving the drainage ditch system east of the City of Fremont.

Goal:

Protect the Future by Properly Maintaining LPNNRD Property and Projects.

Objectives:

1. Continue to work with USACE, FEMA/NEMA, local entities and landowners to complete timely repairs of District sponsored projects damaged by the 2019 flooding.
2. Enhance the effective life on District owned property and sponsored project areas through regular inspections and provide required operation and maintenance in a timely manner.
3. Design and construct projects and develop property to minimize and facilitate operation and maintenance requirements.
4. Budget funds annually to efficiently care for District property and project areas.

FOREST, GRASSLAND, & RANGE MANAGEMENT

Goal:

Protect the Future by Enhancement of Forests, Grasslands and Rangeland.

Objectives:

1. Promote and assist landowners, communities and all other entities with conservation tree and shrub planting.
2. Promote and assist landowners with proper management of forests, grassland and rangeland.
3. Develop and showcase positive examples of forest and grassland management on District owned property and by partnering with other entities on other public lands.

FISH & WILDLIFE MANAGEMENT

Goal:

Protect the Future by Enhancement and Management of Fish and Wildlife Habitats

Objectives:

1. Encourage landowners to maintain, enhance and develop aquatic and wildlife habitats on private lands through available assistance programs.
2. Maintain, enhance and develop aquatic and wildlife habitats on public lands in cooperation with Local, State and Federal entities.
3. Promote wise irrigation and water management to provide adequate stream flow for animal and aquatic habitat.

Goal:

Develop & Maintain Public Recreation Facilities

Objectives:

1. Operate, maintain and improve Czechland Lake, Homestead Lake, and Lake Wanahoo Recreation Area's for public use and consider the development of new areas as opportunities arise.
2. Partner with other entities in acquiring and protecting areas of historical, educational and recreational value to ensure their preservation for future public use and enjoyment.
3. Assist in the continued development of public access areas along the Platte River as needs arise.
4. Through use of available Local, State and Federal soil and water conservation programs reduce and prevent pollution that could harm aquatic life and recreational activities.

INFORMATION & EDUCATION

Goal:

Enhance public knowledge and education on the importance of natural resource stewardship through aggressive information and education efforts.

Objectives:

1. Provide special presentations and learning opportunities for LPNNRD Directors to inform and educate on district programs, projects, and activities.
2. Provide youth and adults with programs, presentations, and events to educate on natural resources conservation.
3. Utilize various print and non-print platforms to inform the public on LPNNRD programs and projects.
4. Conduct public informational meetings as needed on projects and programs.