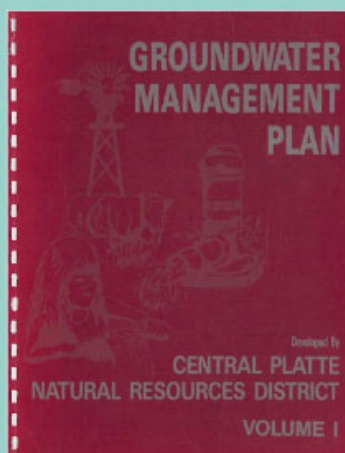


Long Range Implementation Plan

For Fiscal Years 2023-2028

ORIGINAL
1985



ORIGINAL PLAN AND SCIENCE - DRAMATIC
IMPACT TO THE AQUIFER THROUGH 2020

GROUND WATER MANAGEMENT PLAN
UPDATE

2023

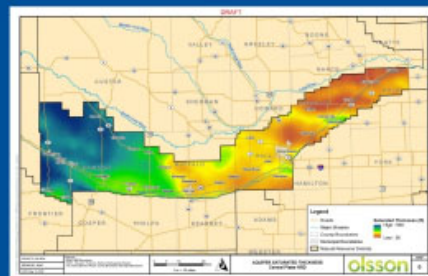


TABLE OF CONTENTS

I. DISTRICT AUTHORITY

District Description	3
Administration/Responsibilities	3
Board and Staff	5, 7
NRD Projects by Authorities	8

II. FLOOD CONTROL/DRAINAGE

Projects Completed	10
Projects Under Maintenance	11
Under Construction/Planning	17

III. SOIL CONSERVATION/EROSION

Cost-Share Programs: NRD/NRCS	20
Grants/Partnerships	21

IV. WATER QUALITY

Quality Management	24
Irrigation Rules & Regulations	25
Projects & Research - University	27
State/CPNRD Programs	29

V. WATER QUANTITY

Management Plan Development	32
Management Plan Update (2023)	33
Groundwater Levels	34
Irrigation Management	35
Basin/State Management Plans	37
Quantity Programs & Projects	43
Data Collection	45

VI. FISH & WILDLIFE HABITAT

Platte River Recovery Program	47
State/Basin Coalitions	48
Instream Flow Rights	50

VII. FORESTRY MANAGEMENT

Tree & Weed Barrier Programs	53
------------------------------	----

VIII. RANGE MANAGEMENT

Rangeland/Prescribed Fire Programs	55
------------------------------------	----

IX. OUTDOOR RECREATION

NRD Trails and Projects	58
-------------------------	----

X. POLLUTION & SOLID WASTE

Air and Land Quality	61
----------------------	----

XI. INFORMATION & EDUCATION

Information Programs	62
Education Programs	63

FIGURES

FIGURE 1. 23 Natural Resources Districts	3
FIGURE 2. Areas of Responsibilities	4
FIGURE 3. Counties in the CPNRD	4
FIGURE 4. Municipal Populations	5
FIGURE 5. Sub-District Boundaries	5
FIGURE 6. CPNRD Board of Directors	6
FIGURE 7. CPNRD Staff	7
FIGURE 8. Cost-Share Programs	20
FIGURE 9. Irrigation Rules & Regulations	25
FIGURE 10. Quality Management Phase Areas	26
FIGURE 11. Chemigation Report	29
FIGURE 12. Mean Saturated Thickness Map	32
FIGURE 13. Groundwater Levels	34
FIGURE 14. Stream Depletion Estimates	38
FIGURE 15. Tree/Weed Barrier Sales	53

APPENDICE

Staff Time Requirements	66
2023 and 2024 Fiscal Budgets	67

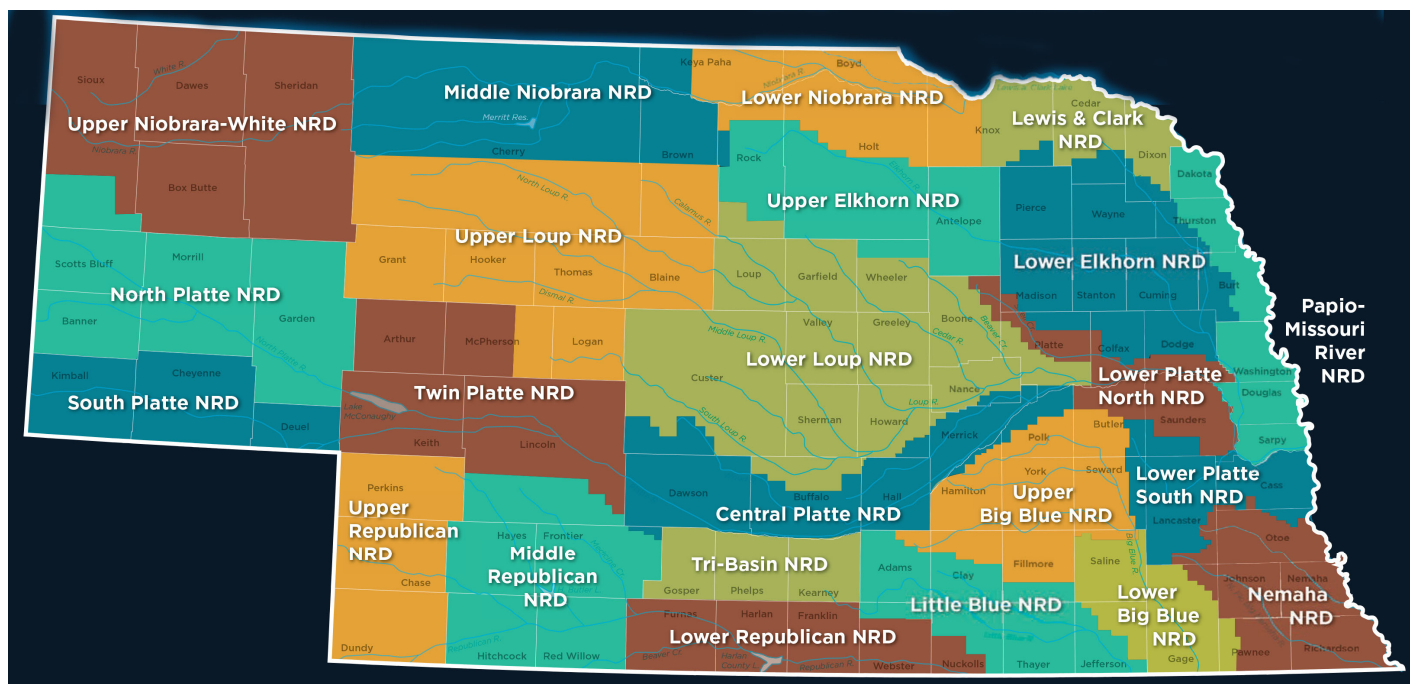
I. District Authority

This Long Range Implementation Plan is developed by the Central Platte Natural Resources District to meet the requirement to prepare and adopt a long range implementation plan under the Nebraska Natural Resources District Act of Neb. Rev. Stat. §2-3277. The Plan summarizes district activities and includes projections of financial, manpower and land right needs of the district for the next five years. For planning purposes, areas of responsibilities are consolidated under the act into the nine categories listed in *FIGURE 2. Central Platte NRD's Consolidated Areas of Responsibilities* on Page 4. The Act requires a Comprehensive Master Plan to be updated every ten years, CPNRD's Master Plan for 2021-2031 was adopted in December 2021. The NRD is required to prepare and adopt individual project plans necessary to carry out projects approved by the district. If the project plans involve state regulations or state financing, they must be filed with the appropriate agency in accordance with state law that specifies the powers and authorities to be exercised by NRDs in fulfilling their purposes of developing and executing the plans, facilities, work and programs relating to the topics.

Fertile soils and abundant water come together in the District to provide a productive union that multiplies their values, resulting in the extensive agricultural production upon which the economy of the Central Platte Valley is built. As use of our resources increases with growing population and desire for a quality life, we need to ensure that the use is wise, efficient and non-destructive. Regardless of what we may think or desire, there are limits to our resources. The plan is designed as a flexible guide to outline the orderly development, management, preservation, utilization and conservation in order to best serve the people of the district and the state.

While complying with statutory requirements, this document is also designed to allow the public to understand the needs and goals of the NRD in order to make informed decisions as to the advisability of the projects and programs planned by the district. The District's planning relies to some degree on the input of other agencies, organizations and individuals. Public information meetings are held periodically and comments from hearings held are considered in the planning process. Representatives from outside agencies and from other local governments are included in the board's committee process whenever it is appropriate.

FIGURE 1. Nebraska's 23 Natural Resources Districts (NRDs)



Administration When Nebraska joined the Union in 1867, natural resources issues were treated as issues of property and often pitted neighbor against neighbor, so the Nebraska Legislature was asked to provide solutions to specific problems. The Legislature usually responded by creating a special-purpose governmental unit that could resolve an issue, but often without sufficient authority or funding to provide effective long-term solutions. By the late 1960s, Nebraska had over 500 special purpose districts including: irrigation, drainage, soil conservation,

watershed, rural water, watershed improvement boards, reclamation, sanitary improvement districts and sanitary drainage districts. In addition, state agencies were empowered to deal with some natural resources issues. The solution was for the state to create a unique system of natural resources districts (local government districts) that could deal with a wide variety of natural resource-related problems and opportunities. In 1972, 24 NRDs (now 23) were established to replace 154 special purpose districts. The designated Mid-Platte East NRD covered portions of the Platte Valley that were being served by four watershed districts and several Soil & Water Conservation Districts in an 11-county area. One of the first acts by the district's board of directors was to change the NRD's name to the Central Platte Natural Resources District. The city of Grand Island was selected as the headquarters.

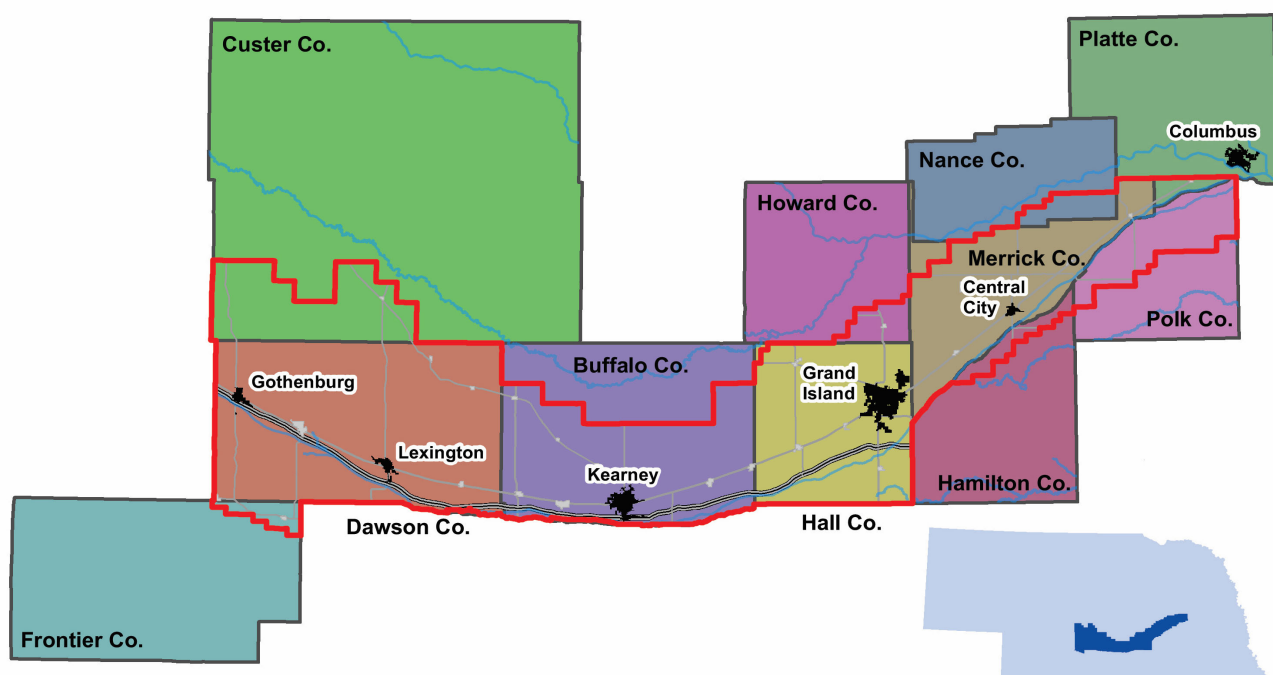
FIGURE 2. Central Platte NRD's Consolidated Areas of Responsibilities

1. Soil conservation and erosion control.
2. Flood prevention, control and channel rectification.
3. Drainage.
4. Groundwater, surface water and water supply.
5. Water quality, pollution control, solid waste disposal and sanitary drainage.
6. Fish and wildlife habitat.
7. Forestry management.
8. Recreation and parks.
9. Range management.

District Location Central Platte is one of 23 natural resources districts in Nebraska. It lies in the south central part of Nebraska, straddling the Platte River. There are 2,136,304 acres in the district. CPNRD extends 175 miles from the Lincoln-Dawson county line on the west near Gothenburg, to Hwy 81 on the east near Columbus. In 2001, 38 square miles of Frontier County (originally in CPNRD) were added back to the District after a petition request from landowners and transfer approval from the Secretary of State.

Counties Eleven counties have land included in the district. All of Dawson County and parts of Frontier, Custer, Buffalo, Howard, Hall, Nance, Merrick, Hamilton, Platte, Polk. Bordered by Lower Loup, Lower Platte North, Upper Big Blue, Little Blue, Tri-Basin, Middle Republican and Twin Platte NRDs.

FIGURE 3. Counties in Central Platte NRD (red boundary)



Population 2020 Census population data determined the municipal population increased from 111,125 in 2010 to 119,775 in 2020. The rural population fluctuated with 13 of the communities seeing a decrease and 12 seeing slight increases. All three urban communities had increases. Nebraska's population increased from 1,826,341 to 1,961,504.

First Class 3 cities with populations of more than 5,000/less than 100,000: Grand Island, Kearney, Lexington.

Second Class 9 cities with populations of more than 800/less than 5,000: Central City, Cozad, Gibbon, Gothenburg, Wood River

Second Class opting classification as a Village: Cairo, Doniphan, Elm Creek, Shelton

Villages: 18 villages with populations under 800: Alda, Amherst, Archer, Chapman, Clarks, Duncan, Eddyville, Eustis, Farnam, Hordville, Miller, Oconto, Odessa, Overton, Riverdale, Silver Creek, St. Libory, Sumner

FIGURE 4. Municipal Populations in the Central Platte NRD (Based on 2020 U.S. Census)

Grand Island 53,131; Kearney 34,293; Lexington 10,348; Cozad 3,988; Gothenburg 3,478; Central City 2,934; Gibbon 1,878; Wood River 1,172; Shelton 1,034; Elm Creek 979; Doniphan 809; Cairo 822; Alda 647; Overton 607; Duncan 392; Eustis 389; Clarks 344; Silver Creek 320; Chapman 260; Sumner 252; Riverdale 247; St. Libory 241; Amherst 201; Farnum 182; Hordville 131; Oconto 138; Miller 129; Eddyville 97; Odessa 57; Archer 45

RURAL POPULATION: 25,080

URBAN POPULATION: 119,775

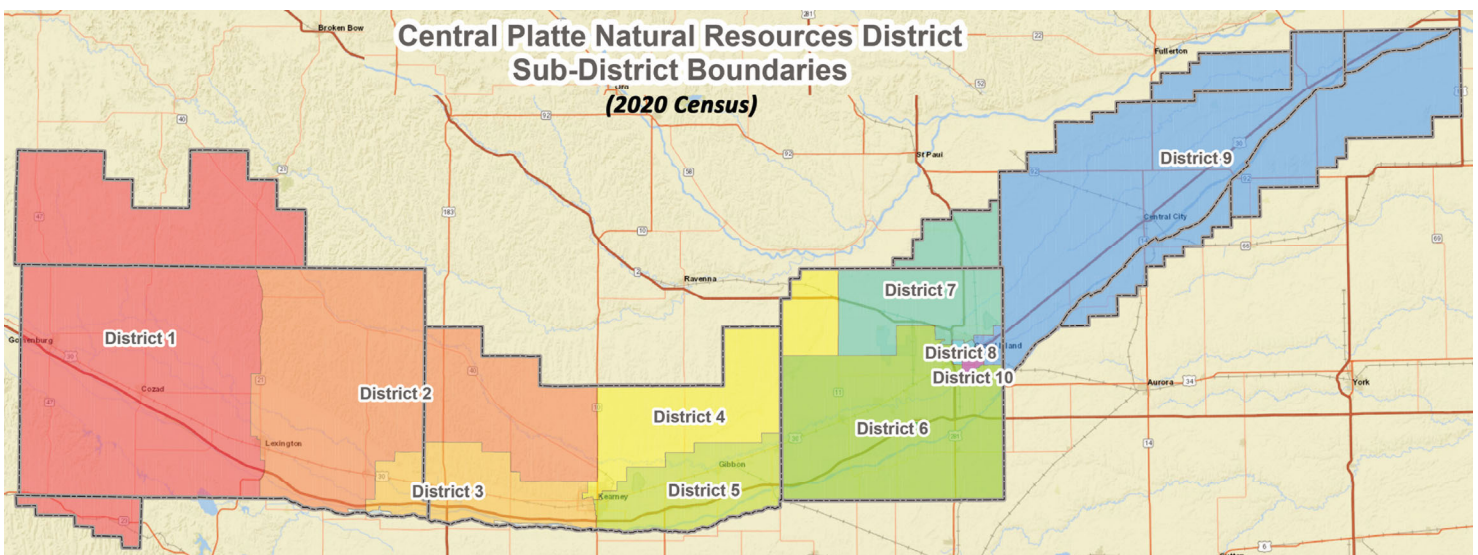
DISTRICT TOTAL: 144,855

Board of Directors

The Board of Directors is elected to protect and preserve the wide scope of natural resources within the district. CPNRD has 21 directors each serving a four-year term. Two directors serve in each of the 10 sub-districts and one director serves as the at-large member. Directors in the same subdistrict are elected in alternate election years. Directors serve on two of the following committees: Water Quality, Water Utilization, Eastern Projects, Western Projects, Programs and Variance/Appeals. In 2022, the Subdistrict Committee met to discuss composition of the Board of Directors. The committee concluded the 21-member size board is adequate in providing direction for the budget and the various projects and programs throughout the District.

Modifications were made to voting subdistricts in 2021 to meet the requirement that each subdistrict is substantially equal in population; which averages 14,486. CPNRD's directors remained in their previous subdistrict.

FIGURE 5. CPNRD Sub-District Boundaries (as of 2021)



See 2023 Board of Directors on Page 6

FIGURE 6. Board of Directors

The board of directors is elected to protect and preserve a wide scope of natural resources within the district. There are 21 members, each serving a four-year term. CPNRD's board consists of one at-large member and two directors in each Subdistrict - who are elected in alternate election years.

SUBDISTRICT BOARD MEMBERS CHAIR/DELEGATE POSITIONS

At-Large Keith Ostermeier, Grand Island (Treasurer)

- | | |
|--|---|
| 1. Jay Richeson, Gothenburg
Brian Keiser, Gothenburg | 6. Jerry Milner, Grand Island
Mick Reynolds, Wood River (Chairman) |
| 2. Dwayne Margritz, Lexington
Tom Downey, Lexington | 7. Jerry Wiese, Grand Island (Vice-Chairman)
Ed Stoltenberg, Cairo |
| 3. Marvion Reichert, Elm Creek (Secretary)
Steve Sheen, Kearney | 8. Todd Arends, Grand Island
Alicia Haussler, Grand Island |
| 4. Lon Bohn, Gibbon
Ryan Kegley, Kearney | 9. Ed Kyes, Central City
Doug Reeves, Archer |
| 5. Deb VanMatre, Gibbon (NARD Board)
Mike Wilkens, Gibbon | 10. Chuck Maser, Grand Island
Barry Obermiller, Grand Island |

Land Use

CPNRD's land use includes cropland, pastureland, rangeland, some woodland and other minor cover, urban and residential development, streams and other water, and transportation. The majority of the irrigation in the NRD uses groundwater, which, in the western part of the District comes from the Ogallala Aquifer and in the eastern part of the District comes from Pleistocene (Wisconsin) sands and gravel. Groundwater is also the major source of drinking water in the District.

Topography

The broad Platte River valley has lowlands, loess hills, dissected plains and sandhills. In the western part, the upland tablelands merge into the rolling loess hills, which in turn drop into the flat lowlands of the valley. These lowlands, in some areas, consist of several flat terraces with relatively steep slopes between the terraces. The dissected plains and loess hills have a very well developed drainage pattern that discharges onto poorly drained flat valley lands. The valley is broad through the central portion and the drainage pattern becomes less well developed toward the eastern end of the district.

The Platte River is an important feature of the district. It's also the largest river in the state, traversing the entire length of the state from west to east and serving as a major tributary to the Missouri River. With origins in Colorado, the Platte is formed by two branches, the North and South Platte, converging near the city of North Platte. While there are some minor tributaries in the NRD that flow into the Platte, the major tributaries of the Loup and Elkhorn rivers, join the Platte east of the District. The Platte River is too shallow for navigation and is used primarily for irrigation, recreation, generation of hydroelectric power and as habitat for wildlife.

River System

The river system within the NRD includes 205 miles of the Platte River, 49.9 miles of the North Channel and 173 miles of the Wood River.

Congressional District

The entire district is located within the Third Congressional District.

Court Districts

4 county court judicial districts and four district court judicial districts serve portions of CPNRD.

Nebraska Legislative Districts

In September 2021, the Nebraska State Legislature approved a new state legislative map. The following changes are a result of the updated map and will take effect for 2022 legislative elections.

Districts 22, 24, 34, 35, 37, 41, 43, 44

Department of Roads

Parts of the NRD lie within 4 of the 8 Field Districts: 3, 4, 6, 7

Public Service Commission

Parts of the NRD lie within 3 of the state's 5 Districts: 3, 4, 5

Nebraska Game & Parks Commission

Parts of the NRD are within 4 of the state's 7 Districts: 3, 4, 5, 6

Agriculture

Largest industry within the NRD, as well as the entire state. Major crops grown include corn, soybeans, alfalfa and wild hay. Livestock raising is prominent featuring cattle, hog and turkey operations along with some chickens, dairy and sheep. Livestock feeding operations are scattered throughout the District. Many of the NRD's industries are related to agriculture, which is important in generating income for the state's (and NRDs) largest economic sectors: service, government and manufacturing. Tourism also plays a role in the NRD's economy.

Education

Education is an important aspect for the population of the NRD including 2 community college areas, 4 Educational Service Units (ESU 7, 9, 10, 11). Branches of the Universities and Central Community Colleges exist at Kearney and Grand Island, with off-campus centers in many communities within the NRD.

Central Platte NRD Staff

The NRD's general manager is responsible for hiring and management of employees. The first general manager was Ron Bishop. Lyndon Vogt was hired in June 2013 when Bishop retired. Vogt had previously served as manager of the Upper Niobrara White NRD in Chadron and Lower Niobrara in Butte.

Starting in 2020, the CPNRD, Rain Water Basin Joint Venture, and NRCS partnered to share the cost of employing joint employee positions including a communications specialist, easement specialists and a prescribed fire planning specialist. CPNRD administers salaries for these partnerships.

The partnerships have provided opportunities to meet long-term and short-term communications goals, private lands objectives, and habitat improvement for waterfowl and wildlife.

See 2023 Staff list in Figure 7.

FIGURE 7. 2023 Staff

General Manager: Lyndon Vogt
 Assistant Manager: Jesse Mintken
 Administrative Assistant: Kelly Cole
 Communications Assistant: Brody Vorderstrasse
 Cozad Ditch Manager: Michael Schmeeckle
 Cozad Ditch Rider: Jake Laird
 GIS Coordinator: Angela Warner
 GIS Image Analyst: Luke Zakrzewski
 Hydrologist: Brandi Flyr
 Information/Education: Specialist: Marcia Lee
 Precision Conservation: Specialist Darren Cudabeck
 Prescribed Fire Planning: Specialist Nelson Winkel
 Projects Assistant: Tom Backer
 Range Management Specialist: David Carr
 Resources Conservationist: Bill Hiatt
 Resources Conservationist: Shane Max
 Secretary/CPNRD: Deb Jarzynka
 Secretary/NRCS-Central City: Kyla Friedrichsen
 Secretary/NRCS-Grand Island: Sydney Wagner
 Secretary/NRCS-Lexington: Samantha Keith
 Secretary/NRCS-Kearney: Shelly Lippincott
 Secretary/Thirty Mile Irrigation District: Marci Ostergard
 Thirty Mile Irrigation District Manager: Jim Harris
 Thirty Mile Irrigation District Technician: Mike Ostergard
 UNL/CPNRD Demo Project Coordinator: Dean Krull
 Water Quality Specialist: Tricia Dudley
 Water Resources Specialist: Dan Clement
 Water Resources Technician: Courtney Widup

NRD Projects by Authorities

Central Platte NRD's Board of Directors prioritized the 12 responsibilities set by the Nebraska Legislature to meet the District's needs. Several are managed as combined responsibilities:

1. Erosion prevention and control.

PROJECTS

Nebraska Buffer Strip Program
Cover Crop Research and Demonstration Projects
Ogallala Aquifer and Platte River Recovery
Precision Conservation Management Program
Wetland Easements

2. Soil conservation.

Central Platte Demonstration Projects
Cost-Share Programs
Ogallala Aquifer Initiative
Resilient Futures for Nebraska Soils Grant

3. Prevention of damages from flood water and sediment.

PROJECTS

Warm Slough/Trouble Creek Flood Control Project
Clear Creek Watershed
Platte County Project
Buffalo Creek Watershed-Structures
Dams Inventory and Rehabilitation
Platte Valley Industrial Park
Lower Wood River Watershed
Lake Helen – Gothenburg
Kirkpatrick Memorial Park Lake

4. Flood prevention and control.

Prairie Silver Flood Control Project
Kearney Northeast Flood Control Project
Wood River Flood Control Project
Upper Prairie/Silver/Moores Flood Reduction
Elm Creek/Turkey Creek Watershed
Spring and Buffalo Creek Watershed
Elm and Turkey Creek Watershed
Grand Island Dewatering Study
Ice Jams on the Platte River

5. Drainage improvement and channel rectification.

PROJECTS

Administer Irrigation Runoff Rules and Regulations
Cairo Downtown Improvement Project
Odessa Area Flood Control Project
Kearney West Clearing Project
Amick Acres Improvement Area
Moores Creek Flood Control Project

Lepin Ditch Flood Control Project
City of Gibbon Drainage Project
Doniphan Drainage Project
Dry Creek Clearing Project
Wood River Watershed

6. Water supply for any beneficial uses.

PROJECTS

Groundwater Quantity Management Plan
Suspension on Well Drilling
Irrigation Well Registration
Cooperative Hydrology Study
Water Banking Program
30-Year Acreage Reserve Program
Airborne Electromagnetic Survey
ArcGIS Solutions Platform
GeoCloud Database
Light Detection and Ranging
Rehabilitation of Surface Water Canals – Cozad Canal , Thirty Mile Canal, Orchard Alfalfa Canal
Nebraska Water and Energy Flux Measurement, Modeling and Research Network
Basin-Wide Plan for Joint Water Resources Management of Over-Appropriated Portion of the Platte River

Groundwater Level Monitoring
Certification of Irrigated Acres
Integrated Management Plan
Transfer of Irrigated Acres
Buyout of Six Mile Canal
Groundwater Exchange Program
Central Nebraska Irrigation Project
Evapotranspiration Map
Groundwater Evaluation Toolkit
Magnetic Resonance Sounding

NRD Projects by Authorities *(continued)*

7. Development, management, utilization and conservation of groundwater and surface water.

8. Pollution control. 9. Solid waste disposal/sanitary damage.

PROJECTS

Groundwater Quality Management Plan	Vadose Zone Study
Online Reporting Form	Central Platte Demonstration Projects
Crop Irrigation and Demand Network	Cover Crops
Project SENSE	Testing Agriculture Performance Solutions
Decommissioned Well Program	Irrigation Run-Off and Erosion Plan Update
Nebraska Buffer Strips – Administration of Funds	Chemigation Program

10. Development and management of fish and wildlife habitat.

PROJECTS

Platte River Recovery Implementation Program – First and Second Increments	
Nebraska Habitat Conservation Coalition	Platte Basin Habitat Enhancement Project
Platte Valley Phragmites Control Project	Instream Flow Rights

11. Development and management of recreational and park facilities.

PROJECTS

Kearney Area Trail System	Wood River Flood Control Project Trail
B-1 Reservoir	Central City/Marquette Trail
Johnson Lake Trail	Crane Meadows Stabilization
Great Platte River Road Archway Stabilization	Alda Crane Viewing Site
Richard Plautz Crane Viewing Site	Urban Conservation Program

12. Forestry and range management.

PROJECTS

Nebraska Conservation Tree Program	Tree and Weed Barrier Cost-Share Program
Nebraska Forest Restoration Partnership	Urban Forestry Program
Planned Grazing	Prescribed Fire Program
Grazing Deferment Program	Prescribed Fire Training Program
Native Prairie Outreach Project	

II. Flood Control/Drainage

GOAL: To control floodwaters and/or to provide open floodways that will keep floodwater damages to an acceptable minimum.

Land within the NRD is unusual in the fact that most tributaries of the Platte River run almost parallel to the Platte itself. Consequently, tributaries span many miles of the flat terrace or bottom lands adjacent to the Platte before emptying into the river. In the central and western ends of the District, most tributaries originate in uplands where flood control structure sites are plentiful, but then drop off into the flat terrace or bottom lands and meander for many miles before reaching the Platte River. Many of the NRD's other streams, such as Silver Creek, Warm Slough, and the North Branch, originate in the flat terraces or bottom lands.

PROJECTS COMPLETED

- 1. Snagging & Clearing** Discontinued in 2015 with the exception of projects already in progress.
- 2. Warm Slough/Trouble Creek Flood Control Project** Due to a history of flood damage to agricultural and urban property within Central City, a project was developed to reduce flooding caused by storm runoff into the Warm Slough, Dry Run and Trouble creeks. Construction near Grand Island took care of storm runoff from the city, channel clearing, and renovation from Grand Island to Central City. Partial funding received through the Nebraska Natural Resources Development Fund. Cosponsors: CPNRD, Merrick, Hall counties, and cities of Grand Island, Central City. Construction was completed in 1993 and maintenance responsibilities were turned over to Merrick County and Central City. In 2002, CPNRD did snagging/clearing of the Lower Warm Slough from Grand Island to Central City for \$110,000. \$23,000 in additional funds were used to remove dirt due to close proximity of wetlands in the area. From June 1-8, 2008, Central City received over 6" of rainfall that exceeded a 100-year event. The project has improved drainage of the entire watershed.
- 3. Prairie-Silver Flood Control Project** Flooding was studied by the NRD in central Hall County, just west of Grand Island. CPNRD determined that the problem was caused by two short stretches of Prairie Creek and Silver Creek that produced channel overflow after large storm events. Channels were cleaned out and training levees were constructed to prevent overflow in 1986. Construction and land leveling in the area disturbed natural drainage flows along the Prairie/Silver Creek, northwest of Grand Island. In 2000, a uniform drain was installed and culverts added for a two-mile stretch. Cost was \$22,000; CPNRD's cost was \$17,500.
- 4. Clear Creek Watershed** Clear Creek watershed in Polk County encompasses 75,700 acres with a long history of flooding. Starting in 1978, 15 flood control structures were constructed in Clear Creek Watershed over several years. Funds from the Natural Resources Development Fund were received on five of the large structures. Polk County provided funds to construct additional smaller structures including road structures.
- 5. Lepin Ditch Flood Control Project** In 1993, landowners petitioned CPNRD to solve excess storm runoff overloading the "old north channel" of the Platte River in southwest Hall County. A study by Nebraska Department of Roads (NDOR) and CPNRD determined that when I-80 was constructed an attempt was made to redirect runoff from the Lepin Ditch to another crossing site under the Interstate. This joint project placed a culvert near the natural channel to allow runoff to flow under the Interstate. Total cost: \$700,000. Partners: CPNRD, NDOR and Hall County. Easements were obtained from area landowners for construction/maintenance of the ditch. Hall Co. provided site preparation and ditch excavation in 1995 and provides maintenance. CPNRD's cost was \$120,000; NDOR paid for the culvert.
- 6. Cairo Downtown Improvement Project** In 2007, CPNRD approved \$50,000 to construct a 48" drainage outlet to divert excess water along the Hwy 11 corridor. The previous drainage system couldn't handle a one-year rain fall event, which caused overflow ponds and flooding in low areas. The community of Cairo contributed \$2M.
- 7. City of Gibbon** The City of Gibbon filed a formal request for help with a drainage project. The proposed project includes relocating the existing sluice gate, improvements on hydraulic conditions at the outfall, and installing an automated sluice gate system. Total cost estimated at \$150,000 and was added to the Hazardous Mitigation Plan to be considered for Federal funding. In 2008, \$50,000 was provided to the City for improvements to the storm water system, the project was completed in 2010. In 2015, Olsson Associates reviewed what has been accom-

plished towards drainage issues and additional needs in order to resolve remaining issues. CPNRD has facilitated meetings with the City of Gibbon and Buffalo County to address remaining drainage problems.

- 8. Odessa Area Flood Control Project** Miller & Associates of Kearney started the final design of the Odessa Area FCP in 2008 and completed it in 2010 with a cost of \$15,000. The Project is located east and south of the project boundaries include the Odessa Rd to the west, 24th Rd to the North, and Sartoria Rd to the east. The two-mile project improved existing roadside and field drainage ditches, culvert replacements, & supplement existing culverts.
- 9. Doniphan Drainage** The Village of Doniphan received \$4,000 to pump standing water from a detention cell located in the city park and into the curb and gutter system. Project was completed in 2015.
- 10. Clarks Floodplain** Silver Creek is the major source of flooding in the area. Participation was approved in the Clarks Floodplain mapping study up to \$5,000; which is 50% of the expected cost of the study and needed to meet FEMA requirements. The study and funding was added to the 2014 budget.
- 11. Lake Helen** In 2013/2014, \$75,000 was provided towards restoration of Lake Helen in Gothenburg for water quality conditions. The lake was drained to excavate 171,773 cu/yds of sediment, stabilize 3,391 LF of shoreline, develop underwater shoals, install a circulation system, dam repair, installation of a pier and boat ramp. Sediment/nutrient loading from outside the lake was addressed by treating the lake with aluminum sulfate to precipitate phosphorus, installing a deeper well to access lower phosphorus water, and stocking recreational fish. Total cost of the water quality and habitat project was \$1.8M. **2016:** Project completed. **2019:** \$10,000 approved through the NRD's Urban Conservation Program for additional bank stabilization.

PROJECTS UNDER MAINTENANCE

- 1. Kearney Northeast Flood Control Project** In 1990, the City of Kearney, Buffalo County and CPNRD initiated a project due to the expansion to the northeast of the city of Kearney that resulted in increased flooding on an unnamed tributary of the Wood River from storm runoff. Aerial photography and survey work needed for topographic mapping of the affected area was completed in 1991. NRCS conducted a feasibility study to determine what options were available. In 1995, Miller & Associates developed a plan for the watershed including channel improvements, drop structures, road crossings and a detention cell. A drop structure was constructed in 1996 (\$240,000) to stop serious erosion at the point where water had been entering the Wood River. The County built a road structure as part of its bridge replacement program.
Phase I: Existing channel was widened at the drop structure, meandered westerly and south to a point near 56th Street on Eaton Road.
Phase III: (Completed before Phase II) Properties were purchased in 2000 for construction of detention cells and channel improvements. Detention cells are located 1/2 mile north of "N" Ave and 56th Street in Kearney. Construction included 300,000 yds of excavation with a 50 AF of storage for a 100-year storm and 50 AF storage for a 25-year storm on the other cell. In 2003, a contract change completed channel improvements south of the detention cells and erosion control. 800,000 cu/yds of soil were excavated to create the channel with storage capacity of 200-300 AF.
Phase II: Channel improvements from Phase I channel, south to 39th Street and westward to Antelope Road. Phase II/III from 56th St. to Avenue N was completed in 2006. Total cost: \$3.4 million.
- 2. Kearney West Clearing Project** In 1999, landowners west of Kearney requested a clearing project to assist with flooding problems along Turkey Creek, also known as the Platte River North Channel. About 2.5 miles were cleared. In 2000 & 2001, snagging & clearing was redone. In 2002, the North Channel of the Platte River/Turkey Creek had eroded to within 5' of a local sandpit. The Corps of Engineers provided an Emergency 404 permit to the NRD to stabilize the bank. City of Kearney: \$1,850 (25%), CPNRD: \$13,500.
- 3. Dry Creek Clearing Project** In 1997, debris from a wind storm/tornado fell into Dry Creek channel northeast of Cairo, prompting a request from landowners for a clearing project. Cost of the project completed in 1998 was \$11,500. Area landowners petitioned CPNRD to complete about 21,000' of additional clearing; completed 1999-2000 for \$42,000. In 2012, a three-mile channel improvement was completed to the west of the Central Nebraska Airport and a culvert added under Gunbarrel Road. CPNRD is responsible for maintenance.

FLOOD CONTROL / DRAINAGE

- 4. Amick Acres Project** Amick Acres Project Improvement Area is located in south central Hall County, just to the west of Doniphan. The project diverts flood and drainage water away from Amick Acres residential subdivision by utilizing part of a county road ditch for approximately one mile of channel. The initial of the project was \$25,000; most of which was assessed to the benefiting landowners.
- 5. Platte County Project** Platte County Project is an improvement area located just southwest of Duncan. The project provides drainage improvement and minor flood control benefits to 1,300 ac. of irrigated cropland in southwest Platte County. Maintenance as needed at estimated cost of \$500-\$1,000 annually. Actual costs are assessed to benefiting landowners.
- 6. Wood River Watershed** In 1972, snagging and clearing was completed from the mouth of the stream to Gibbon. In 2002, one mile was cleared at a cost of \$20,000. Annual maintenance for Wood River Clearing Project is \$10,000. Additional spot clearing is completed as needed.
- 7. Moores Creek Flood Control Project** In the 1980s, CPNRD, Grand Island, Merrick & Hall counties, and others recognized the need for flood control on Moores Creek. In 1984, Nebraska Natural Resources Commission agreed to 65% cost-share for a three-phase construction plan for the Moores Creek FCP.
- Phase I:** In 1990, channel improvements from the mouth near Archer upstream to Hall-Merrick county line.
- Phase II:** Added 3 detention/retention and wildlife habitat enhancement cells on the channel from the Hall-Merrick county line upstream to Grand Island.
- Phase III:** Waterways & bridges were constructed to enable storm runoff from Capital Heights northwest of Grand Island, to drain into the improved Moores Creek channel. Project was completed in 1995.
- 8. Wood River Flood Control Project** The Wood River has 173 miles of channel meandering through the Platte River Valley with numerous flood control structure sites in its upper reaches. During the June 1967 flood on the Wood River, most of the rain fell east of Kearney where there were few flood control structures. 10" of rain fell over nine days from June 7-15, with 3.2" falling on June 13 with extensive damage in Grand Island. The Corps of Engineers conducted reconnaissance studies and found highly feasible floodway projects using different routes.
- 1989:** Following public hearings, the Corps began a study to determine the actual feasibility of a route to carry excess water from the Wood River & Warm Slough into the Platte River. **1996:** Appropriation/construction to start authorizations were obtained from Congress.
- 1999:** The Corps' revision of plans and increased project costs required new Congressional reauthorization, allowing construction to begin in March 2000. **2002:** Contract was increased by \$1M due to miscalculations regarding the amount of topsoil needed (180,000 yards of soil added) with co-sponsors paying \$95,000 of the increase. 500 acres were involved in land acquisition for the project just two miles west of Hwy 281 to Hwy 34 bridge; and a reappraisal of Hall County's RV Park resulted in compensation for damages to Hall County Board. The board proceeded with the remaining 11 tracks of land needed for the project.
- 2005:** A total of 7.21" of rain fell between May 11-12, more than any one-day of rainfall during the 1967 Flood. The 300'-wide channel provided flood protection for 1,500 homes/businesses. On June 1-8, the project was tested again with 6" of rain. Benefits include flood control for Grand Island, rural Hall/ Merrick counties and groundwater quality improvement. **2004:** Close to 7,000 acres of land were taken out of the flood zones when FEMA revised its floodplain maps, removing the need for flood insurance in southern Grand Island. Landowners had been paying \$317,000 to protect \$56M worth of property prior to the revision. Full Federal funding enabled construction to be completed on schedule. CPNRD borrowed \$1.1M for construction over three years. CPNRD was reimbursed by the State of Nebraska through a cost-share grant and local sponsors. Project was completed & dedicated in May. **Total Cost:** \$15M: \$7,148,000-Corps of Engineers, \$4M-NeDNR, \$1.4M-CPNRD, \$1.2M-Grand Island, \$352,000-Hall County and \$200,000-Merrick County. CPNRD



is responsible for maintenance, with costs split between cosponsors. **2015:** JEO completed design work (\$25,000) for the System Wide Improvement Framework. \$20,000 maintenance/repairs is required by Corps of Engineers. **2019-2020:** Scouring of the channel was completed.

9. Prairie Creek Clearing Project While Prairie-Silver Creek FCP had a local effect, it didn't solve all of flooding problems on Prairie Creek, nor evolve into a feasible project to solve flooding problems on the stream. Damages could be reduced by keeping the channel clear. Snagging/clearing projects involving removal of timber, trash, and debris from the stream channel in an area of 35' on either side of the center of the channel were completed from the mouth of Prairie Creek in Merrick County to the Hall-Bufferalo county line. Annual maintenance \$10,500.

10. Buffalo Creek Watershed-Structures Feasibility planning for flood control was completed in Buffalo Creek Watershed in Custer, Dawson and Buffalo counties. CPNRD received cost-share funds from Natural Resources Development Fund to construct 7 flood control structures.

B-1: This largest of the structures was completed in 1983. Construction included a supply canal, 1.6 miles of power line relocation, 1/2 mile county road improvement. It was expanded to include recreation and ground-water recharge.

1985: A chimney drain system was installed to repair cracks in the structure.

1987: The reservoir was opened for fishing.

1995: A petition from landowners requested that CPNRD discontinue filling the reservoir due to concerns that the reservoir contributed to high water tables. Hydrological studies showed that it made no significant contribution and that groundwater declines had not materialized due to continued strong annual rainfall amounts; however, the request to stop filling the reservoir was granted in January 1996.

2010: CPNRD started filling the reservoir every other year and is required to fill it once every five years to keep the water right.

2013: Started filling the reservoir every year to get it back to its original concept. CPNRD has a diversion right of 4,218 AF of water/year from NPPD to fill reservoir.

2018: JEO Engineering received \$148,588 to study options to account for groundwater recharge and their effect on stream flows from the B-1 Reservoir.

2023: Staff is currently holding meetings with the NeDNR concerning the future use of B1 Reservoir to determine how it may be used to retine flows back to the Platte River. Discussions are ongoing.

F-7: In 1990 cracks were repaired for \$11,500. Two sites in Buffalo Creek Watershed near Lexington were not feasible and planning efforts for the watershed were discontinued. Operation and maintenance continues for all structures in the watershed including dam safety checks.

11. Silver Creek Watershed Located in Merrick County, this watershed encompasses approximately 90,000 acres. In 1979, a channel improvement project was completed in four parts to provide flood relief in the watershed.

Phase 1A: Lower 4.1 miles of Silver Creek **1B:** One mile of Silver Creek and 15 miles of Clarks drain

Phase 2: Upstream on Silver Creek for 6 miles

Phase 3: Next 10 miles upstream

Phase 4: Completed in 1987 due to wet weather in 1985-1986. The 11-mile stretch upstream from Hwy 14 north of Central City to Silver Creek's headwaters (west of Chapman) was extended in 2000 due to additional flooding. Maintenance costs: \$20,000 annually.

5. GI Dewatering Study The NRD began participating in the Grand Island Dewatering System Study in September 2000. The Study identified a practical groundwater dewatering system to remove groundwater from residential basements and minimize impacts on the project area. The study also assessed potential transmission and discharge location options, financing options, potential impacts on water quality and quantity, and subsidence issues; using both low and high capacity vertical wells. The NRD delivered public opinion surveys to the north-west and southeast project areas prior to the initiation of the Study, with the majority of responses returned as "very interested" in the Study. The Study areas fall within the "Valleys" topographic region, characterized by low relief along streams that are underlain by alluvial clay, silt, sand and gravel. The general direction of ground water flow is east to northeast generally paralleling the Platte River.

FLOOD CONTROL / DRAINAGE

Evapotranspiration (ET) losses are relatively high due to a shallow water table; saturated thickness of Quaternary deposits in/around Grand Island range between 80-200'. Depth to water table ranges from 5-20' below ground level. **2012:** Olsson Associates presented a study to improve and expand the project implemented in 1998. The original study involved 29 dewatering wells compared to 33 in the study. Three dewatering areas and areas of contamination were taken into account with wells proposed to be outside of those plumes. The Grand Island City Council was initially receptive to the updates; however, there has been no further progress.

12. Kirkpatrick Memorial Park Lake In 2016, \$25,000 was approved for lake improvements at Kirkpatrick Park Lake in Lexington. Improvements: 4,000 cu/yds. of dredging, 2,500' of bank improvements including tree removal, and a 700' sea wall to the 4 acre lake. The project will improve water quality, aquatic habitat, public access, and provide an area for educational events. Construction was completed in 2017.

13. Ice Jams In 2011, an agreement on how to deal with ice jams in the Middle Platte River, was formed with a continual escrow account for \$50,000. The agreement stated that if an ice jam were to begin, CPNRD would be the first entity to start the process of calling FEMA & NEMA. Partners: Tri-Basin NRD, Buffalo, Hamilton, Merrick, Phelps, and Kearney counties- participated for \$37,000 for an emergency fund. In 2016, the Platte River Ice Jam Removal Agreement was dissolved. Partners now focus on emergency preparedness in the event of an ice jam related to flooding and safety education. All funds were returned.

14. Upper Prairie/Silver/Moores Flood Control Project Flood waters along Hwy 2 resulting in large quantities of water flowing east into developed areas of northwest/west Grand Island. A detailed hydrology analysis and 100-year floodplain in upper parts of the Dry, Prairie, Silver & Moores Creek watershed showed that a 100-year flood would inundate 23,000 acres south of Hwy 2, producing crop damages of \$3M/10-year flood \$1.6M.

The project protects northwestern Grand Island from Prairie and Silver Creek flooding south of Hwy 2 and east of Hwy 281; reduces future flood damages to crops, properties, and infrastructures; and eliminates an estimated \$130M in damages during a 100-year event. Construction included: 3 floodwater retarding sites in upland areas of Prairie Creek watershed southwest of Cairo; 1 upland detention site in Dry Creek watershed; a series of detention sites in lowland areas along upper Prairie Creek; 3 excavated off-channel detention sites in Silver Creek Watershed; low-level berm to prevent basin overflows from Silver Creek into Moores Creek and clearing to improve capacity. Upland/lowland flood control structures were developed with roadways to act as dams, berms built to keep creeks within banks and detention cells were built on 500 acres at Cornhusker Army Ammunition Plant.

2005: May 11, 2005, Grand Island sustained \$3-5M in flooding damages and Hall County sustained \$12-15M. Project included acquisition of 1,800 acres for easements; excavation of 3,500 AF of off-channel storage in lowland areas, construction of 6 upland floodwater detention dams/outlet works, and installation or replacement of roadway culverts under Hwy 2 and county roads. 500 acres of irrigated cropland were acquired for detention cells.

2006: Construction began and was phased over 10 years, starting with the off-channel lowland sites in Silver Creek.

2015: Conditional Letter of Map Revision (CLOMR) to FEMA providing an assessment of the flood risk reductions due to flood control measures.

2016: 7.25 acres of irrigated land was condemned at Engleman and Airport roads following unsuccessful negotiation attempts. The property is central to the existing levy and to a new levy.

Phase I: North detention cell on Airport Road was completed in 2016. Equipment included 4 scrapers that held 20 cu/yds, two excavators, four dump trucks that held 30 cu/yds, bulldozer and a road grader. 71,500 cu/yds was excavated to form the north cell. The southern portion of Phase I included 815,000 cu/yds, located at Capital and Schauppsville roads. Seeding and mulching for erosion control will take place as needed.

Phase II: Hooker Brothers constructed the detention cell for \$2.2M; \$1.18M below estimate. One million cu/yds of dirt were excavated. **2017:** 4 upstream dams & detention cells were completed. **2018:** Levee construction Airport Road & Engleman Road was completed. **2019:** Real-time monitoring and data logging equipment was installed in



Upper Prairie/Silver/Moores Flood Control Project (PSM) (continued)

the amount of \$30,000 throughout the project. Water level sensors, cameras and rain gauge sensors were placed at strategic locations. **2021:** Next phase of the system approved. separates upcoming monitoring efforts from current project. Data from monitoring equipment to be processed, models calibrated and maps generated for various flood scenarios. The new system measures real-world conditions and variability to support the NRD's flood risk awareness and preparedness efforts. Additional equipment (boxes, staff gauges, cameras, etc.) may be installed through the project area. Maps and figures in the Operation & Maintenance manuals will be revised and highlight/informational material will be updated for the floodsafe-cpnrd.org website.

New Flood Maps In 2020, FEMA released the new flood maps available at <https://tinyurl.com/UpperPSMLOMR>. In September, the Letter of Map Revision (LOMR) was released with 7 revised map panels in northwest Grand Island and in Hall County north & west of Grand Island. The LOMR reduces the floodplain and ultimately requirements for flood insurance for 600 property owners and new areas to be developed.

Flood Repairs In 2020, 300 tons of riprap was installed at the Silver Creek drop structure located near the bridge on Schauppsville Road. A new drop structure was installed in 2021 to protect the streambed of Silver Creek upstream of the detention cell to replace the concrete structure that failed during the March 2019 flood. The drop structure consists of a sheet pile weir with grouted riprap plunge pool. The streambank was regraded and protected with riprap along 1,000 LF. Cost-share was received through NRCS Emergency Watershed Protection Program. Blessing LLC of Kearney constructed an earthen berm and crushed concrete access road around portions of the detention cell for \$138,575. Improvements: 850 cu yds dirt work, 2,600 tons crushed concrete base, white limestone.

PSM Project Costs Water Sustainability Funds-Nebraska Natural Resources Commission \$14,817,862 (52.5%); CPNRD- \$6,200,570 (46.25%); City of Grand Island- \$6,200,570 (46.25%); Hall Co- \$670,332 (5%); Merrick County- \$335,166 (2.5%)

Stream Gauge A camera was installed near the streamgage in Grand Island along the Platte River to track current flows and ice conditions for three years in the amount of \$14,985,00. The Platte River Program reimbursed CPNRD for 50% of maintenance costs (\$4,700). The camera is located on the Hwy 34 bridge and takes photos every 15 minutes. The photos are available on the USGS website. The streamgage collects data used for the Program and for NRD management decisions.

Proposed Education Center/Office Building at PSM

2020: Barber Appraisal of Phillips, NE received \$2,950 to appraise the CPNRD buildings and shops.

2021: Potential costs/design of a new building complex reviewed. An educational component with existing \$1.7M available through the Nebraska Natural Resources Conservation Development Fund was pursued. The Commission approved the request to utilize the funds for an education center in October. With those funds and the projected sale of the NRD's current facility, the Board decided to move forward to consider construction costs to future fiscal year budgets without increasing tax requirements for building purposes.



2022: Phases 2/3 architectural proposal was awarded to JEO not to exceed \$225,000.

Phase 2: Schematic design to further develop the site plan, floor plan and overall building design; zoning and code requirements, site survey, geotechnical soils testing. Design drawings include: developed site plan layout, dimensioned floor plans, elevations, cross-sections, updated opinion of construction cost.

Phase 3: Enlists services of engineers who specialize in design of structural, mechanical and electrical engineering systems. The agreement (\$189,000) to move forward with the next two phases of the Schematic Design and Development is currently in progress. Construction costs for building materials, structural, mechanical and electrical engineering systems will be considered in 2023.

Based on the schematic design and design development, the new office building will be approximately 20,000 square feet in size on the main level with a lower level to match. The education center would include both indoor

FLOOD CONTROL / DRAINAGE

and outdoor learning experiences that would show how water relates to forests, grasslands and soil. Outdoor sites would provide hands-on learning objectives including wetlands, walking trails, windbreaks, pollinator habitat, irrigation and crop demonstrations, monitoring wells and many other possibilities. The center would be open to the public and allow for workshops and trainings for ag producers, groundwater technicians, well drillers, and for students to learn how to sample and test wells, use irrigation equipment, acquire CEUs and see new technology and research.

2023: In February, JEO's contract (\$470,425) was approved to complete construction documents, and bidding and negotiation. In August, Downey Drilling began drilling a well at the potential new office site.

EASEMENTS

CPNRD controls property through various legal means, documents and ownership. The main purpose is for flood protection structures and projects such as dams, levees and detention cells. CPNRD owns about 1,800 acres and holds permanent easements on another 2,772 acres throughout the District (not including flood pools). On property that the NRD owns, land is managed to promote wildlife habitat and/or outdoor recreation. Types of legal documents that we hold include: warranty deeds, quitclaim deed, storage and flowage easements, flood protection levee easements, construction easements and structure easements.

Amended Easement Requirement In 2023, an amendment to remove the 'no deep-rooted' clause on sub-irrigated dryland crops for permanent conservation easements was approved. To make the change on current contracts, funding partners including CPNRD, NeDNR, and the Nebraska Environmental Trust, would need to agree to the amendment on the individual conservation easement contracts.

Midwest Carbon Express Project In 2022, an easement with Summit Carbon Solutions was approved to construct a pipeline across NRD property in Merrick County for the Midwest Carbon Express Project. CPNRD received \$17,277 for the easement that encompasses 2.625 acres.

Canaday Solar Project In July 2023, the Board approved staff to develop an agreement with legal counsel to allow solar development as an approved use on two of CPNRD's conservation easements. The power generated by the proposed Project will be transmitted to the electrical grid maintained by the Southwest Power Pool via NPPD's Canaday Substation. The project will be subject to approval by the Dawson and Gosper counties zoning process and will be sited to conform with NGPC Guidance for Utility-Scale Photovoltaic Solar Energy Projects.

CONSERVATION EASEMENTS (*with flood pools)

PROJECT NAME	COUNTY	PERMANENT	ACREAGE*
Box Elder 5-A	Buffalo	3	125
Gibbon Crane Deck	Buffalo	1	5
Kearney Northeast	Buffalo	15	127
PCUL 1-PCUL2-PC4	Buffalo	36	627
B1-B1A-B3-C5-F1-F3-F5-F7	Dawson	48	995
Alda Crane Deck	Hall	1	7
CHAAP Ditches	Hall	2	98
DCUL 6	Hall	3	81
PSM Detention-Levee-PCUL 4 (Dibbern)	Hall	12	1,141
Wood River FCP**	Hall	88	757
Bankson	Hamilton	3	23
Warm Slough	Merrick	13	72
Clear Creek 1 & 6	Polk	9	131
Buchta-Burritt-Carlson-Coover-Dittmer-Erickson-Swedenburg	Polk	11	85
Jones Creek 1, 1-1, 1-A	Polk	15	191
Korger-Micek-Monson-Oquist-Wyman-Boden	Polk	12	107
TOTAL		272	4,572

PROJECTS UNDER CONSTRUCTION/PLANNING

1. Hazard Mitigation Plan In 2008, FEMA awarded CPNRD a grant to develop a multi-jurisdictional All-Hazard Mitigation Plan; enabling communities to take action and reduce threats from natural disasters. Public input from officials and landowners were a key component of the process. Regional meetings were held to obtain input in the initial stages.

Potential hazards affecting the area, individual communities identified, critical facilities located, and potential mitigation actions/projects were listed. Projects considered are flood and drainage system improvements, backup generators for critical facilities, alert sirens, weather radios, tornado shelters/safe rooms, tree inventory, and programs to reduce electrical outages.

2012: Kirkham Michael Engineering developed the HMP.

2015: JEO updated the Plan for \$120,000 (update required every 5 years). To be eligible for emergency funds, each county, community and schools are required to participate in the process. CPNRD sponsored the initial plan in 2010 and the 2017 updates.

2022: The most recent FEMA version of the Hazard Mitigation Plan was approved.

2. Dams Inventory In 2016, JEO received \$39,500 to conduct an inventory of the 40 dams nearing their 50-year lifespan. It included dams that are one acre or larger. JEO's \$25,000 fee was requested through the Hazard Mitigation Plan.

2019: Conceptual design was developed by evaluating 150 existing and potential dam/other structure sites. The design determined: localized water balance, recharge potential, storage capacity, design and construction considerations, and the conceptual cost for dam improvement or new construction. JEO received \$140,680 including \$56,270 in Water Sustainability Funds and \$84,410 from CPNRD.

2021: Design improvements and dam safety permits were completed. The long-term plan is to replace, update or remove aging structures.

2023: JEO received \$14,000 for additional services required for the rebidding and construction phase of the Jones and Clear Creek dams. Completed projects:

- **Box Elder 5A/Bufalo County:** channel improvements downstream, dredging around the drawdown, riprap along the dam face. Kokes Construction advised staff that crushed rock surfacing wasn't needed for the access road. Existing drawdown plate and valve were removed, 18" slide gate in riser was installed bringing the cost of the project to \$136,555. Project was completed in 2022.
- **Clear Creek 5/Polk County:** replaced the drawdown with structural elements, riprap along dam face, repair of slough in auxiliary spillway, leveling of a low portion of the top of dam. Cost increase of \$7,613.45 was due to adjustments for pressure-treated dimensional lumber stop logs & stainless-steel guide rails and additional rock riprap on the face of the dams. Kokes Construction was awarded the bid in the amount of \$76,970. Project (near Duncan) was completed in 2023.
- **Jones 1A/Polk County:** replaced riser and spillway pipe. Kokes Construction was awarded the bid for dam rehabilitation in the amount of \$145,593. Project (near Osceola) was completed in 2023.

3. Elm Creek/Turkey Creek Watershed A feasibility study for \$125,000 was submitted to the Nebraska Resources Development Fund to request cost-share for the projected \$35M project.

2006: Community meeting was held on the Elm Creek Watershed Flood Control Study and 130 landowners attended. Plan included a 975-acre flood control and re-regulating reservoir to be located northwest of Elm Creek, and 2 dry flood control structures on Turkey Creek. The reservoir would've provided flood reduction and recreation benefits. Cost estimate was \$22.8M. Olsson Associates did a geotechnical investigation/seepage analysis by drilling 30 test borings at the reservoir site and adjacent lands to determine if leaching would raise water tables to a level that would create problems for cropland or basements.

2012: The board reviewed the project due to a potential new funding source from the Nebraska Water Cash Fund. Partners: Olsson, NPPD, State of Nebraska, and PRRIP on options to move forward with a project estimated at 6,800-12,000 AF.

2013: \$631,465 originally designated for Elm Creek Re-Regulating Reservoir, was transferred to CNPPID's new J-2 Reregulating Reservoir; cutting the Elm Creek project from the budget. J-2 was eliminated as a project.

2023: An amended water service agreement approved for \$1.2 million with NeDNR and Tri-Basin NRD to allow NeDNR to pay CNPPID \$19,100,000 in advance to divert water into E-65 Canal, Phelps Canal, Elwood Reservoir and various waterfowl production areas to provide aquifer recharge for 15 years. CPNRD re-allocated the funds to the project.

4. Platte Valley Industrial Park In 2019, the board approved a request from the City of Grand Island and Grand Island Area Economic Development Corporation (EDC) to allow water to be diverted into the south side channel of the Wood River Flood Project to alleviate drainage issues at PVIP between South Locust Street and Hwy 281.

2021: Olsson designed a drainage ditch from Wildwood Drive to Locust Street with an approved cost up to \$87,500; included grading existing county road ditches from Blaine to Schimmer Drive, easements, and 36" storm sewer pipe was installed to drain into the south channel of the Wood River Project. CPNRD manages construction and acquisition of all right-of-way and/or easements within city limits.

2022: Hall County's portion was changed from in-kind contributions to utilize \$289,517.54 from the American Recovery Plan Act. CPNRD's cost is estimated at \$180,000 and will be funded in two budget years.

2023: an amendment was approved for easement acquisition and appraisal services for \$14,200 to complete geotechnical services including a seepage analysis and an archaeological study on 15.6 acres. The \$650,000 project cost will be shared by partners: CPNRD, Grand Island EDC and the City of Grand Island.

5. Flood Planning Grants

In 2020, CPNRD was selected to receive three Watershed and Flood Prevention Operations Program (WFPO) from NRCS to identify what is needed to address flooding within the following watersheds. The two-year grants pay 100% of costs to complete an Environmental Assessment (EA) for each watershed. Project updates:

- **Spring and Buffalo Creek Watershed (\$625,000)**

HDR Engineering developed an EA for Dawson County. The Plan area is approximately 266,870 acres, primarily ag, grass/pasture and row crops. Lexington is located within the study area, Cozad and Overton are immediately adjacent. A possible split plan may be needed to accommodate the Village of Overton.

2023: Currently reviewing plan to revise alternative and economic analyses; coordinate with NRCS and USACE on alternative screening and preferred alternative; analyze Spring Creek 19-B as part of the alternative moving forward; finalize preferred alternatives for each site; prepare and submit Preliminary Draft Plan-EA to CPNRD and NRCS for review.

- **Lower Wood River Watershed (\$725,000)**

JEO and EA Consultants developed an EA for portions of Buffalo, Hall and Merrick counties. A virtual public meeting and milestone meetings were held in 2020.

2022: Alternatives, evaluation of potential projects and stakeholder updates were completed.

Alt 1: diversion west of Gibbon to move flood water 4 miles to the Platte River and protect an estimated 15,000 agricultural acres and the cities of Gibbon, Shelton & Wood River. Estimated cost \$80-\$100M.

Alt 2: levee system outlining Gibbon & Wood River to protect homes and town infrastructure; this alternative wouldn't provide protection for ag lands. Estimated cost \$40-\$60M. Both alternatives have construction costs over \$25M, requiring Congressional approval. A letter was approved by NRCS to change from an Environmental Assessment to a full Environmental Impact Statement and additional funds and time be allocated to the project.

The Plan studies the entire watershed with the focus on reducing flood risk in the area between Kearney and Grand Island. Potential projects include but are not limited to diversion channels, channel and ditch widening, levees or berms, and roadway modifications. At the town of Wood River, the Wood River has an incised channel with high banks. This interferes with rainfall naturally draining overland into the river.

Rain falling between the river and Highway 30 through town cannot naturally drain to the river and creates excess stormwater ponding. In large flood events, water that escapes Wood River cannot easily re-enter the

channel as water levels recede. Instead, water flows east approximately three miles northeast of town, flooding the business district of Wood River along Highway 30.

2023: Alternatives were reviewed included wetland delineations, geotechnical investigations and archaeological surveys to further analyze potential alternatives and locations. Multiple proposed projects have been identified in these areas for review, and no final decisions have been made. Potential projects include, but are not limited to diversion channels, channel and ditch widening, levees or berms, and roadway modifications. The draft plan will be completed in September.

Once finalized, project design can begin on the proposed alternative, starting possibly late 2024 if pursued. JEO's new contract was approved for \$529,205.42 was approved for work completed in developing the EA and to complete the EIS that requires additional data to be gathered and analyzed. Meetings will be held during EIS-Plan design with NeDNR, NGPC, Nebraska DOT, Nebraska Federal Highway Administration, U.S. Fish and Wildlife Service and U.S. Army Corps of Engineers. Public meetings will be held following design completion.

- **Elm and Turkey Creek Watershed (\$742,500)**

In 2021, JEO developed an EA for Dawson and Buffalo counties. The Project covers 106,000 acres of drainage including Elm Creek Watershed to its confluence with Buffalo Creek, south of the Village of Elm Creek & Turkey Creek Watershed flowing north of Elm Creek, past Odessa and through Kearney. Milestone meetings with NRCS/USACE are being held.

2022: An economically feasible option was developed to benefit the Elm Creek portion; however, Turkey Creek's portion has potential alternatives such as tripling the size of the current diversion west of Odessa and constructing a new diversion channel west of Kearney. The draft plan (90% design completion) was sent to NRCS for approval. Once the EA is approved, CPNRD will decide if it's in the public's best interest to work with NRCS and funding agencies to move into design and construction phases.

Hydrologic and hydraulic models were developed to show existing flooding conditions, various flood risk reduction alternatives. The plan area covers the entire Elm Creek Watershed to its confluence with Buffalo Creek south of the Village of Elm Creek; and the entire Turkey Creek Watershed flowing north of the Village of Elm Creek past Odessa and through the City of Kearney.

2023: The Board approved JEO's contract of \$78,030 for additional project management, coordination, and public involvement due to a one-year extension and additional environmental science work to meet updated NRCS and USACE requirements. The proposed solution currently is to construct two diversion channels that will convey floodwater to the south and help prevent flood damages to the Kearney region. The west diversion channel is estimated at 50' in bottom width and 5,200' in length. Funds are available through the \$742,500 WFPO grant awarded to Central Platte NRD from NRCS.

LAND RIGHTS

At this time, the Central Platte NRD has no land right needs. This may change in the future to address areas within the District that are at risk of flooding during a weather event or disaster. Sufficient information is not available at this time to determine financial needs.

Flood Control Objectives

1. To establish management practices on cropland and grassland that would keep a minimum 2,000 pounds per acre of vegetative cover on, or above, the ground surface at all times.
2. To design floodwater retarding storage in all structures that have a suitable site.
3. To have a minimum of 75% land treatment established, or in the process of being established, before starting construction of a floodwater retarding structure.
4. All land shaping will consider its effect upon reducing flood damage, including upstream and downstream.
5. To preserve open floodways adjacent to streams and channels adequate to carry a 100-year-frequency storm with a rise in water elevation of one foot, or less, above the existing conditions.
6. Secure public awareness/acceptance of the need for and application of needed measures to reduce floodwater damage.
7. To carry out floodwater control practices at a satisfactory rate.

III. Soil Conservation and Erosion Control

GOAL: To use each acre within its capability and to treat each acre according to its needs as set forth in the technical guidelines adopted by the District.

Financial assistance is provided by CPNRD to private landowners through cost-share for installation of soil and water conservation practices. Established soil conservation practices for controlling the sediment movement and reduce the impact associated with runoff from agricultural areas. Cost-share is provided in the following percentages:

60% Cost-share Well Abandonment

50% Cost-share Streambank Stabilization, Windbreaks and Weed Barrier, Flow Meters, Urban Forestry, Prescribed Burn Program, Cover Crops, Burn Preparation

75% Cost-share Phragmites Control

FIGURE 8. Central Platte NRD Cost-Share Programs (2023)

PRACTICE	CPNRD FUNDS SPENT
Trees & Weed Barrier	\$33,913.75
Center Pivots	\$74,140.50
Streambank Stabilization	\$0
Well Decommissioning	\$7,150.00
Urban Conservation	\$20,000.00
Burn Preparation	\$13,725.00
Cover Crop	\$1,845.60
Soil Moisture Sensors	\$2,000.00
Grazing Deferment	\$645.00
Flow Meters	\$3,200.00
Sensor-Based Fertilization	\$0

PROGRAM	CPNRD FUNDS
Corners For Wildlife	\$4,748.50
Buffer Strip	\$20,592.53
WILD Nebraska	-0-
NSWCP	\$64,118.80

**Total Cost Share
Distributed Since 1972:
\$13,424,337.25**

NATURAL RESOURCES CONSERVATION SERVICE

The Nebraska Soil and Water Conservation Fund was created in 1977 to provide financial assistance to private landowners for installation of soil and water conservation practices. The Natural Resources Commission determines eligible practices, establishes operating procedures and allocates funds annually among the 23 NRDs. The USDA NRCS provides technical assistance needed in planning and installing the conservation measures. NRDs administer the program at the local level.

50% Cost Share

- * terrace systems, terrace underground outlets, water impoundment dams, grade stabilization structures
- * diversions, grassed waterways, water and sediment control basins, dugouts for livestock water
- * pasture planting/range seeding, critical area planting, planned grazing systems
- * windbreaks/renovation, drip systems, weed barrier, brush management, streambank stabilization
- * repair of practices, irrigation tailwater recovery pits, underground return pipe from reuse pits
- * Irrigation Management:: flow meters, goose necks, drop pipes/conversion nozzles, rainfall auto-shutoff valves, buried pipeline to convert gravity systems to pivots, subsurface drip irrigation, soil moisture sensors, data readers

NRCS 2022 - Annual Funding

Funding resulted in another good year for conservation in the CPNRD, having received 74 contracts totaling \$3,435,767 and conservation practices contracted on 32,676.6 acres. The availability of these funds are credited to the 2018 Farm Bill and the use of programs such as EQIP, RCPP and CSP.

EQIP Contracts Approved in 2022

- Water Conservation: \$1,924,569; 31 contracts (4,137.6 acres)
- Grazing Lands: \$287,502; 11 contracts (4,948.9 acres)
- Soil Health: \$270,045; 18 contracts (4,574.6 acres)
- Animal Feeding Operation: \$0; 0 contracts (0 acres)
- Conservation Activity Plans: \$9,743; 5 contracts (3,343.0 acres)
- Forestry: \$16,716; 1 contract (37.4 acres)

Technical Service NRCS provides technical assistance to landowners to help solve conservation problems while carrying out the NRD's programs. The NRD assists with this effort by providing personnel to NRCS to assist with their activities and to help administer the NRD's programs.

GRANTS/PARTNERSHIPS
**Ogallala Aquifer and Platte River Recovery -
RCPP 2271 Agreement Extension**

Provides cost share to convert irrigated land to non-irrigated on a temporary basis, improve irrigation system efficiency and apply management techniques and practices to increase irrigation efficiencies.

GOALS

Address stream flows to help meet endangered species habitat goals, improve surface and ground water quantity and quality concerns by reducing impacts to the Platte River and local groundwater supply.

PARTNERS

Central Platte NRD, Twin Platte NRD, and Natural Resources Conservation Service

FUNDING

\$2,079,000 grant was signed continuing agreement for 5 years. Applications preapproved in 2023:

Field Office	Preapproved Applications	Funding Requested
Kearney	2	\$82,490.64
Lexington	2	\$20,425.00
Central City	1	\$141,901.00
Grand Island	2	\$168,603.00
CPNRD Apps	7	\$413,419.64
Ogallala	3	\$72,020.00
North Platte	1	\$57,509.00
TPNRD Apps	4	\$129,529.00
TOTAL-Both NRDs	11	\$542,948.64

Precision Conservation Management Program (PCM)

In May 2021, directors approved with the Illinois Corn Growers Association to add a Precision Conservation Specialist to the CPNRD staff. The individual started employment August 2022.

GOAL Help farmers understand and manage risks associated with adopting new conservation practices to make sound financial decisions. PCM is looking to expand their reach into Nebraska with Frito Lay (PepsiCo) growers in the western area of the District. Applied economics, water quality outcomes and carbon sequestration values are generated for producers.

PARTNERS CPNRD, Illinois Corn Growers Association; PCM has 30 contributing partners including NRCS, NASA Harvest, National Fish and Wildlife Foundation, Ecosystem Services Market Consortium, Soil Health Partnership, Field to Market® and The Nature Conservancy.

FUNDING \$400,000 RCPP grant for staff cost to be reimbursed by partners.

Integrated Programs Coordinator

In 2023, the Rainwater Basin Joint Venture, was successful in writing a grant for a shared position between the Central Platte and Tri-Basin NRDs to assist NRCS and the NRDs in promoting USDA conservation programs. This position would promote and assist in voluntary enrollment in Farm Bill Conservation Programs.

NATURAL RESOURCES CONSERVATION SERVICE

Nebraska Soil Carbon Project - RCPP 1966 Agreement

The Nature Conservancy received a grant to enroll producers willing to adopt soil health practices on approximately 100,000 acres of farmland over 5 years starting in May 2021.

GOAL

Provide farmers in the Central Platte and Upper Big Blue NRDs with technical and financial assistance to adopt cover crops, no-till and diverse crop rotations that store carbon in the soil. The stored carbon is utilized by private companies to help reach their goals around sustainability.

PARTNERS

CPNRD, UBBNRD, Natural Resources Conservation Service, The Nature Conservancy, Ecosystem Services Market Consortium, Cargill, Target and McDonald's.

FUNDING

\$3,093,651 grant was signed for this agreement to be used over 5 years. Depending on the practices implemented, producers could earn up to approximately \$45/acre each year. Applications preapproved in 2023 shown in chart:

Field Office	Preapproved Applications	\$ Requested
Kearney	2	\$5,547.09
Lexington	2	\$36,450.00
Central City	5	\$273,786.00
Grand Island	0	\$0.00
Osceola	1	\$900.00
CPNRD Apps	10	\$316,683.09
Aurora	2	\$96,500.00
Seward	5	\$202,120.00
York	3	\$169,768.80
Geneva	1	\$55,750.00
Osceola	1	\$53,000.00
Hastings	1	\$18,654.00
David City	1	\$79,227.19
UBBNRD Apps	14	\$675,019.99
TOTAL Both NRDs	24	\$991,703.08

Three Watershed & Flood Prevention Operations (WFPO) Cooperative Agreements Approved

NRCS will pay 100% of the cost of 3 new watershed plans, up to the approved funding amount. The Improvement Plans include Lower Wood River Watershed in Buffalo, Hall & Merrick counties; Spring/Buffalo Creek Watershed in Dawson County; Elm/Turkey Creek Watershed in Buffalo & Dawson counties.

GOAL: Create a new Watershed Work Plan-Environmental Assessment (Plan-EA) for these three Watersheds. This USDA-NRCS assistance will be a big help to the CPNRD in flood prevention and in planning for our future and protecting our customers lives and property.

PARTNERS: Central Platte NRD, USDA-Natural Resources Conservation Service (NRCS).

FUNDING: In total, funding available to the Central Platte NRD over the next few years for these new watershed agreements is \$2,092,500. See additional details on the WFPO projects on pages 18-19.

Conservation and U.S. Agriculture

Non-federal agricultural and forest lands cover approximately 70% of the lower 48 states or 1.4 billion acres. These lands produce strong ag and forest sectors, supply habitat for wildlife, filter groundwater supplies, regulate surface water flows, sequester carbon and provide open space and scenic vistas. Farming/ranching may or may not have negative environmental consequences including water and air pollution, soil erosion and loss of wildlife habitat.

Conservation Programs Today

USDA programs address conservation/environmental concerns in multiple ways:

- Educational and technical assistance, financial incentive payments through conservation on working farms, ranches, and forest lands, through - EQIP, CSP, RCPP etc.
- Conversion to conservation use to achieve specific environmental benefits - ACEP, WREP, Protection of ag lands from conversion to other uses - Farm and Ranch lands Protection Programs (FRPP)

Key Issues:

- Excess nutrients in rivers/streams
- Hypoxia in Gulf of Mexico - Chesapeake Bay
- Water availability
- Declines in soil condition
- Invasive species
- Endangerment of native species
- Rising greenhouse gases
- Renewable energy
- Demands on agriculture

Soil Conservation/Erosion Objectives

1. To establish adequate permanent cover on all Class VI & all Class VII land.
2. To establish approved cultural management practices, vegetative practices or structural measures, as needed on all lands to prevent wind and water erosion.
3. To safeguard the land for the continued production of food and fiber.
4. To establish erosion control measures, as needed on all industrial development sites, residential development sites, or road construction sites and other non-agricultural development sites.
5. To apply irrigation water management techniques to all of the irrigated land in order to properly conserve and efficiently utilize soil, water, fertility and energy.
6. To develop proper range and pasture use and management plans or programs in order to properly conserve and efficiently utilize those range and pasture areas.
7. To re-establish vegetative cover on those range and pasture sites classified as "poor" condition.

IV. Water Quality

GOAL: To protect and enhance the quality of surface and groundwater within the District.

QUALITY MANAGEMENT PROGRAM

The main source of groundwater pollution in the District is nitrate-nitrogen in amounts greater than the maximum contaminant level of 10 ppm (parts per million) allowed by the federal government. High nitrates are a problem in varying degrees throughout the District. Concentrations of sulfate, high iron and magnesium levels, along with high total dissolved solids in many areas, have potential for considerable problems in municipal supplies, particularly in areas where large quantities of water are used for industrial purposes. CPNRD will continue to work with producers, ag business operators, and the public to further reduce high nitrates in the groundwater.

Nitrates

CPNRD's Nitrogen Management Program was adopted in response to increasing high concentrations of large areas of nitrate-nitrogen in the groundwater and vadose zones (areas between root zone/ top of water table). High groundwater nitrates in some areas of the valley were first identified in 1961. Excessively high nitrates can lead to methemoglobinemia, known as "blue baby syndrome," has been associated with certain cancer risks, and are also a potential hazard to livestock. Commercial nitrogen fertilizer is the primary cause for high nitrates in groundwater in the Central Platte Valley. Public hearings and numerous meetings with farmers, crop consultants and fertilizer industry representatives were conducted to determine how best to implement solutions.

As a result, CPNRD adopted necessary rules, regulations, boundaries, and controls for the first quality management program to be included in the Groundwater Management Plan that became effective in 1987. When the Program started, Nitrate levels had increased 0.5 ppm per year to 19.24 ppm. Nitrate levels have been lowered through long-term management efforts by the NRD and landowners implementing efficient practices. The plan uses a phased approach, with lesser restrictions in areas below the maximum contaminant level and additional regulations applied to areas with higher nitrate concentrations in the groundwater. Because the phases are by area, individual wells in a Phase Area may be higher or lower than the designated range of nitrate concentrations.

(See Figure 9. CPNRD Quality Management Rules & Regulations on Page 25)

Uranium

Relatively high concentrations of anthropogenic (atrazine & nitrate) and geogenic (uranium & arsenic) water contaminants have been found in drinking water in rural Nebraska. More than 80% of Nebraska watersheds had birth defect prevalences above the national average (5 cases per 100 live births). Studies suggest that chronic exposure to the selected waterborne contaminants even below the legislated maximum contaminant levels (MCL) may result in birth defects; especially given the relationship between agriculture practices, water contamination and adverse health effects on children. Continuous monitoring of water in private wells and improvements to ag practices is suggested. Of the 62 irrigation samples that CPNRD took in 2020, 13 samples were above the MCL of 30 parts per billion. The landowners' wells that tested high were notified by staff.

GROUNDWATER MANAGEMENT PLAN

In May 2023, updates were approved to both the water quality and water quantity sections of the Groundwater Management Plan. The only change to the Water Quality section: Phase III trigger will be lowered to 10.1 parts per million (ppm) nitrate. The Plan became effective on July 1, 2023. Staff is updating the Rules & Regulations and the Board will consider action on the proposed changes when finalized. The phase triggers are:

- ⇒ Phase I: 0 to 7.5 ppm
- ⇒ Phase II: 7.6 to 10.0 ppm
- ⇒ Phase III: 10.1 ppm and above
- ⇒ Phase IV: Area where nitrate concentrations are not decreasing

(See map of the Phase Areas on page 26)

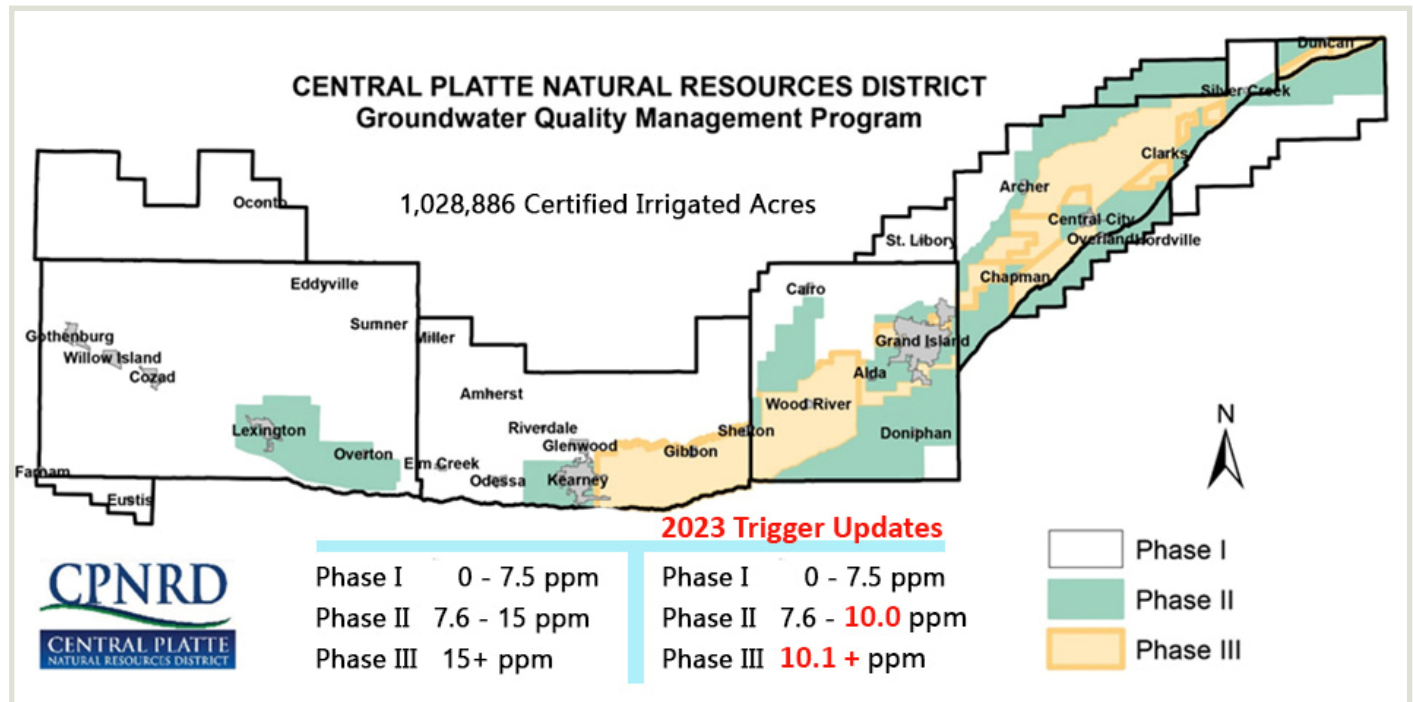
FIGURE 9. Irrigation Rules and Regulations

The Rules & Regulations are currently being updated to align with changes to the Management Plan.

Central Platte Natural Resources District Rules and Regulations Commodity crop growers must adhere to the following regulations Phase I - between 0 & 7.5 ppm; Phase II - between 7.6 & 10 ppm; Phase III - 10.1 ppm or higher Phase IV - Areas where nitrate levels are not declining at an acceptable rate				
	Phase I	Phase II	Phase III	Phase IV
1. Fall applications of N fertilizer on sandy soils are prohibited.	X	X	X	X
2. Fall N applications on non-sandy soils are prohibited until after November 1.	X	X	X	X
3. Application of commercial nitrogen fertilizer is prohibited on all soils until after March 1st.			X	X
4. Spring (after March 1) applications of commercial nitrogen fertilizer: (a) Split applications, either pre-plant, pre-emergent or post-emergent, when less than 50% of actual nitrogen is being applied as pre-plant or pre-emergent, (b) If more than 50% is applied as pre-plant or pre-emergent, the operator is required to furnish documentation that a nitrogen inhibitor was used at the recommended rate, (c) In cases where the total application is 80 lbs per acre of nitrogen or less, a nitrogen inhibitor is not required, (d) No restrictions if all nitrogen fertilizer is applied post-emergent.			X	X
5. Farm operators using nitrogen fertilizer must be certified. Certification good for 4 years.		X	X	X
6. All crops must be reported (including corn, sorghum, potatoes, beans, alfalfa, small grains and any other commodity crop), on District approved report forms. Reports will be due each crop year by March 31st and include the legal description of well(s) irrigating the crop, acres of each crop and the crop planted. Soil and water tests are <u>not</u> required on crops other than corn, sorghum and potatoes.		X	X	X
7. In addition to the above, the report for corn, sorghum, and potatoes must list the following for the upcoming crop year : expected yields, water and soil test results, credits for past legume crop and manure or sludge, and the UNL's recommended nitrogen application rate. The report will also include the following for the previous crop year : actual yields, fertilizer applied as pre-emergent or sidedress, and irrigation water applied. Laboratory reports for soil, water and manure analysis, and an inhibitor receipt if used, must be submitted with the annual report.		X	X	X
8. An annual deep soils analysis for residual nitrogen (NO ₃ -N) on each field or 80 acre tract growing corn, sorghum or potatoes, whichever is smaller, with the analysis to be conducted by a laboratory participating in the University of Nebraska Soil Testing Program. A composite sample tested must consist of a mixture from no less than one three-foot probe every five acres. The report from the lab must be attached to the annual report.		X	X	X
9. A groundwater analysis for nitrogen (NO ₃ -N) content on each field growing corn, grain sorghum or potatoes must be made annually . The report from the lab must be attached to the annual report.		X	X	X
10. If manure or sludge is used, a credit for the nitrogen in the manure or sludge must be used in the calculation for the nitrogen recommendation. A laboratory analysis must be conducted for each source of manure or sludge and attached to the report form.		X	X	X
11. A credit for previous year's crop if the previous year was in beans, alfalfa, etc., must be used in the calculation for the nitrogen recommendation on corn and sorghum.		X	X	X
12. Operators must monitor groundwater applications to allow for the better management of fertilizer applications and control leaching of nitrates.		X	X	X
13. Nitrogen applications must not exceed District recommendations with a copy of a fertilizer receipt attached to the annual report.				X
14. NRD staff work with individuals on best management practices				X
15. The expected yield to be set by the District (last 5 year average of regulated crop + 5%)				X
16. Phase II, III and IV areas can be established based upon nitrate levels not declining at an acceptable rate or based on N levels in the Vadose Zone as determined by the Board of Directors.		X	X	X

FIGURE 10. GROUNDWATER QUALITY MANAGEMENT PHASE AREAS

Note: A new map is being developed to align with the new triggers.



Phases are designated in localized regions of the District where District-collected water samples indicate higher water quality concerns. Other factors, including proximity to a municipal water supply and vadose zone nitrates are also used in determining the Phase Areas.

Each irrigation season District staff collects water samples from historically analyzed wells. This is done on a 3-year rotation. Staff collected water samples in Hall, Howard, and Buffalo counties in 2023. The focus of sampling will move to Custer, Dawson, and Frontier counties in 2024. And in 2025 staff will collect water samples within Central Platte's boundaries of Hamilton, Merrick, Nance, Platte, and Polk counties.

Past Management Changes

2016: Parts of southern Hall and northern Hamilton counties south of the Platte River were transferred from Phase I to Phase II Groundwater Management Area due to increasing nitrate levels.

2017: Changes combined and updated the Rules & Regulations for the NRD's groundwater management programs into the *Groundwater Management Plan Rules & Regulations-General Provisions & Procedures for Enforcement*. Two major changes included cease and desist enforcement procedures and removal of 2-in-10 irrigation rule.

Online Reporting Form

2015: GIS Workshop developed a new online system for \$64,500 to allow producers to fill out annual Groundwater Management forms online. Using their User ID, producers may log in throughout the year to record their water and soil test results and their actual yields prior to submitting the form. Producers benefit by having all past information in one location. The system significantly reduces administrative time for staff to manually enter the 6,000-7,000 forms submitted each year. Meetings were held across the District with producers to demonstrate how to use the new online form.

2018: Site was updated to improve usability for staff and producers, and to provide a better format to inform producers on recommended nitrate applications. 850 producers participate in the Nitrogen Management Program. Producers submitted 4,660 annual reports for the 2022 growing season. The data provided by the producers is used for the Program.

Violations

Violation notices were sent out to 53 operators by certified mail for not submitting the required reports for the 2022 crop year in Phase II/III areas of the Water Quality Management Program. As of July 2023, two producers remained

out of compliance and were turned over to legal counsel for violating the cease and desist order. In 2022, a Polk County landowner received a Cease & Desist Order for 3 offenses of irrigating non-certified irrigated acres. He violated a prior Order and a court order to cease irrigation until in compliance. That individual has a second court hearing in August 2023 for the unresolved violations.

2022: The Board approved providing IR imagery as evidence for Groundwater Quality Program violations. Staff will notify the landowners and producers a final time to attempt to compliance before turning the violations over to legal counsel. Infrared (IR) photography used by staff to see changes in irrigation practices. IR Imagery of the entire District has been taken in August each year since 2004 and is used to determine if irrigation is present on acres that are not certified. IR imagery has been submitted as evidence to courts in the past to enforce irrigated acre compliance for the NRD's Groundwater Quantity Program.

PROJECTS AND RESEARCH - UNIVERSITY PARTNERSHIPS

Central Platte Demonstration Projects

The Nitrogen and Irrigation Management Demonstration Project, implemented in 1984, is one of the longest-existing demonstration projects in Nebraska and possibly the nation. Other state and national projects have been modeled from this educational project. The Project was initiated following the Hall County Water Quality Special Project to show that new practices that impede nitrogen fertilizer from leaching into the aquifer are successful. Farmers with varying soils and conditions are recruited to work with UNL and CPNRD to use best management practices to demonstrate that nitrates can be managed efficiently and effectively while maintaining crop yields. The Platte Valley Project included areas where nitrate-N concentrations were in excess of 40 ppm; due to a combination of coarse-textured soil, shallow groundwater, intense irrigation and over-application of fertilizer.

Over 400 demonstration sites have been located on producers' cornfields where randomized levels of Nitrogen were applied in increments of 50 pounds above and 50 pounds below the calculated recommendation based on the UNL algorithm. These plots provided over 290 field days/meetings. Research on field length, producer applied/producer harvested plots, were instrumental in the adoption of practices by producers. A producer survey conducted in 1997 showed that 54% tested irrigation water for nitrates, 34% used a nitrification inhibitor, and 70% attended a tour or meeting on best management practices to protect water quality.

The project emphasis changed over the years as new technology become available to the ag sector. CPNRD's cost-share programs are modified to accommodate new techniques and equipment to help with better management practices. Initially, emphasis was given to reducing fertilizer input by counting contribution from residual sources; however, the leaching problem has two components: fertilizer and water. Reducing water applied produces less leaching than just reduction of fertilizer inputs. Monitoring water usage is mandatory in Phases II/III, since research indicated that most farmers didn't know the amount of water used during irrigation. Newest technologies used include ET gages, watermark sensors to schedule irrigation, soil moisture capacitance probes, polymer material, slow and controlled release Nitrogen products, and cover crops in seed corn. Extension and demonstration efforts in areas of irrigation management have also been a part of the project. Field days and articles educate producers on results of the demonstrations and on best management practices.

Crop Irrigation & Demand Network

Started in 2013, this program receives data collected by telemetry to provide a vast amount of real-time data by monitoring different types of irrigation systems. CPNRD is able to view water usage and soil moisture from fields where producers installed telemetry equipment. Participants may check their GPM used, inches applied per day and throughout the season, and soil moisture readings. The amount of water pumped and precipitation are measured to provide data to develop irrigation efficiencies by equipment type, soil water holding capacities and crop type.

The program was initiated by CPNRD in 2013 with \$60,000 budgeted for the project and expanded by a \$750,000 NeDNR grant in 2014. There have been 77 sites across the District: 11 sites in 2013, 30 sites in 2014; and 36 sites in 2015. The sites include 52 pivots, and 18 gravity sites. The water pumped, system pressure & rainfall are monitored at all locations, with soil moisture monitored at 30 locations. Partners include: CPNRD, NeDNR, Nebraska Extension, Seim Ag Technology and McCrometer.

Cover Crops

Producers are working with UNL Extension/CPNRD to research effects of cover crops on soil health. Field days are held annually to show crop mixes planted on different dates and to compare aboveground biomass with below ground; as well as best mixes for grazing. Research includes whether compaction and infiltration are impacted, how biological activity and organic matter are affected, which mixes provide the highest quality forage for grazing, and how much crop usable nitrogen can be expected. Partners include UNL, NRCS, CPNRD, Arrow Seed, Green Cover Seed and O'Hanlon Seed Inc.

Cover Crop Impact Study

2017: CPNRD/LLNRD hired EA Engineering in the amount of \$320,000 for a four-year study to determine impacts on groundwater due to cover crop management. The Lower Loup Basin and Central Platte River Basin have diverse soil type and cropping practices that affect both water quantity and quality. The study is researching the general influence of cover crops on soil moisture, groundwater recharge and Nitrogen movement in the soil between the South Loup and Wood rivers with groundwater declines. Includes both irrigated & dryland cropped fields and spans multiple years. Landowner ID, mobilization and installation of equipment was completed 2017.

2019: Additional MOU was approved with LLNRD for a 3-year study in Sub-Area 9 to determine amount of water required to grow cover crops.

2021: EA Engineering presented a progress report comparing irrigated and dryland cropped fields, targeting northern Buffalo County where the Lower Loup and Central Platte NRDs have experienced localized groundwater declines. The study has shown minimal seasonal impact of groundwater availability on fields that implement cover crops compared to non-cover crop fields. Nitrate sampling to compare groundwater contamination on cover crop and non-cover crop fields will continue through June 2023.

UNL Vadose Zone Research Project

In 2016, an agreement with UNL was approved for \$80,000 to revisit 27 vadose zone core sites originally collected in the 1990s, and to determine where additional cores may best characterize nitrate storage and estimated transport rates to the water table. The 27 sites collected between 1990-1996 were digitized and used to compare profiles to determine how fast nitrate is moving and whether changing land use management has resulted in reduced loading of nitrate in the vadose zone.

In June 2021, final results from the study conducted by UNL documented 27 deep vadose zone cores monitored in the 1990s and analyzed them to characterize nitrate, ammonia, and moisture content under different land use; as well as estimate stored nitrate-N and nitrate transport rates. The wells sampled showed a 10% reduction of vadose zone nitrate in the groundwater since the 1990s; however, there was a significant amount of of nitrate-N per acre. Nitrate transport rates ranged from 0.9 to 2.5 ft/year.

Phase 2 areas measured higher than average groundwater nitrate-N. Both gravity and center pivot irrigated crop land were studied to compare changes in nitrate storage under 24 sites. Overall averages show vadose zone nitrate about 30% higher under gravity irrigated land. The study also found several cores with over 2,000 lbs./acre nitrate-N and significant concentrations of ammonia at depth in many locations. Further investigation of Phase 2 areas and locations with vadose nitrate >2,000 lbs/acre was recommended.

Project SENSE

UNL's Project SENSE (Sensors for Efficient Nitrogen Use & Stewardship of the Environment) pilot program promotes in-season nitrogen fertilization for corn to improve efficiency of N fertilizer applications with canopy sensors. Other participants: Upper Big Blue, Lower Platte South, Lower Platte North, Lower Loup NRDs, NRCS, and Nebraska Corn Board. Results show the use of crop canopy sensors for in-season Nitrogen applications from 2015-2017 resulted in an average profit increase of \$13.21/acre. Nitrogen rates were 20% less than comparable grower practices with an average yield reduction of 2.6 bu/ac (1% less than grower yield.)

Testing Agriculture Performance Solutions (TAPS)

CPNRD began funding the TAPS program in the amount of \$1,000 annually since 2018. TAP's teams work together to find solutions through innovation, entrepreneurialism, technology, improved techniques and cutting-edge methodologies for farms to maintain profitability, sustainability, and productivity.

District Agronomist

As of July 2023, funds for a District Agronomist position had been transferred from USDA to UNL. The Board will consider an agreement with UNL to advertise the position. USDA will provide 50% cost share for the Agronomist position through UNL for three years. The focus will be on crop production, nitrogen loss, ground-truthing crops and soil models developed by the USDA Adaptive Cropping Systems Lab in Beltsville, Maryland. The modeling process hopes to develop decision support tools for producers that will be realistic, readily available and simple to use. This position will also work with Dean Krull, UNL/CPNRD Demo Project Coordinator.

UNMC Health and Water Quality Research

The University of Nebraska Medical Center's (UNMC) health and water quality research results show that Nebraska has one of the highest rates of pediatric brain cancer in the nation. UNMC and other states have found a correlation between nitrogen fertilizers, animal and human waste. The greatest exposure has been found in agricultural areas and private wells. Numerous scientific studies have shown that the high concentration of nitrate in drinking water has been linked to Methemoglobinemia, colorectal cancer, thyroid disease and neural tube defects (birth defects of spine, brain and spinal cord).

WATER QUALITY PROGRAMS - STATE/CPNRD

Decommissioned Well Program

The potential danger and damage abandoned wells may cause to groundwater supply is a concern. CPNRD informs landowners to locate, fill & seal wells, cisterns, cesspools, and similar cavities on their property. The most dramatic danger caused by improper well abandonment is a hole into which children, animals, or equipment might fall. A more likely danger, though, is the creation of a path through which contamination of the groundwater might occur. Abandoned wells that have not been properly filled and sealed can act as a direct conduit for pollutants to the water supply beneath the earth's surface. State law requires abandoned wells be properly sealed. NRDs, the State of Nebraska and NRCS provide well owners with financial and technical assistance to get the job done right through well decommissioning programs.

Cost-share is available for old irrigation wells (60%), up to \$500 on wells that pump 50 gpm or less, \$750 for wells pumping over 50 gpm, and for hand-dug wells up to a \$1,500. CPNRD stopped providing cost-share for replacement wells in 2013. Licensed water well contractors/licensed pump installation contractors are required to abandon the well and verify the water well was decommissioned in accordance with state law, standards, rules & regulations.

NEBRASKA DEPARTMENT OF ENVIRONMENT & ENERGY (NDEE)

Chemigation Program

The Nebraska Chemigation Act is administered by Nebraska's NRDs and Nebraska Department of Environment & Energy. The law requires a person directly involved in calibrating/monitoring a chemigation system to be certified to help ensure that ground and surface waters are not contaminated by backflow of chemicals from irrigation water application systems used to apply crop nutrients and pesticides (chemigation). To become a certified applicator, the person applying the chemicals must attend a training session and pass a written exam to verify their knowledge of the Chemigation Act requirements. UNL Extension provides training and results of the exam. NDEE issues the chemigation applicator certifications to persons who pass the written test. CPNRD certification is valid for 4 years, after which renewal permits are required.

Chemigation Fees Application fee-\$60 Special permits-\$60 Annual renewal- \$20 Emergency permit- \$500
Emergency permits must be approved within two working days and can't be issued on weekends/holidays.
Permit holders and certified applicators are required to sign all applications. If staff is required to make a second trip to complete a chemigation inspection, a \$50 fee is charged to the permit holder/applicator. If staff is required to make a third trip, the landowner is charged a fee of \$100.

**FIGURE 11. 2022
Chemigation Report**

Applications	New	Renewal	Emergency	Total	Inspections
Approved	190	2,191	1	2,382	861
Fees	\$11,400	\$45,500	\$500	\$57,400	

Irrigation Run-Off/Erosion Rules and regulations designed to control groundwater irrigation runoff have been in effect since 1977 to follow the Erosion & Sediment Control Act. Updates in 2017 included: sheet and rill erosion added, ephemeral gully erosion, soils updates, and changed governing authority. The plan allows NRDs to petition the District Court for a Cease and Desist Order and removed 90% cost-share previously required for NRDs to provide for erosion control practices. NRCS's new requirements for control of ephemeral gully (concentrated flow) erosion were added. As of December 31, 2019, if erosion is found on a producer's property, the producer is required to develop a plan to use conservation practices to help treat this type of erosion for conservation compliance and to remain eligible for USDA program benefits. Those practices include no-till, cover crops, terraces and waterways.

Groundwater Quality Clearinghouse In 2021, NDEE launched the Nebraska Groundwater Quality Clearinghouse website with over 1.6M sample results from 33,000 irrigation well locations taken by NRDs. Key features of the map are well locations, nitrate measurements including 281 minerals and chemicals. It also showcases aquifer locations, topographic regions and bedrock geology. Farmers can check the composition of existing groundwater for chemical content to see amount of fertilizer needed and locations with land suitable for raising livestock. Website address: clearinghouse.nebraska.gov 2023: Platte Basin meetings were held with NDEE to discuss how NDEE and NRDs can assist each other with water quality concerns and on respective programs. Discussion is ongoing.

Cornhusker Army Ammunition Plant (CHAAP) The Corps of Engineers and NDEE held a meeting at the CHAAP to review cleanup procedures and process. All extraction wells were shut down in November 2019. The current analysis shows that the RDX plume is shrinking and concentrations are declining. Groundwater is continuing to be monitored. NDEE reported on a groundwater study in the Archer area where landowners were concerned about groundwater contamination from CHAAP. The study showed no evidence of contaminants in any of the water samples. Arsenic, iron, and manganese are the three major contaminants that were found in the water samples.

PRODUCER ASSISTANCE

Buffer Strips Nebraska Buffer Strip Program was established in 1998 to use filter strips to reduce the amount of chemicals that run off farm fields into the streams around the state. Cost-share is available to replace cropland with grass buffer strips along banks of perennial/intermittent streams or permanent bodies of water. CPNRD administers cost-share funds for the Buffer Strip Program provided by the Nebraska Department of Agriculture. The NRD had 15 contracts in 2023 that totaled \$28,512.53.

Precision Conservation Program As of November 2022, 60 producers had signed for improved farming practices on 91,000 acres including no-till, strip till, 10% nitrogen reduction applied and autonomous irrigation equipment. A new program was initiated in 2023 that provides financial incentives up to \$7,200 for producers to switch from diesel to electronic powered equipment.

Nitrogen Use Efficiency In 2022, CPNRD staff released a first view of the Nitrogen Use Efficiency (NUE) Dashboard being developed to enable producers to compare UNL's recommended nitrogen rate with the actual nitrogen applied on each of their fields. The NUE_T Dashboard shows all available nitrogen sources to calculate total nitrogen use efficiency and calculates the cost of application on each field vs the recommended rate.

2023: Nebraska Corn Board, NARD and 17 NRDs partnered with Longitude 103 to develop Producer Connect, a web and mobile application suite. The app would allow producers to access their crop reporting data and fertilizer recommendations based on yield goals. The goal is for producers to optimize inputs to enhance ag profitability, water quality and irrigation efficiency. Producer Connect is in its initial stages of development and expected to launch in January 2024. The initial roll out will be in Phase 2 and Phase 3 Groundwater Quality Management Areas and areas that have irrigation allocations. The one-time data migration fee is \$19,000 and the Annual Service Fee for the NRD Application Suite is \$19,000.

Imagery-Based Fertigation

2022: Sentinel Fertigation CEO, provided results of imagery-based fertigation trials through N-Time™ FMS, their flagship software. The study showed that 96% of farmers increased efficiency with 43 lbs/acre of average nitrogen savings with N-Time recommendations. Producers in the trial increased their profitability by \$27.91/acre average versus typical management. CPNRD hosted two of Precision Conservation Sunset Seminars with producers Arnie Hinkson of Wood River and Don Batie of Lexington, held by Sentinel Fertigation in central Nebraska.

Imagery-Based Fertigation *(continued)*

In 2023, the Board approved the Sensor-Based Management of Fertigation Cost Share Program for the growing season. It provides \$11/acre with a two-year commitment and a maximum of two fields or 320 acres. The program is open to the entire District.

The goal of the cost-share is to provide financial assistance for landowners/operators to utilize a service that delivers real-time, imagery-based nutrient recommendations directly to users throughout the growing season. The Board's goal is for producers to try this new satellite technology to encourage efficient management of nitrogen to address water quality management concerns in the District. To be eligible land must be pivot or SDI irrigated with priority given to those using a chemigation system.

Water Quality Objectives

1. Reduce groundwater nitrate levels in areas that exceed 10 parts per million (ppm), the maximum contaminant level amount allowed by the federal government.
2. Maintain groundwater nitrate levels at or below permitted levels in areas that are less than 10 ppm.
3. Monitor groundwater quality for other contaminants with nitrates.
4. Develop necessary groundwater quality management program(s) if other non-point source contaminants show signs of approaching or exceeding maximum safe levels.

IV. Water Quantity

GOAL: To assure an adequate supply of water for feasible and beneficial uses, through the proper management, conservation, development and utilization of the District's water resources.

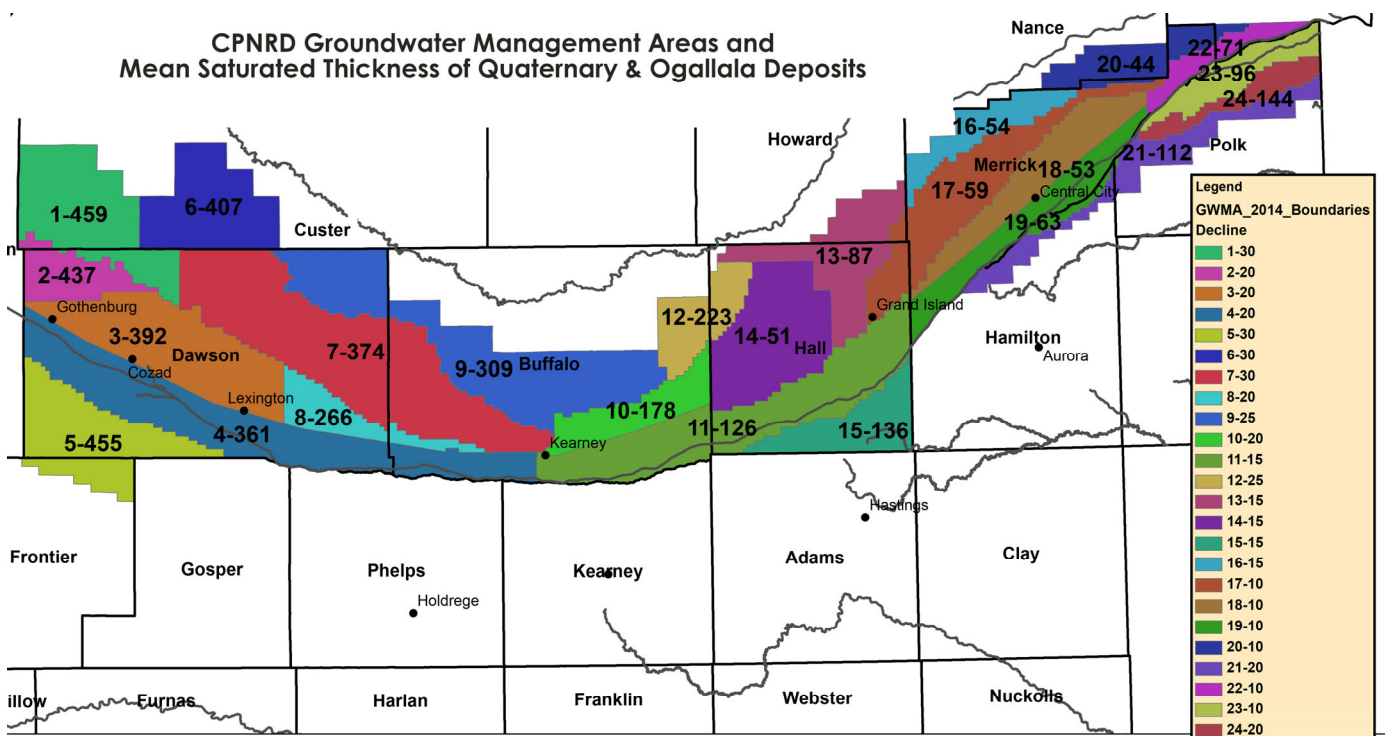
Being in the Platte River Watershed, the District's primary surface water feature is the Platte River, however, the majority of farmers rely on groundwater for their irrigation needs since groundwater is abundantly available across the District. Water supply is under continuous monitoring and a groundwater supply management plan to address potential shortages and has been in effect since 1987. Groundwater aquifer declines have been documented where irrigation use is the heaviest. Groundwater is the District's chief source of drinking water and primary economic resource, since we depend on it for irrigation; which enables us to have a strong economy rooted in agriculture. Water tables declined in the late 1970s and early 1980s. Rainfall increased in the mid-1980s-1990s, which caused water tables to rise, but the historic record suggests complete groundwater recovery from the dry periods during the wet periods does not always occur in all areas. Careful management of the resource is necessary. Aquifer thickness varies from 25' to 300' + across the district, so a drop of one foot has a more significant impact on some parts of the District than others.

Groundwater depths and thicknesses were charted and used to help establish 24 groundwater supply management areas. Besides the aquifer conditions, the soils and topographic characteristics are similar in each management area. The 1982 groundwater levels were established as the standard for the management plan since rainfall and recharge were above average several years since 1982. The maximum acceptable decline (MAD) for each of management area was calculated, establishing a margin of safety in each area. The number of Ground Water Management Areas increased to 26 with the updated Groundwater Management Plan in 2023. The level of irrigation development (as well as previous hydrologic characteristics) went into consideration for subdividing GWMA 7 and 9.

In 1987, the board established the Groundwater Management Plan with a phased program to implement controls when needed. When developing the original Plan, it was determined that as an area's average groundwater level declined through that margin of safety, controls should be mandated to slow the decline.

The maximum acceptable decline ranges from 10' in the eastern end of the District to 30' in portions of the western end of the district. If the water table falls to 50% of that maximum decline (5'-15'), Phase II would go into effect for any area or areas affected, triggering mandatory reductions in irrigated acres and establishing spacing limits for new irrigation wells. Further declines to 70%, 90% and 100% of the maximum acceptable decline trigger Phase III, IV and V controls respectively, mandating additional cutbacks in irrigated acreage and increased spacing limits for

FIGURE 12. MEAN SATURATED THICKNESS MAP



new wells. With the differences in aquifer depth and conditions, it is conceivable that some areas could be in higher phases while other areas may always be in Phase I.

GROUNDWATER MANAGEMENT PLAN UPDATE

2019: Olsson was selected to rewrite the NRD's Groundwater Management Plan (GMP) for \$102,000.

2021: Contract was amended for additional work in the amount of \$13,000.

2022: Proposed updates were reviewed by the Water Utilization & Water Quality committees. Changes included new data acquired including hydrogeologic, climate and socio-economic data of the groundwater resources. Plan triggers, data sets and maps, and 2022 COHYST prediction 50-year simulations were added.

Following a public hearing in May 2023, the Board approved updates to both the water quantity and water quality portions of the Plan; which became effective on July 1, 2023. Changes to the water quantity section include:

- 1) **Phase I** - Trigger changed to a range of 0-25% of the Maximum Acceptable Decline (MAD).
Phase II - Applies to any area with declines greater than 25% of the MAD.
Phase III - Changed to 50% decline in water levels relative to the MADs.
Phase IV - If water levels in a given GWMA continued to decline and reached 75% of the MAD.
Phase V - Implemented if Phase IV MAD is 100% reached or exceeded.
- 2) The preferred option for groundwater quantity management controls related to each phase is measuring devices and a limit on the volume of groundwater pumped.
Phase I - No additional management requirements.
Phase II - Remains as is with limitations on transfers and supplemental wells.
Phase III - When trigger is reached, measurement devices required on all active irrigation wells in the GWMA, and the owner/operator of every active well required to report annual water usage to the NRD.
Phase IV - When trigger is reached, CPNRD will allocate groundwater use to prevent the GWMA from reaching the MAD.
Phase V - If initial allocation is insufficient to prevent reaching the MAD, and that MAD is reached/exceeded, it would require a reduction of the allocation.
- 3) Ground Water Management Areas 7 and 9 were subdivided due to differences in irrigation development that have occurred across those GWMA's. In 2019, two Water Program Updates were held in Amherst and Kearney to address groundwater decline concerns in Sub-Area 9 (Buffalo/northern Dawson counties) where groundwater levels are down an average of 12.39' since 1982. Groundwater levels have continually declined since 2001. Open discussion sessions provided landowners and producers the opportunity to visit about their concerns and to give thoughts on management of the aquifer. NRD staff stated that it would be preferred that landowners reach the goal to stabilize groundwater decline in the area on their own; and if groundwater levels continued to drop over the next few years, regulations would need to be implemented. The public and 300 landowners who have certified acres in the decline area were invited to attend.

Changes to Rules & Regulations

The Rules and Regulations are updated when needed, including changes to the Groundwater Management Plan. Below are changes made to the Plan since 2017.

2017: Cease and desist enforcement procedures and removal of the 2 in 10 irrigation rule.

2018: The 180-day temporary stay to update the Rules & Regulations for the fully and over-appropriated areas was lifted. During the stay, the acre transfer tool was updated & new depletion numbers were implemented. Language in the well section and a timeline to receive transfer applications was established for September 1-March 1. The number of years transfers are not allowed within a GWMA where declines are more than the 25% allowable level was increased from 2 to 5 years.

2023: The Rules & Regulations are currently being updated to align with changes to the Management Plan.

Groundwater Levels

Between 450-500 wells are measured each spring and fall to monitor groundwater levels as part of the Groundwater Quantity Management Program in conjunction with Conservation & Survey Division, UNL and USGS. Measurements are taken throughout the District to monitor groundwater levels. The 1982 groundwater levels were established as

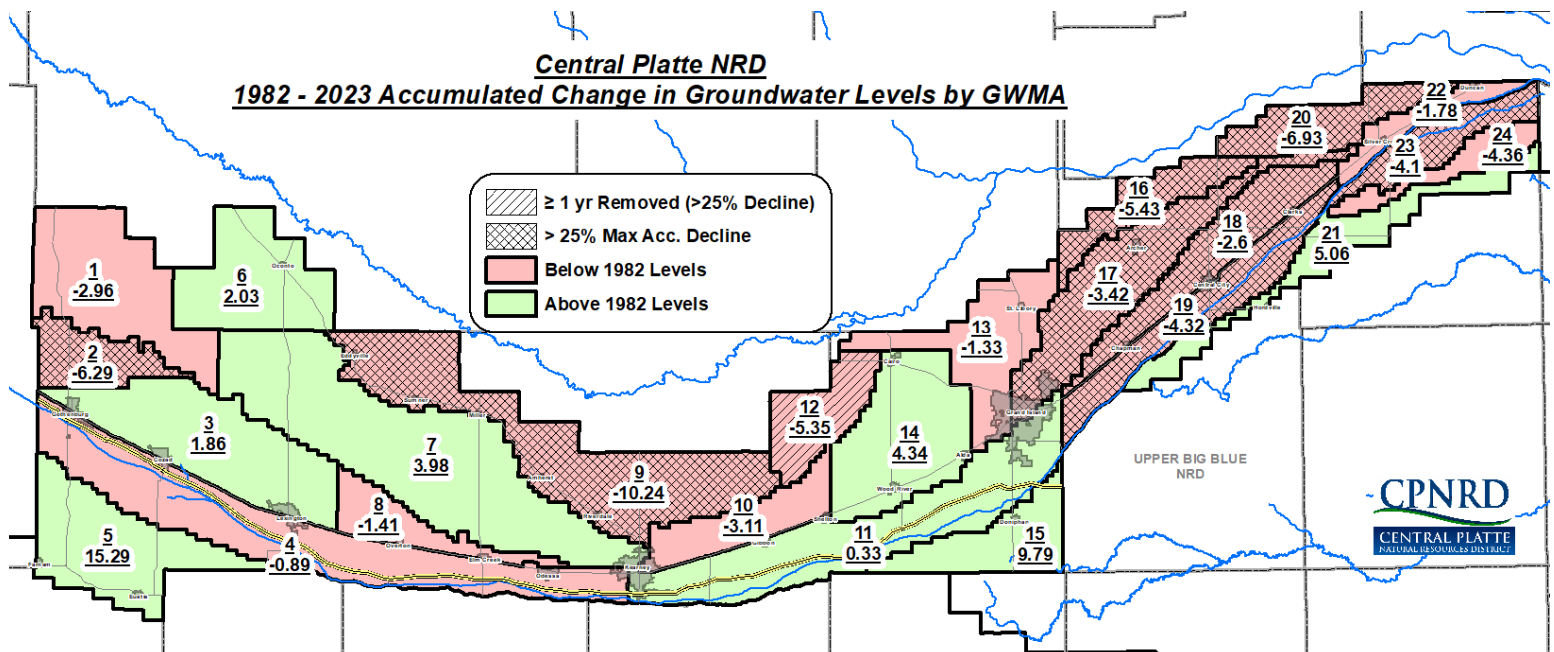
the benchmark year to compare groundwater level changes as part of the Groundwater Management Plan implemented in 1987. The change in groundwater levels is an average, based on the wells measured in each sub-district and used to compare mean saturated thickness for Quaternary and Ogallala deposits. Average saturation zone ranges from 459' in Custer County to 44' in Nance County. Groundwater levels vary over time based on precipitation amounts and irrigation use. Level changes have been minimal in most areas in spite of an additional 250,000 acres of groundwater irrigation being developed between 1982-2004, the year the NRD and NeDNR placed a stop on new irrigated acres and new wells.

Spring 1982 – Spring 2023

The spring 2023 static groundwater levels showed declines in all 24 GWMA's within CPNRD compared to the groundwater levels in 1982. There were 376 wells, 4 wells per township, were included in the assessment. The entire District had an accumulated loss of -1.30 feet and -0.80 feet since 1982. Four of the GWMA's (2, 16, 17, 18) triggered below 25% decline. Three GWMA's continue to show declines and are under additional management restrictions :

- ⇒ GWMA 9 is down 1.18 ft. from the previous year (-9.06 ft. to -10.24 ft).
- ⇒ GWMA 16 is down 3.26 ft. from previous year (-2.17 ft. to -5.43 ft.).
- ⇒ GWMA 20 down 2.15 ft. from previous year (-4.78 ft. to -6.93 ft.).

FIGURE. 13 SPRING GROUNDWATER LEVELS



Monitoring Wells

CPNRD staff measures 450-500 wells throughout the District each spring and fall to monitor groundwater levels as part of the Groundwater Management Program; 116 active monitoring wells have been installed since 1993. New wells are added annually to replace irrigation wells that are no longer accessible to measure static water levels.

2021: Downey Drilling constructed 12 monitoring wells in Buffalo & southern Hall counties for \$37,749.50

2022: 9 wells were constructed in Hall & Howard counties for \$21,212.96

2023: 13 were constructed in/near Merrick County for \$53,322.85

CPNRD staff measures 450-500 wells throughout the District each spring and fall to monitor groundwater levels as part of the Groundwater Management Program. The new wells will replace irrigation wells that are no longer accessible to measure and may be used to monitor nitrate in the groundwater. CPNRD has dedicated monitoring in all of the counties in the District with the exception of Hamilton County.

Nebraska Mesonet

Beginning in 1981 with five observing locations, the statewide weather monitoring network now has 56 stations in 45 Nebraska counties. The Mesonet was initially designed with the agricultural community in mind but is now broadened in scope to serve as an environmental monitoring program. Mesonet stations are equipped to observe hourly conditions for the following variables: air temperature, humidity, liquid precipitation, wind speed & direction, solar radiation, barometric pressure, soil temperature and soil moisture. As part of station installation and routine maintenance, images of the weather station and surrounding area are taken. The network is supported by the State of Nebraska in collaboration with the NeDNR, and the Institute of Agriculture and Natural Resources at UNL. NRDs, agencies and individuals contribute to network operations through service agreements for specific stations. CPNRD has participated in the Mesonet since 2009 and currently provides \$18,000 annually for six stations.

Drought Mitigation Plan

2018: JEO received \$100,000 to develop CPNRD's Drought Management Plan. Objectives are to identify District vulnerabilities, create a methodology for monitoring drought conditions, and identify processes to respond to and manage the impacts of future drought events. The Plan assists CPNRD in water resources management for a more sustainable and stable water supply for all users across the district. The NRD received a Water Sustainability Fund grant from the NRC to develop the plan.

2019: A Drought Tournament was held for the drought mitigation planning. CPNRD is currently working on an Extreme Event Reporter (GIS-based tools).

IRRIGATION MANAGEMENT**Suspension on Drilling New Wells & Expansion of Irrigated Acres**

2003: Board imposed a temporary suspension of drilling new wells within parts of the District. The suspension allowed CPNRD and NeDNR to look over the conflicts between groundwater and surface water to determine if a problem exists. A study of CPNRD's surface and groundwater supplies was developed.

Variances were granted if construction of a new well was necessary to alleviate an emergency situation involving provision of water for human consumption or upon other good cause shown. Public hearings were held throughout the district in 2003 to discuss the temporary suspension. Of 450 in attendance, 237 responded to surveys handed out at the hearings with 166 of those who responded were very opposed.

Three situations influenced the suspension. The first was a drought cycle in Nebraska, which exemplified the need to assess the water budget. The other influences were LB962, following a recommendation by the Water Policy Task Force; and unknown future requirements of the Platte River Recovery Implementation Program (PRRIP).

Nebraska was required to offset any new depletions after July 1997. If the State doesn't pick up their obligation, the NRDs or water users are required to offset depletions from post-1997 wells by giving up part of their irrigated acres.

2004: NeDNR determined that the Platte River Basin was fully appropriated and over-appropriated upstream of Elm Creek. Changes were made so existing surface and/or groundwater users would not be faced with less water supply. Wells not subject to the suspension included: wells pumping less than 50 gpm, replacement wells, dewatering wells pumping less than 90 days and test hole wells.

2006: The Board placed the entire District in a temporary suspension area by adopting the *Rules & Regulations for Closing the Management Area to the Issuance of New Well Permits, Preventing Expansion of Irrigated Acres, and Increased/Expanded Uses of Groundwater for Other Beneficial Purposes*.

The suspension was necessary after NeDNR designated the entire District as fully appropriated. CPNRD's Rules and Regulations were combined as the *Nebraska Groundwater Management and Protection Act: General Provisions and Procedures for Enforcement*.

CERTIFIED IRRIGATED ACRES

All irrigated acres are certified, including variances and water bank transactions. In 2006, CPNRD began certifying irrigated acres by mailing packets to landowners in Custer, Dawson and Frontier counties. Landowners were provided aerial maps and the number of acres that CPNRD had on record as irrigated taken from infrared imagery. If a landowner disagreed with the number of acres provided, they were required to show proof of their claims by obtaining records from their local FSA office including an aerial photo and a printout of irrigated land. NRD staff

took appointments on location. Most changes made were less than 10 acres while 1/3 of the fields determined as irrigated needed no changes at all. The deadline to certify irrigated acres was set for December 31, 2014.

At the end of 2022, the NRD had a total of 1,018,829 irrigated acres of which 936,817 acres are groundwater only; 5,239 acres are surface water only and 76,773 acres are co-mingled use. The overall irrigated acres base increased 2,194 acres from 2010 to 2022.

Transfers of Irrigated Acres

Landowners may request a change in the location of certified irrigated acres (transfer) provided that the same amount of water that would be depleted from the river over a 50-year period from consumptive use of ground water withdrawals are retired from use (offset); and the offset occurs at the same time, rate, and location as the depletion identified by the COHYST model. The location of the offset is considered the same as the depletion if the offset is west of the depletion, no more than 1 mile east of north/south line drawn along eastern edge of area causing the new depletion, or within the same basin of influence. Offsets must be at least 1 acre and excess water would accrue to the benefit of streamflow.

2022: CPNRD allowed 114 transactions of water use transfers, including 1,349 new irrigated acres and retiring 177 groundwater acres. 2,626 total acres were affected. Each transfer resulted in no net increase in stream depletions when computed using the CIR offset calculator developed from COHYST.

Transfer Website

2007: CPNRD launched the first irrigation certification website in the state, developed by GIS Workshop. It allows public access to documents showing landowners number of irrigated acres, infrared imagery taken by CPNRD, and registered wells. Users may search for specific parcels of land by using the clickable map interface or by searching the site by landowner/tenant name, legal description or field ID number. The site allows landowners to view and print aerial photos of land development and improvements since 2003.

Website Overhaul New search options, access drawing tools to create proposed transfer maps, and access to print maps were added in 2011 and 2015. Public and staff sites are linked and updated simultaneously. Website address: cpnrd.gisworkshop.com.

Irrigation Violations

2023: 56 landowners/producers irrigated land that wasn't certified or approved for irrigation through transfers. All are expected to complete their paperwork by the next irrigation season.

Water Well Permits

There are currently 18,000 registered irrigation wells in CPNRD. CPNRD issued 106 well permits in 2022. Permits are required before water wells are drilled. In 1986, state law began requiring NRDs to have a permit program for new wells drilled or existing wells modified in management areas. CPNRD started issuing permits in 1988, assuring landowners and the NRD that spacing requirements for management areas are maintained. New irrigation wells cannot be drilled within 600' of an existing irrigation well not owned or controlled by the applicant, or placed within 1,000' of an industrial or municipal well, and neither can be drilled within 1,000' of any registered irrigation well.

NRDs have the authority to provide a permit and define what a replacement well is. CPNRD requires a permit to drill replacement wells, an additional requirement to well registration State requirements. Replacement wells must be registered the same as other water wells except that the timing may be different. The \$50 permit fee expires one year from the date of approval.

Irrigation Well Registration

Staff verifies and corrects well registrations within the NRD. Under **Neb Rev Stat. §46-602, 706 and 707**; wells that aren't properly registered are "illegal wells" and considered a Class 4 criminal misdemeanor violation. The penalty is a \$100-\$500 fine/conviction. Another consequence is a court order to discontinue pumping. Often wells are part of property inventory when ownership changes hands and it becomes the new property owner's responsibility to verify the registration. NeDNR charges \$110 to register each well.

There is no charge from the CPNRD or the state to correct locations or change ownership information.

Water Policy Task Force

2002: LB1003 established the Water Policy Task Force to address management and use of Nebraska's surface and groundwater. Two representatives were appointed from CPNRD: Ron Bishop, representative for the NRDs, and Dick Mercer, Middle Platte Basin representative.

2003: The Task Force presented its report to Governor Mike Johanns that recommended basic components of the existing surface and groundwater law be left in place; but that Nebraska adopt a stronger, more proactive approach to the integrated management of surface water and hydrologically connected ground water. Key goals were to address potential problems between groundwater and surface water users before conflicts arise and to manage the water resources of the State to sustain a balance between hydrologically connected water uses and supplies. The Legislature adopted LB962 allowing the state and the 23 NRDs to be proactive in anticipating and/or preventing conflicts between groundwater and surface water users.

2004: NeDNR declared all or portions of nine NRDs "fully appropriated." The Platte River Basin, above the Kearney Canal Diversion, North Platte River Basin and South Platte River Basin were designated as over-appropriated. All additional stays became effective September 2004 and remain in effect until NeDNR determines that the affected basins are not OA or the stays expire pursuant to the provisions of LB962.

Conclusions reached by the Governor's Water Policy Task Force led to the passage of LB962 and set the stage for a water management policy based on sustainability. LB517 created the Water Funding Task Force that included 16 members of the Nebraska Natural Resources Commission, 11 citizens appointed by Gov. Heineman, six state senators and director of the NeDNR. Dick Mercer and Mick Reynolds served as Task Force members. Nebraska must also comply with the Republican River Compact, a 1943 agreement with Colorado and Kansas over water use in the river's basin. The agreement allocates 49% of the Republican River's water to Nebraska, 40% to Kansas and 11% to Colorado. Kansas long-accused Nebraska of violating the compact by allowing farmers to divert more than their legal share of the river's water for private use.

2006: State of Kansas sued Nebraska asking for up to 300,000 acres in the Republican Basin to be permanently retired from irrigation and up to \$80M in damages for water use.

2013: Special Master William J. Kayatta recommended Nebraska pay \$5.5M in damages without a massive shutdown as Kansas had requested; a victory worth more than \$100 million annually to Nebraska's economy. The Task Force made recommendations to the Legislature for a strategic, long-term funding plan for Nebraska's water projects. Funding was approved to establish a permanent, stable funding source to ensure that Nebraska's water resources are managed effectively and efficiently.

The Bill included creating a two-step application process for water projects, allocating an annual fund of \$50M and expanded the Commission to oversee the allocation of funds. Members spent five months conducting education sessions, tours and public meetings across the state where members gathered input and learned of water issues and funding challenges facing water users in Nebraska. Information gathered helped the group prioritize goals leading to five recommendations:

- Ensure that water projects funded through the Water Sustainability Fund demonstrate ability to contribute to the goals of water sustainability for the state by protecting the ability of future generations to meet their needs through various methods. These include increasing aquifer recharge, reducing aquifer depletion, increasing stream flow and remediating threats to drinking water.
- Contribute to multiple water supply management goals, such as flood control, agricultural use, municipal and industrial uses, recreational benefits, wildlife habitat, conservation and preservation of water resources.
- Provide increased water productivity and enhancing water quality.
- Use the most cost-effective solutions available.
- Comply with compacts, decrees, and other state contracts and agreements.

Fully and Over Appropriated Designations

A basin is determined to be fully appropriated if further development were to occur, the balance between water use and water supplies could not be sustained. An over-appropriated basin is one where the extent of development is not sustainable over the long-term, or that the already permitted uses are in excess of what can be supported by the

water supply. As result of the designations, NeDNR placed stays on new uses of surface and groundwater: immediate stay on any new natural-flow, storage, or storage-use appropriations in the whole of the OA basins, and a stay on new water well construction permits in all areas within which surface water and groundwater are hydrologically connected. Stays are imposed on construction of new water wells unless such construction commenced prior to the effective date of the stay or a valid construction permit for a water well had been previously obtained from an NRD; and on use of an existing water well to increase the number of acres historically irrigated. Stays were placed on increases through use of an existing surface water right of the number of acres historically irrigated.

2014: The Water Sustainability Fund (WSF) and Nebraska Natural Resources Commission were restructured to emphasize water sustainability. LB1098 required the WSF be used to contribute to water supply management goals, fund municipal sewer infrastructure projects, increase water productivity, enhance water quality and comply with interstate compacts or other agreements. Funds were distributed equitably throughout the state with no more than 10% dedicated annually to sewer infrastructure projects.

The Commission is composed of 27 members, 13 members elected to represent river basins across the state and 14 members added by LB1098 that are appointed by the governor to represent: agribusiness; agriculture; groundwater irrigators, irrigation districts, manufacturing, metropolitan utilities, municipal water users, outdoor recreation users, public power districts, range livestock owners, surface water irrigators and wildlife conservation. The bill requires basins operating under an IMP to develop a basinwide plan for any areas with hydrologically connected water supplies. The Legislature's Appropriations Committee conducts a biennial analysis of the WSF. Central Platte NRD Director, Mick Reynolds, serves on the Commission as Middle Platte Basin Representative. Two appointed positions are currently vacant: public power and groundwater irrigators representatives.

INTEGRATED MANAGEMENT PLANS

Central Platte NRD/Nebraska Department of Natural Resources

2006: NeDNR started making annual determinations of basins not previously designated as fully appropriated (FA) or over-appropriated (OA) to see if they had become fully appropriated. CPNRD was designated as over-appropriated from Elm Creek west and the rest of the District was designated as FA. NRD directors, staff and NeDNR worked with stakeholders to develop an Integrated Management Plan.

CPNRD and the NeDNR began working on the individual Integrated Management Plan (IMP) in 2005 by meeting with Stakeholders to educate them on requirements set by NeDNR and the issues to be considered in developing the Plan; including surface and groundwater interests such as irrigators, city utilities, power districts, economic development and banking reps.

The draft plan was finished in 2006 and was originally to be in place within 3-5 years, however, an extension was approved to complete the Plan in 2009 to allow NRDs to wait for the Basinwide plans to be completed.

2009: The IMP was approved. CPNRD's Rules & Regulations were revised to correlate with requirements in the IMP.

2019: The second increment IMP was approved by the CPNRD board with the existing groundwater controls: 1) groundwater moratorium, 2) certification of groundwater uses, 3) groundwater variances, 4) groundwater transfers, 5) municipal and industrial accounting.

The NeDNR will continue the existing surface water controls: (1) maintaining the moratorium on new surface water appropriations and on expanded surface water uses, (2) transfers of appropriations are subject to statutory criteria and NeDNR rules, (3) continuation of surface water administration and monitoring of use of surface water, (4) no additional requirements of surface water appropriators to use additional conservation measures, (5) no other reasonable restrictions on surface water use.

Basin-Wide Plan

2010: NeDNR held an annual review of the basin IMPs. CPNRD participated in the development of the basin-wide plan for the Platte Basin.

FIGURE 14. Stream Depletion Estimate

YEAR	DEPLETION VOLUME (AF)	YEAR	DEPLETION VOLUME (AF)
2019	14,000	2025	14,600
2020	14,100	2026	14,700
2021	14,200	2027	14,800
2022	14,300	2028	14,900
2023	14,400	2029	15,000
2024	14,500		

Basin-Wide Plan *(continued)*

2012: The revised basin IMP became effective in to set objectives to incrementally reduce the difference between current and fully appropriated levels of development within the basin. Although goals are being met, the original plan required the same parties to develop a second increment within 10 years after the adoption of the first increment basin-wide plan. From 2013-2019, Twin Platte and Tri-Basin NRDs purchased up to 1,500/2,000 AF of water annually from CPNRD to provide flows back to the Platte River from the Dawson County canals. Remaining flows were sold to the Platte River Recovery Implementation Program.

2019: CPNRD approved the second increment *Basin-Wide Plan for Joint Integrated Water Resources Management of OA Portions of the Platte River Basin*, developed by the Platte Basin NRDs (North Platte, South Platte, Central Platte, Twin Platte, Tri-Basin) and NeDNR. The geographic area of the Plan is the extent of the Nebraska portion of the Platte River surface water basin beginning at the Nebraska-Wyoming State line and ending at the Kearney Canal Diversion, at Elm Creek. The Plan includes: 1) introduction; 2) planning process; 3) activities of the first increment; 4) goals, objectives, and action items; 5) monitoring. The plan does not include controls. Information sessions/public hearings were held on both the IMP and Basin-Wide plans on July 15, 2019, with testimony submitted by CNPPID and NPPD. After reviewing the testimony provided, CPNRD and NeDNR concluded that amendments to the proposed plans were not necessary. Both plans were effective on September 11, 2019.

CNPPID Conjunctive Management Offer

A joint Middle Platte Basin Water Resources subcommittee developed a surface water model and public opinion survey to understand the public's attitude and perceptions about water usage in Nebraska.

2011: CPNRD and Twin Platte NRD hired a consultant to conduct a survey from Lake McConaughy to Chapman with the overall goal to provide water to all water users.

2012: A special joint board meeting was held with both NRD boards who voted unanimously to approve an offer to Central Nebraska Public Power and Irrigation District (CNPPID) to assist them financially at converting their surface water irrigation project to a groundwater irrigation project and recharge program. Since 75% of users in CNPPID's system had irrigation wells used during drought conditions, the proposal would've allowed landowners to rely totally on groundwater and use surface water for recharge. CNPPID's board took the proposal under advisement.

2013: Findings of the pre-feasibility study were presented at NARD's annual conference. The additional modeling analysis used the OPSTUDY to address concerns identified by CNPPID and showed the project would provide beneficial flows for water management. It also addressed how groundwater recharge protects water supplies/water quality by increasing hydroelectric power generation on NPPD/CNPPID systems in central Nebraska and that CNPPID would see recreational benefits for Lake McConaughy and other lakes in the system. The next step is to work with CNPPID to address an in-depth study of the concept and continue working towards solutions for all water users in Nebraska.

Groundwater Exchange Program

2016: CPNRD launched a Groundwater Exchange (GE) pilot program to allow producers to buy or sell water on a temporary leasing basis for the upcoming irrigation season. Certified groundwater use on irrigated acres such as pivot corners, irregularly-shaped fields or full sections were sold. Buyers purchased water to improve or add to their currently certified groundwater use or to increase streamflow. The GE was the first to allow temporary leasing of groundwater. CPNRD's Rules & Regulations regarding transfers of groundwater irrigated acres were built into the computer program. For purposes of the GE, a 'water right' is the certified groundwater use on irrigated acres.

Bids were based on consumptive use and streamflow depletion to the Platte River. Pre-approved buyers and sellers went online from March 21-25 to place asking price to temporarily lease water or place bids to buy water for the 2016 growing season. Staff verified water rights to be sold or bought and provided buyers and sellers an ID number to be used during the bidding process. The first transactions were approved on April 1, 2016. Sellers placed 30 locations online for leasing, with six buyers placing bids: three for irrigation and three for streamflow rights. The GE matched the three irrigation bids with sellers in the eastern area of the District.

The board approved a \$105,000 contract with National Economic Research Associates (NERA) and the NeDNR to design/manage a second Exchange that included the Loup Basin influence. NeDNR and CPNRD shared 50% of the cost. The second year had 25 sellers and 5 buyers submitting bids. Half of the sellers received bids that matched with a buyer. Bids made for transactions along the Platte River west of Elm Creek ranged from \$8.14 to \$94.21/AF;

while bids east of Elm Creek ranged from \$30.12 to \$99.88/AF. Bids within the Loup Basin influence of the District ranged from \$48.84 to \$121.07/AF.

Schroeder Property Purchase for Groundwater Recharge

2018: 157.4 acres of groundwater irrigated land located 6 miles southeast of Cozad along Hwy 21 and 1/2 mile south of the Platte River was purchased for \$915,000. The purchase gives several options to earn Platte River credits by providing recharge through the retirement of irrigated acres, transferring water from the South Side Irrigation District canal, and directly discharging flows into the river from an adjacent property.

2019: JEO Consulting was selected to evaluate management alternatives in the amount of \$109,620.

2022: Management options to maximize the hydrologic benefits for the property were presented. In December, the renter was notified that the property will be leased as dryland to retire the irrigated acres and gain credit for 107 AF of water back to the Platte River starting in 2023.

2023: In August, NeDNR reimbursed CPNRD for 60% value of the benefit to the Platte River in the amount of \$468,308.

Surface Water Exchange Pilot Program

2018: NeDNR approved the transfer of 14,251 AF of water to the Environmental Account (EA) as part of CPNRD's pilot surface water exchange agreement with the CNPPID. During the 2018 irrigation season, the NRD agreed not to deliver surface water to 25,491 acres from Cozad, Thirty Mile and Orchard Alfalfa canals in exchange for CNPPID crediting the Environmental Account with the resulting additional storage water in Lake McConaughy.

2019: The recharge agreement changed the way CPNRD is paid for groundwater recharge via seepage through the canals in the non-irrigation season. The total amount diverted is measured by the NRD using automated measuring and recording gates and adjusted; by subtracting any deliveries or releases made and recorded by the irrigation district. The non-irrigation season begins when the canals stop releasing water for irrigation and end when the canals begin releasing water for irrigation as determined by CPNRD. In 2021, the unused storage water transferred to the Environmental Account totaled 14,208 AF.

2021: Two surface water exchange agreements for the irrigation season were signed by CNPPID, PRRIP and CPNRD and forwarded to the Nebraska Community Foundation for signatures, to develop a multi-year agreement instead of an annual agreement for the water from the three surface water irrigation districts the NRD partners with. The water allows the NRD to meet IMP goals and sell the portion not needed for compliance to the PRRIP to assist them in meeting their water goals. The agreement allows CPNRD to store the water in Lake McConaughy as controllable water that is added to the Environmental Account for PRRIP use.

2022: Amended water service agreement approved for \$1.2 million with NeDNR and Tri-Basin NRD to allow the NeDNR to pay CNPPID \$19,100,000 in advance to divert water into the E-65 Canal, Phelps Canal, Elwood Reservoir and various waterfowl production areas to provide aquifer recharge for 15 years. CPNRD receives credit for 25% of the excess flows (500-2,500 AF/year) that provide seepage back to the Platte River. The \$1.2 million was being held at the Nebraska Community Foundation.

30-Year Acreage Reserve Program

2021: A section was added to CPNRD's Ground Water Management Program Rules & Regulations titled *Section B-Rule 8: 30-Year Acreage Reserve Program-Participation Eligibility and Rules*. The 30-Year Acreage Reserve Program will provide a long-term solution in protecting surface water rights. Irrigation districts sign up for the conservation program and surface water users may opt-in or opt-out of the program annually.

The Program was developed to ensure that supplies in the Platte Basin are optimized and managed efficiently with maximum benefits and to meet water management obligations for the Basin-Wide Plan for Joint Integrated Water Resources Management of Over-Appropriated Portions of the Platte River Basin, CPNRD's Integrated Management Plan, and Nebraska's New Depletion Plan for the Platte River Recovery Implementation Program. A public hearing was held and the Program took effect on March 4, 2021.

Interbasin Transfer Application A-19594

2018: The board filed a formal objection to NeDNR concerning an interbasin transfer application submitted by CNPPID to divert water from the Platte River to the Republican River.

2020: NeDNR dismissed the interbasin transfer request claiming that CNPPID cannot be a valid applicant or an appropriator under the application because neither CNPPID, nor any of its customers, would make beneficial use of the water for compact compliance purposes in the Republican River Basin. The application was refiled in November.

2023: On April 17, 2023, the petition to bypass the Court of Appeals was granted. The Attorney General's Office prepared and filed a brief on response, allowing partners to have the opportunity to file a reply brief. The case was docketed for oral argument. The appeal brief was filed for the Inter-Basin Transfer (IBT) Application Order in which the Nebraska Department of Natural Resources (NeDNR) dismissed CPNRD as a third party-objector. A motion was also filed to bypass the Court of Appeals to take the appeal directly to the Nebraska Supreme Court. Partners of the appeal include CPNRD, Lower Loup NRD, and Loup Public Power District.

PROJECTS AND RESEARCH

Cooperative Hydrology Study (COHYST)

1997: Nebraska Governor Ben Nelson and governors of Wyoming and Colorado signed the Platte River Recovery Implementation Program (PRRIP) with the U.S. Department of Interior. Questions arose about potential impacts on activities along the Platte and it was apparent that data wasn't available to use. The Cooperative Hydrology Study (COHYST) was developed with funding from NET, CPNRD, state/local agencies, water and environmental organizations. NET awarded \$500,000 the first year and \$450,000 the second/third years. COHYST improves understanding of the hydrological and geological conditions in the Basin and provides scientifically supportable databases, analyses, and detailed computer groundwater models to more accurately identify and quantify the relationship between the Platte River and adjacent groundwater resources. It provides information to develop a "new depletions" plan for flows in the central stretch of the Platte River, and assists Nebraska in analyzing proposed activities for the PRRIP. COHYST also provides the Platte Basin NRDs appropriate management data as a basis to develop policy and procedures related to groundwater and surface water.

2004: The groundwater models were completed and peer reviewed by Eagle Resources, North Carolina. A team of senior hydrologists designed the database as it was developed. The databases quantify existing groundwater use, river and aquifer data in the Platte River Basin to provide better understanding of the groundwater flow system, interrelationships between groundwater and surface water, geology and other characteristics of the aquifer.

The models represent real-world features including rivers, streams, groundwater aquifers, groundwater pumping, or canals as a set of mathematical equations; which reproduce observed water levels and stream flows and are tools to predict how changes to or "stresses" on the groundwater system may impact flows in the Platte River. Stresses are additions/subtractions of water from the groundwater system, including pumping from wells, evapotranspiration by vegetation, aquifer storage/recovery, flow to drains, recharge from precipitation, deep percolation from irrigation, enhanced recharge due to certain land uses, recharge from canal/lateral leakage, and recharge from lakes and reservoirs.

Predictions are estimated on how water supply or proposed conservation projects affect groundwater levels and river flows. Changes in stream flow are estimated as a result of new irrigated acres between 1997-2005 for reaches of the Platte River above Elm Creek using a 50-year average. Estimates are also used in the Basin Plan as targets for stream flow depletions needed to be offset to get back to 1997 level of development.

Phase I: Completed overall water budget for new COHYST area.

Phase II: Developed water budget analysis tools to manage ground and surface water resources in the Platte Basin.

Phase III: Developed sub-regional models for focused water management areas.

2012: Sponsors Group updated land use acres 2006-2010 with Riverside from Colorado. Basic acreage data sets were updated to look at future depletions. The new data sets were extensive including 27 land types and uses; and previous land use sets put together in the 1950s. Sponsors: CNPPID; CPNRD, TPNRD, TBNRD; NGPC, NPPD.

2013: Model calibration was completed on Watershed Model (CROPSIM), Surface Water Model (STELLA) and Groundwater Model (MODFLOW) were integrated to simulate the hydrologic cycle. The simulation compares water budget fluxes to data-driven calibration targets. The models are used for percentage depletion maps, conjunctive water management and to determine real effects of operating the irrigation canals.

2014: The Integrated Model results for the watershed, surface water and groundwater models were within 8% difference for calculated gage flows versus historic gage flows. Minor changes made:

Watershed Model: soil information and weather data from climate stations were added.

Surface Water: seepage return from Sutherland Reservoir, seepage from Lake McConaughy, addition of runoff and irrigation demands; storage/natural flow and environmental storage account.

Groundwater: match evapotranspiration cells to expected locations, adjusted elevations, routed seepage to new discharge point, use groundwater model outputs for Lake McConaughy seepage.

2016: Completed Graphical User Interface (GUI), final model improvements, recalibrating and project oversight. Watershed model reconstructed to use actual monthly data from pumping and recharge records added. Surface water model (STELLA) mimics actual farming practices including diversions, return flows and water releases. Groundwater model modified representation of evapotranspiration. The Integrated Model calibrated through a three-step process using results from the watershed model and available measured data to construct stand alone versions of the groundwater and surface water models; adjusted models to match historical flows and water levels; and modified the watershed model to address problems identified in both models.

2017: CPNRD's water quality database was used to replicate 2002 dry river conditions for the Work Plan. The Conservation Study developed for the Platte Basin IMP to input no-till and other conservation activities compared conditions back to the 1950s was utilized. Olsson reported that the Hydrogeologic Evaluation and Subregional Groundwater Modeling results showed excess flows from the Dawson County canals were returned to the Platte River more quickly than anticipated. The subregional model covers 3% of the COHYST area allowing for a more detailed and complex evaluation of how water moves through the river and aquifer system. Several subregional models are being conducted in Nebraska.

2018: A 180-day temporary stay on new wells and new irrigated acres allowed staff to update the acre-transfer tool by implementing the new depletion numbers determined by COHYST for the Quantity Management Program.

2020: CPNRD partnered with NRCS to complete a survey of tillage practices and crop types. NRD staff visually inspected and recorded data for approximately 500 fields in multiple counties. Tillage practices were identified based upon criteria set by the NRCS. Tillage and crop type data is used to update various input parameters in the COHYST watershed model.

Conjunctive Water Management Study

The Platte River Conjunctive Water Management Study is an ongoing project studying surface and groundwater management options for the Dawson County canals with the goal of ensuring that supplies in the Platte Basin are optimized and managed efficiently with maximum benefits in a manner consistent with State and local policies. Studies and analysis for irrigation canal projects are conducted with COHYST modeling tool components: rainfall, pumping, surface water applied, total ET, recharge, runoff and acreage.

CPNRD provides technical assistance in evaluation of conjunctive management scenarios for portions of Dawson and Buffalo counties in the central Platte Valley. A conjunctive water resource management plan is being developed to optimize availability of water to groundwater and surface water users who are within both the boundaries of the NRD and the area within which NPPD delivers natural flow and storage water for surface water irrigation systems. The NeDNR, CPNRD and NPPD have met with the consultants to review the management scenarios results.

CPNRD QUANTITY PROGRAMS

Water Banking Program

2007: CPNRD's Water Banking Policy defined the process of how a water bank works. Through the water banking program, the NRD acquires water rights from landowners. The goal was to acquire water with the concept that for every acre-foot (AF) of water that impacts the river that the NRD can acquire, CPNRD would have that much less regulation and cutback imposed on irrigators. The first water bank transaction in the district was taken by approving a variance request and deposit of 2.4 AF/year into the water bank (donated by former director Jim Bendfeldt).

2012: The rate for water rights was increased up to \$8,000/AF of depletion to the river. Water rights purchased are deposited into CPNRD's Water Bank. The COHYST model was used to determine the AF of depletions CPNRD needs to reduce to bring the Platte River back to 1997 levels. After reaching 1997 level, the OA area west of Elm Creek will need additional water added to the Platte in order to bring it back to a FA status.

2022: Agreement was approved to add a municipal component to the water bank for managed development of new uses of water for municipal and industrial uses by the cities within the District. CPNRD administers the water bank transactions that utilize a system for crediting retired ground and surface water uses to be deposited in the water bank, and may be later withdrawn (debited) for new water uses by the cities. Effective 2025, municipalities are required to offset their new uses. This agreement allows them to be proactive in finding water for economic growth when needed.

Over-Appropriated Area Retirements

2015: CPNRD acquired one perpetual conservation easement on water rights in Dawson County with estimated accretion to the Platte River from groundwater retirements using the latest COHYST offset calculator at 61.46 AF.

2022: Water Bank had a balance of 2,760 AF of groundwater rights available for offset in the district and 2,500 AF of surface water rights available for offset in the over-appropriated area.

Excess Flows

Excess Platte River flows were diverted by Cozad Canal, Thirty Mile Canal, and South Side Irrigation canals in 2011, 2013, 2014, 2015, 2016, 2017, 2018, 2019. Total diverted by the three canals was 89,590 AF and the computed recharge was 40,512 AF. In 2020, 2,950 AF (net diversion) of water was diverted for recharge through the canals.

PROJECTS

Rehabilitation of Surface Water Canals

CPNRD partnered with four canal companies in Dawson County with agreements to buy one canal and rehabilitate three canals. As a Platte Basin Habitat Enhancement/Coalition Program project, grants from NeDNR (40%) and the Nebraska Environmental Trust (20%) paid 60% of project costs. CPNRD shared the remaining 40% of project costs with the canal companies.

The main benefits include: groundwater recharge to enhance surface water and ground water supplies, protect water quality and help CPNRD move closer to a FA status. The rehabilitations also provide enhanced flows to the Platte River by diverting and retiming excess flows to the river; returning natural flow irrigation rights to the river; and help meet requirements of the PRRIP agreement and LB962 to return the Platte River to its 1997 level of use.

Six Mile Canal

2010: CPNRD purchased Six Mile Canal in Gothenburg, the first-ever buyout of a surface water irrigation canal in Nebraska. The agreement provided funding for farmers to convert to ground-water irrigation, increase Platte River flows to protect endangered species, put more land into production, and improve public safety. COHYST data shows that closure of the ditch and elimination of direct river diversions resulted in an annual savings of 130 AF of water to the river even with the same acres irrigated with groundwater. The water rights were deposited in CPNRD's Water Bank to use for the IMP schedule to bring the OA area back to a fully appropriated status sooner. Six Mile Canal had been in operation diverting Platte River water since 1894, withdrawing an average of 2,377 AF of water annually.

Cozad Canal

Cozad Canal began diverting Platte River water in 1894 with water rights to irrigate over 25,000 acres of land between Gothenburg and Lexington. **2012:** CPNRD partnered with Cozad Ditch Company to manage the canal and to lease surface water. **2013:** Construction began. The massive rehabilitation was completed in three phases (2 years): 152 acres (27 miles) cleared; 21 miles graded; 13 new structures and 4 farm crossings, 6 check structures, an underdrain structure, a siphon and a county road wing wall replacement. The Spring Creek Wasteway Structure included: excavation of Spring Creek Channel (1,415 LF), 22 walkway modifications and extensions, and a SCADA automated monitoring system of Rubicon Gates with 4 flume gates and 7 slip meters. Total project cost was \$6.6 million. The Canal has the potential to provide 6,700 AF of water savings annually. Diversions of excess flow total 4,365 AF in 2011; 4,170 AF in 2015; 3,393 in 2016; and 436 AF in 2017. Groundwater return back to the Platte River is computed to be 1,300 AF for 2011-2018.

Thirty Mile Irrigation District

Thirty Mile Canal was constructed in 1927 and dedicated in July 1928 with water rights for 15,000 acres. **2012:** CPNRD partnered with Thirty Mile Canal Company for \$1.9M including half of the company's water rights and half

value of buildings/equipment. Construction included: replaced or installed 8 bridges, 8 check structures, 9 drop structures, 3 pipe roadway crossings, 2 pipe laterals, 4 miscellaneous structures, 5 flow measurement devices and structures, and installed rip rap.

2013: The canal became Thirty Mile Irrigation District and is a political sub-division of the State of Nebraska.

2014: An interlocal agreement created the CPNRD-TMID Stream Flow Enhancement Alliance. The agreement outlines maintenance/delivery of surface water for both irrigation and groundwater recharge. Total project cost was \$5 million. Thirty Mile ID provides up to 6,000 AF of water savings annually. Diversions of excess flow total 35,000 AF; resulting in groundwater return of 6,000 AF back to the Platte River for 2011-2018.

2021: Construction of the NRD field office and a storage shop at the TMID was completed in 2021. CPNRD's resources conservationist and precision conservation specialist have offices in the new building. Office address: 75887 Road 414 in Cozad

Orchard Alfalfa Canal

Orchard Alfalfa Canal's water right was approved in 1898 with water rights to irrigate 4,326 acres of land. CPNRD and Southside Irrigation Company signed a management-lease agreement in 2012; construction began in 2013. CPNRD assists in operations, pays half of operations and maintenance costs and receives half of the revenues.

Phase I: replaced seven county road box culverts **Phase II:** cleared 51 acres; 60,200 LF of grading; irrigation turn-out structure; replaced 13 canal structures; removed 3 farm crossings **Phase III:** diversion structure was replaced; installed slide gate with electric actuators on existing overflow structure; rip rap overflow structure for high flows. Total project cost \$4.7 million. A tour and rededication ceremony was held in August 2015. The canal provides up to 1,500 AF of water savings annually. Diversions of excess flow total 15,000 AF; and 2,600 AF in groundwater return back to the Platte River for 2011-2018.

The canals will continue to be used for surface water irrigation delivery; as well as for retiming Platte River flows to enhance target flows for endangered species. The retiming of Platte River flows will be accomplished by diverting flows excess to target flows to recharge the groundwater system or by transferring surface water irrigation rights to in stream use, which will be diverted from the canal back to the river. Water rights for diverting excess flow for recharge were granted to the canal systems by NeDNR and temporary transfer permits for returning surface water to the river for in stream use have been approved.

10-Year Meter Program

CPNRD's 10-Year Groundwater Pumping Study included 78 sites district-wide. Results showed that producers are pumping less water than estimated; and some sites showed that producers used the data and reduced their water use without impacting yields. The program provided flow meters equipped with telemetry, soil probes and weather stations to producers with the goal of collecting raw pumping data. The program was designed to be voluntary, allowing producers to review their own pumping data and adjust their water use as needed. CPNRD has applied for funding to continue the study through 2034. Results will be added to the NRD's groundwater models to account for water uses and integrated into the Robust Review water accounting budget.

Central Nebraska Irrigation Project

2018: The Central Nebraska Irrigation Project provided financial assistance to producers to implement water conservation equipment including the Arable Mark field-level weather and crop monitoring device, pivot telemetry and flow meters. **2020:** 10 additional producers enrolled to utilize the three primary components for a total of 50 enrolled. Of the 50 producers, 21 opted to incorporate soil-moisture capacitance probes into their operation. 2020 was the last growing season budgeted for the project. Partners: The Nature Conservancy, Nestlé-Purina and Cargill.

South Platte Compact/Perkins County Canal

In 2022/2023, CPNRD staff participated in meetings with senators and Governor Pillen to review the Perkins County Canal proposal and what it means for the State. The Legislature passed LB1015 during the 2022 legislative session in conjunction with funding that authorizes NeDNR to advance preliminary planning and design for infrastructure necessary to fully protect Nebraska's non-irrigation-season flows (October 15 – April 1) authorized under the terms of the South Platte Compact.

In adopting LB1015, the Legislature found it essential to economic prosperity, health, and welfare of the people of the State of Nebraska, and to the environmental health of the entire Platte River Basin, to protect Nebraska's full entitlement to the flows of the South Platte River as provided for in the South Platte River Compact. The Legislature authorized NeDNR to develop, construct, manage, and operate the Perkins County Canal Project (project as named

in South Platte Compact) and has provided preliminary funding (\$53.5M) to continue advancing these efforts.

Meadowlark Project

In June 2023, JWC Gburg LLC announced a new eco-friendly fertilizer manufacturing plant planned to be built in Gothenburg. The plant will be the first in the nation to use electricity and water instead of natural gas to produce nitrogen fertilizer. CPNRD is negotiating with the JWC Gburg on selling up to 2,000 acre-feet of water that the plant will need for production.

B1 Reservoir

CPNRD staff is currently holding meetings with the Nebraska Department of Natural Resources concerning future use of B1 Reservoir in Lexington to determine how it may be used to retune flows back to the Platte River. The benefits of not diverting the water is being assessed.

DATA COLLECTION

Airborne Electromagnetic (AEM) Survey (2018)

AquaGeo Frameworks conducted the AEM survey providing CPNRD with improved water table and geological data to determine where: additional wells may be drilled, vadose zone/recharge monitoring are needed and water table boundaries. AEMs are conducted by helicopter and cover large areas quickly with minimal impacts to local activities and the environment. 3-D maps produced by integrating airborne geophysics with other information provide tools for locating local features of the aquifer system important to water managers. Maps are combined with water table elevation maps to provide geometry of the aquifer including locations of most saturated thickness, heterogeneity of aquifer materials, recharge zones, lithologic barriers to groundwater flow and connections to the surface water system. AquaGeo did three flights per day at 100-150' above ground. Data was collected every 100' compared to test-holes that provide data every six miles. Maps indicate where preferential flow paths may exist to understand base flow to streams and interpret water quality samples in relation to the various stresses in the system. Data is used to site wells on focused-recharge areas, facility construction and areas of interest for impact to the aquifer and predictive analysis of management scenarios for groundwater models. Total project cost was \$966,000.

ArcGIS

CPNRD staff uses ArcGIS Solutions Platform to collect, analyze, and manage data collected in the field. Progress maps are used for nitrate sampling, chemigation, and static water levels.

Evapotranspiration Map

An agreement with UNL was extended for \$64,127 and \$20,000 to fund a graduate student. The evapotranspiration research uses Mapping ET with high resolution and internalized calibration (METRIC) algorithms and Earth Engine ET Flux (EEFlux). The project quantified ET by processing Landsat 7/8 images for 2015 and combined them with all processed years for usable products for planning, managing, and regulating groundwater resources in CPNRD.

GeoCloud Database

The project collects airborne geomagnetic imagery with the intention to correlate that data with sub-surface geology and hydrogeology. The project was initiated as a joint effort from 2016-2020 with Lewis and Clark, Lower Elkhorn, Lower Platte North, Lower Platte South, Nemaha, Papio-Missouri River, Lower Loup, Upper Elkhorn and Twin Platte NRDs; USGS, Aqua Geo Frameworks, and University of Nebraska's Conservation and Survey Division. The project received \$247,437.60 from the Nebraska Natural Resources Commission. CPNRD approved to extend the agreement and continue participating through 2027 in the amount of \$12,000.

Groundwater Evaluation Toolkit (GET)

2017: Olsson was hired to develop a Groundwater Evaluation Toolkit (GET) for 'real-time' tracking of water recharged to the aquifer in the amount of \$98,500, the Platte River Recovery Implementation Program funded half of the cost. The model tracks flows on a cell-by-cell basis to provide specific monthly accounting of water returned back to the Platte River. GET enabled staff to run scenarios to track water flows back to the river and provides access to the subregional models for Thirty Mile, Southside and Cozad canals.

LiDAR

CPNRD participated in Light Detection and Ranging (LiDAR) for district-wide coverage of topographic elevation developed from aerial radar detection. Data was collected November 2012 to March 2013, with results available for

use in August 2013. Other partners to collect statewide data: Lower Platte North, Twin Platte, Lower Loup, North Platte and Middle Niobrara NRDs; NeDNR, NDEQ and NRCS. CPNRD's cost was \$40,000 for Custer County.

Magnetic Resonance Sounding

The NET supported a three-year project using a Magnetic Resonance Sounding (MRS) to gather information on groundwater without drilling holes. MRS is a quick, non-invasive surface geophysical technique that directly measures groundwater and is used in place of test holes and aquifer pump tests that are sparse, time-consuming and expensive. Data collection and study findings are published in a Scientific Investigation Report by the USGS Water Service Center in Lincoln. Use of MRS parameters improves the accuracy of groundwater models and enable water resource managers to make more informed decisions.

NEBFLUX

2017: an agreement was extended with UNL for the Nebraska Water & Energy Flux Measurement, Modeling and Research Network (NEBFLUX). The Project uses advanced techniques to measure actual ET rates with surface energy fluxes, microclimatic variables, plant physiological parameters, soil water content, surface characteristics and interactions for various vegetation surfaces in the District. CPNRD began funding the project in 2007 to seek scientific-based research for water management programs. The data is used for the Groundwater Management Program which is based on crop water use and consumptive use. The project was extended through June 2020.

Water Quantity Objectives

1. Establish irrigation management practices and techniques on the irrigated lands in order to properly conserve and efficiently utilize water.
2. Discourage development of water-using projects (irrigation) on any lands on which such development is not within the capabilities of the land.
3. Help secure any water supply project that is shown to be feasible, beneficial and desirable.
4. Develop plans and programs that will strive for a balance between water use and water availability.
5. Develop plans and programs that will strive for a balance between rights of all individuals utilizing the groundwater aquifer.
6. Work toward balancing the needs of wildlife with needs of people in utilization of the water resources in the District.
7. Balance needs of endangered and other species on the Platte River and its tributaries with needs and rights of human users.

VI. Fish and Wildlife Habitat

GOAL: The conservation and enhancement of fish and wildlife resources for the benefit of the people.

Residents of the District and people from across the state enjoy the fish, wildlife and other natural resources within the District. The Platte River and its adjacent wet meadows, forests, grasslands, and croplands provide habitat for millions of migratory birds. Each spring, roughly 80% of the continent's sandhill cranes use the central Platte and lower North Platte Rivers as they traverse from wintering areas to their nesting habitats. Waterfowl make extensive use of area habitats, particularly during spring migration; and diverse assemblages of songbirds make significant use of riparian forests and grasslands. Resident upland game birds and big game provide area hunters with many sporting opportunities. Mammal, fish, reptile and amphibian species are also abundant in the District.

Prior to settlement, vegetation across the District consisted of tallgrass prairies and wet meadows in lowlands, and on the Platte River terrace and mixed grass prairies on the uplands with fingers of riparian forest. Today the area is a matrix of grassland remnants, cropland and expanded riparian forest. Human activity has significantly modified the native vegetation and wildlife habitat. While some of these effects have had positive results on wildlife resources, others have been detrimental.

The District has several federally listed endangered and threatened species including the whooping crane, least tern, piping plover, American burying beetle and the western prairie fringed orchid. Areas that have been designated as critical habitat by the USFWS for the whooping crane exists in the District. Previously listed species have shown signs of recovery, for example, the bald eagle and peregrine falcon have been removed from the federal listing. A series of instream flow water rights on portions of the Platte River have been obtained by the NRD to protect minimum flows for fish and wildlife resources. Wet meadows along the Platte River are an important habitat resource to a diversity of wildlife including migratory birds. Working with NPPD, CNPPID and NGPC, the NRD has completed a demonstration project to enhance and maintain wet meadows along the Platte. With a grant from the Nebraska Environmental Trust, the project has developed alternative methods to manage for these valuable habitats.

Farmers and ranchers are encouraged to establish native wildlife habitat, carefully plan conversion of rangeland or other native vegetation types to agriculture, and to return land with marginal or poor production capabilities to habitat. Surface water, natural wetlands and wet meadows should be maintained and enhancements considered in the planning for District projects. Cost-share is provided for practical application of effective habitat; which reflects the NRD's commitment to protecting wildlife resources.

PLATTE RIVER RECOVERY IMPLEMENTATION PROGRAM

2006: The Platte River Recovery Implementation Program (PRRIP) was signed by the federal government along with the basin states of Nebraska, Colorado, and Wyoming. Local, state & federal government agencies worked with groups from throughout the basin to build a framework for a long-term Program to satisfy Endangered Species Act (ESA) requirements for water users in the basin. USFWS plays a major role in enforcing the ESA with legislation for federal funding passed by Congress in 2008.

The first PRRIP increment included ongoing development of water projects planned to improve flows in the central Platte by an average of 130,000-150,000 AF annually. Research and monitoring on the Platte showed FWS's target flows to be ineffective in accomplishing the set objectives. The states and federal governments face challenges to protect the species using the Platte River and their habitats while providing certainty for water users who face ESA requirements. CPNRD is actively involved in the Governance Committee (GC), Land Advisory and Water Advisory committees. The Land Advisory Committee includes: CPNRD member/alternate, TBNRD member/alternate, and a joint member/alternate. In 2023, David Carr was selected to replace Lyndon Vogt.

2013: The Governance Committee (GC) & CNPPID agreed to develop J2 Regulating Reservoirs for \$13M for 5 years.

2015: CNPPID and RJH Consultants, Inc. provided the GC with a progress report on the Project which detailed significant increases in cost from the original estimate of \$63-\$170M, not including land acquisition so alternatives were evaluated. Central Platte, Twin Platte and Tri-Basin NRDs each purchased a percentage of the Nebraska share. CPNRD purchased 20% of the State's share (2,040 AF annually) for \$1.5M.

2016: GC stopped the project to explore other water projects involving groundwater recharge, smaller scale storage projects, water acquisition and transfer opportunities.

2017: Amendment to the Water Use Lease Agreement with CPNRD modified the price paid for surface water diverted for recharge at \$43/AF, raised payment for transferred surface water \$43-\$150/AF & reduced the increase in annual costs 7% to 3% to bring the value of water CPNRD sells to the Program to levels with those paid to other contributors. The original Agreement was signed in 2013 with amended values effective on January 1, 2017.

2019: The first Increment of the Program expired in 2019. While first-increment milestones were exceeded for land and adaptive management components, water goals were more expensive to achieve. Initial discussions included prioritizing resolution of channel choke point issues, habitat acquisitions and opportunities to support pallid sturgeon use of the lower Platte River.

Second Increment

The basin states governors, house representatives and senators supported the second increment. On December 21, 2019, President Trump signed two spending packages that included the PRRIP Extension Act to extend the Program until December 2032. The Program's long-term objective for land is to acquire land interests, restore where appropriate, and maintain and manage approximately 29,000 acres of suitable habitat along the central Platte River between Lexington and Chapman.

2020: GC discussed the Upper Platte Basin Robust Review results and Second Increment planning. Nebraska is in full compliance with its New Depletions Plan & achieving Milestone 9 of the extension document. Future Robust Reviews are planned for 2023 and 2027. Water service agreements with CPNRD, NPPD and CNPPID were approved in similar term/payment rates for recharge water.

2021: Headwaters Corporation reported on the PRRIP's collaborative efforts to achieve the water objective of 130,000-150,000 AF a year & land objective of 10,000 acres of habitat. Headwaters Corp manages the \$19M annual budget and serves as the public face of Program activities. PRRIP continues to work on its focus areas of land, water, science, and administration. The PRRIP is in the process of purchasing roughly 14,000 acres of land within the 3.5 mile reach along the Platte River to help reach land acquisition goals. The land strategy has shifted from buying and restoring habitat to a land management strategy. A framework to spend \$1.5M over the next 5 years for Pallid Sturgeon research on the Lower Platte was developed with continued focus on science efforts for the piping plover and whooping cranes habitat along the Platte River.

STATE/BASIN COALITIONS

Nebraska Habitat Conservation Coalition (NHCC)

The U.S. Fish & Wildlife Service (FWS) proposed designation of critical habitat for the Great Plains piping plover population in 2001 in Nebraska, North Dakota, South Dakota, Minnesota & Montana. Critical habitat was formally designated by the FWS in 2002. The Coalition, comprised of 23 members/8 partners, was formed in response to the federal designation of critical habitat for the piping plover in Nebraska. The critical habitat designation gave the FWS an instrument to evaluate activity that could impact the Platte River or its flow, which puts groundwater pumping at a greater risk of being construed as a "take." Section 9 of the ESA makes it unlawful to adversely modify critical habitat, or for a person to "take" a listed species, which has been defined to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect or attempt to engage in any such conduct.

2003: NHCC filed a lawsuit in Federal District Court in Nebraska stating that the FWS used inadequate science in their designation of critical habitat, the designation provided questionable benefits to the species, that there were legal inadequacies in the designation process, and the FWS failed to assess the economic impact of the designation.

2005: The Coalition won its case in District Court requiring the FWS to redo economic analysis and critical habitat designation in Nebraska. NHCC plans to stay closely involved in the redesignation of critical habitat as ordered by the District Court.

2019: FWS announced a proposal to down list the American Burying Beetle from endangered to threatened; and the Interior Least Tern from the ESA due to recovery.

Federally threatened/endangered species within CPNRD: American burying beetle, whooping crane, Eskimo curlew, piping plover, interior least tern, western prairie fringed orchid, Rufa red knot, Northern long-eared bat and the tri-colored bat. A new rule was proposed by the FWS in 2014 regarding critical habitat designated in association with the ESA. Of concern was that proposed rulemakings would significantly change the agencies approach to critical

habitat designation and lead to over-regulation. The NHCC Executive Committee and Legal Advisory Committee submitted comments in opposition of the proposed rule.

NHCC Timeline of Activities

- 1985 - Piping Plover (PIPL) listed as Threatened under ESA
- 1996 - USFWS petitioned by the Defenders of Wildlife to designate PIPL critical habitat
- 2001 - USFWS proposes critical habitat for the Northern Great Plains (NGP) population of PIPL: NHCC formed
- 2002 - Critical habitat formally designated in 5 states (NE, ND, SD, MN, MT) PIPL critical habitat in Nebraska includes 454,400 acres (excluding the Missouri River), 440 miles of Nebraska rivers (including portions of the lower Niobrara, Loup, and central and lower Platte Rivers), plus 120 miles of the Missouri River.
- 2005 - NHCC motion before U.S. District Court of Nebraska for Summary Judgement; U.S. District Court issues Order vacating designation of PIPL critical habitat in Nebraska and orders FWS to redesignate critical habitat.
- 2006 - FWS appeal Court Order/NHCC files cross-appeal; U.S. 8th Circuit Court of Appeals issues order of dismissal
- 2014 - NHCC files comments on USFWS proposed policy and regulatory changes to critical habitat designations
- 2016 - NHCC files comments of USFWS Draft Revised Recovery Plan for the NGP PIPL

Platte Basin Habitat Enhancement Project

CPNRD and co-sponsors (North Platte, South Platte, Tri-Basin, Twin Platte NRDs, NeDNR, NGPC) received an NET grant for the Platte Basin Habitat Enhancement Project for \$3M. Remaining funds included \$6M from NRDs and \$6M from NeDNR totaling \$15M. Projects/activities funded by the PBHEP resulted in enhanced Platte River stream flows, reduced consumptive uses of water, recharged groundwater, and supported wildlife. Projects included Cozad and Thirty-Mile Canal Rehab conjunctive management projects, acquisition of dozens of conservation easements retiring irrigated acres across the Platte River basin, Nebraska Cooperative Republican Platte Enhancement Project, North Dry Creek Augmentation Project, Re-Use Pit Recharge Demonstration Project, and Groundwater Recharge Demonstration projects. PBHEP concluded activities in 2014.

Platte Basin Water Project Coalition

2012: Interlocal Cooperation Agreement was approved with NDNR and the following NRDs: South Platte, Twin Platte, North Platte, Tri-Basin and CPNRD. The agreement allows utilization of the new Water Cash Fund through the Nebraska Environmental Trust and the Legislature for Platte Basin water management activities. It took the place of the Platte Basin Habitat Enhancement Project.

2023: The Supreme Court reversed the 'significant nexus' to navigable waters rule to say a surface water connection must be present to navigable water for a wetland to be regulated.

Phragmites Control

CPNRD began participating in the Platte Valley Phragmites Project in 2009; budgeting \$621,000 from 2009-2020. The project includes 700 landowners who participate in herbicide spraying by helicopter and/or manual spraying of property along the Platte River from Kingsley Dam east to Columbus in the Platte & Central Valley Weed Management Areas (WMAs). The joint effort includes 16 counties in south central Nebraska along the Platte River, 315 miles of river channels and 11,000 acres within the main channels.

2018: The Nature Conservancy reported 26,000 acres have been treated for invasive Phragmites since 2009 within flowing channels of the Platte River in Dawson, Buffalo, Hall, Merrick, Hamilton and Polk counties within the NRD. Phragmites were reduced 86% and purple loosestrife reduced 70% through continued maintenance. Along with applying herbicide, disking/shredding are used for biomass removal and effective with minimal reinfestation. Flow conveyance has improved and wildlife habitat has increased. Sponsors include the Nebraska Environmental Trust, Platte River Recovery Implementation Program, Nebraska Department of Agriculture, Twin Platte NRD, Tri-Basin NRD, Nebraska Public Power District and Central Nebraska Public Power and Irrigation District..

2020: CPNRD invested \$500,000 over 3 years in an endowment to fund the annual cost of maintaining water conveyance in the Platte River.

2023: David Carr replaced Deb VanMatre as CPNRD's representative on the Platte River Resilience Committee.

Instream Flow Rights

Central Platte NRD holds instream flow water rights on the Platte River to protect and enhance wildlife; with the original flow water rights having a priority date of July 25, 1990. The NRD complied with the required 15-year review in 2009 and was granted instream flow rights until the next review in 2024. A series of instream flow water rights on portions of the Platte River to protect minimum flows in the river for fish and wildlife purposes was approved on July 2, 1992, by NDWR (now NeDNR). Flows specified by the instream flow water rights are a factor in providing bird habitat on the Platte, as well as habitat for food sources consumed by those birds. The rights have no effect on levels in upstream storage reservoirs such as Lake McConaughy nor do they take water away from existing irrigators. Other water rights already existing on the river are senior to the rights; but flows specified by the instream flow water rights must be met before any future project could take water from the Platte. CPNRD's application came after extensive study by the NRD in response to concerns about low flows, especially during the dry summer periods which are dangerous to the fish and wildlife that depend on the river.

The study indicated that the instream flow water rights wouldn't solve the existing low flow problems, but could be effective in preventing some additional low flow periods by assuring that minimum flows are met before future projects could withdraw water from the Platte. CPNRD held a public hearing in March 1989 on proposed instream flow rates, timing, segments and uses for a proposed water right. While considerable testimony applauded CPNRD for seeking the instream flow water right, there was a division of opinion about the flow rates, dates and river segments proposed. CPNRD met with interested parties to arrive at the series of flow regimes on which the application is based. NGPC rejected the NRD's offer to join in making its application to the NeDNR. Because of insufficient detailed data available to make a determination of water and habitat needs for selection and nesting by the least tern and piping plover and stopover by ducks and geese, CPNRD did not make its applications for water rights.

On July 25, 1990, six applications for Platte River instream flow water rights to benefit wildlife were filed. Together, the applications sought to protect flows varying from 500-1,500 cfs at specified time periods in certain reaches of the river, extending from near Lexington to near Columbus. The applications were filed to benefit sandhill cranes, bald eagles and three species designated as threatened or endangered: least terns, piping plovers and whooping cranes. The NeDNR conducted a hearing on the six applications from July 1-September 25, 1991. Eighteen parties filed as objectors including: State of Wyoming, several environmental organizations, power and irrigation interests and several NRDs. The Audubon Society and Sierra Club changed their status to proponents during the hearing, two objectors withdrew and four parties were dismissed before the conclusion of the hearing. NeDNR issued a ruling on July 2, 1992, that three of the water right applications be granted outright and a fourth be modified from the NRD's request. Two of the applications with flows for the bald eagle were denied.

APPLICATIONS GRANTED

- (1) Flow of 500 cfs from January 1-June 23 and from August 23 - December 31 from the mouth of the J-2 return, southeast of Lexington to Columbus, to maintain fish and macroinvertebrates as food sources for terns and plovers. Also a flow of 600 cfs from June 24 to August 22 for the same purpose.
- (2) Flow of 1,300 cfs from April 1-14 to maintain staging and roosting stopover habitat for whooping cranes and sandhill cranes for the reach of the river from the J-2 mouth to Grand Island. Increased to 1,500 cfs for April 15-May 3 and from October 12-November 10.
- (3) Flow of 1,100 cfs from Grand Island to Chapman during the period of April 1-14 to maintain staging & roosting habitat for sandhill cranes.

15-Year Review

In accordance with Nebraska statutes, these CPNRD instream flow water rights were up for a 15-year review in 2009. On October 5, 2009, the NDNR ordered that the CPNRD Platte River instream flow water rights continue to be used beneficially for the purposes for which they were granted, are in the public interest, and should continue in effect with no modifications.

Nebraska Game & Parks Commission Appropriation

The NGPC submitted 5 applications on November 30, 1993 seeking instream flow water rights for particular time periods with corresponding flow quantities for specified reaches of the river and for specified fish and wildlife. Some of the applications sought flow quantities during times and at locations that coincided with the instream flow water rights granted to CPNRD. One of the applications was approved and the two others modified for maintenance of fish communities. Another application to maintain whooping crane roost habitat was modified, and the application for flows to maintain wet meadows along the river was denied. Under Nebraska law, surface water rights are given priority on a seniority basis. Thus, flows granted for the NGPC are junior to and in addition to the NRD's instream flow water rights. The river must have flows that exceed the total of all senior water rights before a junior water right can be obtained by a potential developer. Objectors to the NGPC application formed the Nebraska Water Conservation Cooperative to provide opposition jointly in order to save time and money. Fifty-one local governmental subdivisions and water users organizations joined the Cooperative.

In 1996, NGPC reduced its flow requests for several applications, but the Cooperative continued its opposition. NDWR opened a hearing on the applications on September 25, 1996; which concluded on April 8, 1997. After the hearing, retroactive changes in state law applying to instream flow water rights were adopted by the Nebraska Legislature and both parties were allowed to submit briefs and additional exhibits in reaction to the newly amended statutes. NDWR examined the briefs, transcribed testimony (nearly 7,700 pages in length), 200-plus exhibits part of the hearing record, and issued the Order on June 26, 1998. NDWR denied the application for a water right to maintain flows to manipulate the water table underlying nearby wet meadows, saying NGPC failed to show a river-aquifer linkage; and he agreed with the opponents' claim that, as a matter of law, an instream flow for wet meadows is not permitted by state statute.

NGPC Applications to Maintain Fish Communities

1st Application: Instream flow for 1,000 cfs on a year-round basis for the reach of the river between Johnson Power Plant near Lexington and Loup Power Canal return near Columbus. The reach of the water right was shortened to stretch between the Kearney Canal diversion dam near Elm Creek and the Loup Power Canal return; and provided for the appropriation to be in effect only in June, July and August. Because CPNRD already has a water right for 600 cfs, NeDWR provided for varying rates between 200-500 cfs during the three-month period. In the NRD's water right, a maintenance flow of 500 cfs is protected to benefit the fish community from the J-2 return near Lexington to the Loup Power return from January 1-June 23. CPNRD's water rights protect a rate of 600 cfs from June 24- August 22, then returns the rate to 500 cfs from August 23-December 31. Varying flows are protected in different reaches of the Platte with 500-600 cfs protected above the Kearney Canal diversion dam. 1,000 cfs is protected between the dam and Columbus from June 1-July 31; and 800-900 cfs, depending on the measuring station from August 1-31.

2nd Application: Between the Loup Power Canal return and confluence of Platte and Elkhorn rivers near Waterloo, appropriation is 1,800 cfs on a year-round basis.

3rd Application: NGPC sought a water right for 3,700 cfs on a year-round basis between the confluence of the Platte/Elkhorn rivers and confluence of Platte/Missouri rivers near Plattsmouth. NeDNR approved a maximum rate of 3,100 cfs in January; 3,700 cfs in February- July and October-December; 3,500 cfs in August and 3,200 cfs in September.

Maintain Whooping Crane Roost Habitat Application:

The water right sought for 2,400 cfs from April 1-May 10 and for 2,000 cfs from October 1-November 10, on the stretch of the Platte from the J-2 return to Grand Island, was shortened to the portion of the river affected to the stretch between the Kearney Canal diversion dam and Hwy 281 bridge south of Grand Island. The Order provides a flow of 50 cfs for April 1-14, increasing it to 1,350 cfs from May 4-10. Fall rate is a shorter stretch of 1,350 cfs for only October 1-11.

Land Rights

At this time, CPNRD has no land right needs. This may change in the future to address acquisition of conservation easements to meet CPNRD/NeDNR's Integrated Management Plan requirements to offset post-1997 depletions. Sufficient information is not available at this time to determine financial needs.

Fish and Wildlife Objectives

1. Maintain wetlands for wildlife habitat.
2. Supplement existing fish and wildlife habitat areas that are sufficient in both size and number to provide reasonable public hunting and fishing opportunities for the people of the District.
3. Consider potential damage to or potential for enhancement of, fish & wildlife habitat in the evaluation of District projects.
4. Provide, as available and appropriate, assistance to private landowners and state and federal agencies in the management of fish and wildlife habitat programs.

VII. Forestry Management

GOAL: To develop and manage trees/shrubs for the production of raw material for wood products; to reduce wind velocities; to conserve moisture; and to reduce wind erosion for the comfort of the people, livestock and wildlife; and for environmental recreation and aesthetic benefits.

Other than isolated trees or wooded areas along rivers and streams, most of the and now encompassed by the NRD was void of woodlands when this region was first settled. One of the primary reasons was the semiarid climate of the region. Prairie fires, which periodically swept across the area, also contributed to a general lack of trees. Since European settlement of the area, trees have become more abundant. Farmers and ranchers have made a concerted effort to establish trees for farmstead, feedlot and field windbreaks, livestock shelterbelts and wildlife planting.

Forest resources are valued higher for environmental benefits than for commercial purposes; which include wildlife habitat, conservation, watershed protection, energy efficiency, recreation uses and scenic values. In more recent years, drought, tree disease, damage from winds, development, and other factors have been challenging for trees in the cities and towns of the NRD.

In 2020, the Emerald Ash Borer was found within the District in Kearney in an Ash tree located near Pioneer Park. Trees located within 15 miles of Kearney were encouraged to be treated with insecticide. Information is available at: nfs.unl.edu/nebraska-eab.

CONSERVATION TREE PROGRAM

The Conservation Tree Program is a complete tree planting service started in 1972 to purchase, distribute and plant conservation seedlings from the state forest in Halsey, NE. Staff selects the seedlings to be purchased from Halsey annually, alternative sources of tree stock are added to meet customer needs and diversity. CPNRD budgets \$10,000/year for the program.

2012: Small-acre packages are designed for Eastern Nebraska, Western Nebraska, Flowering and Wildlife by Bessey Nursery for landowners who don't want to plant 25 of the same type of seedling. The packages include 50 seedlings including five species with ten of each specie. The cost of the package will increase from \$60 to \$65 in 2024.

Weed Barrier Program

In 1991, CPNRD began offering fabric mulch weed barrier to protect seedling trees from competing with weeds for sunlight and moisture. Landowners are encouraged to prepare planting sites before planting seedlings and to properly maintain them after planting. A 10% early ordering incentive is offered for trees, weed barrier and the planting service.

COST-SHARE FUNDS

CPNRD: 50% of actual costs up to \$3,000 for trees, weed barrier and tree services with orders of 200+ trees

NSWCP: 50% funding for trees, weed barrier and tree services with orders of 200+ trees.

Urban Forestry Program

The NRD's Urban Forestry Program provides 50% cost-share match up to \$5,000 for cities and villages to plant and maintain trees in parks, on school lands and on other public property. \$5,000 is budgeted annually.

2021: Nebraska Forest Restoration Partnership - CPNRD received funds through a Regional Conservation Partnership Program (RCPP) to provide 75% cost-share for trees and/or windbreak renovation on orders of 200+ trees.

FIGURE 15.
Tree & Weed Barrier Sales

YEAR	TREES	WEED BARRIER (in miles)
2023	32,203	10
2022	40,866	13.14
2021	30,825	6.46
2020	20,475	2.03
2019	29,775	7.84
2018	41,225	8.42
2017	35,350	9.94
2016	45,796	11.77
2015	46,575	14.07
2014	54,175	17.38
2013	37,716	18.86
2012	48,025	14.91
2011	54,275	28.25
TOTAL	3,884,362 Since 1973	623 Since 1991

2022: Executive Travel partnered with the NRDs to plant one million trees over five years through the ETGreen campaign, starting with 50,000 trees. ETGreen was launched in 2021 and is designed to help Executive Travel's customers offset their carbon footprint generated by airline travel. CPNRD utilizes the funding to provide cost-share to landowners.

Gift of Trees Partnership

In honor of the 50th anniversary of Nebraska's NRDs and the 150th anniversary of Arbor Day, Nebraska City Tourism & Commerce partnered with CPNRD and other NRDs to plant a tree in each county in Nebraska. CPNRD planted five 8' trees at the following locations on October 21, 2022:

- Dawson County: Sterling Linden at Lexington City Hall
- Buffalo County: Bur Oak at Cottonmill Park in Kearney
- Hall County: Matador Maples at Stolley Park and the CPNRD Office in Grand Island
- Merrick County: Bur Oak at Merrick County Courthouse in Central City

Forestry Management Objectives

1. Reinforcement of under-stocked windbreaks and tree lots through interplanting with high value species.
2. Woodland improvement by thinning to achieve proper spacing.
3. To develop more optimum growing conditions through livestock exclusion.
4. To provide adequate wind and snow protection for farmsteads, feedlots, roads and fields through windbreak planting.
5. To provide benefits to wildlife, aesthetics, recreation and forestry management.

VIII. Range Management

GOAL: To have rangelands in the District in a “high good” or “low excellent” condition.

Rangeland makes up approximately 36.5% of the NRD’s land area. Most of the rangeland is unsuitable for using as cropland due to sandy soils or uneven terrain. Sandy land areas were often plowed when the area was first settled, but it was soon discovered that the land was unproductive when it lost its grass cover. If steep slopes are not kept under a permanent grass cover, the runoff potential from rains and snows is increased. Large amounts of sediment may be carried by the runoff which results in deep ravines and gullies being cut into the slopes. Rangeland can become unproductive if it’s not properly managed and overgrazing can cause severe damage by its effects on individual plants and the effects on the plant communities.

Rangeland concerns include the influx of Eastern Red Cedar trees and the encroachment of weeds that diminish the natural water supply for desirable vegetation in the western and central parts of the District. Land that isn’t suitable for growing crops, usually as a result of sandy soils or steep slopes, will benefit from being managed as grass to prevent erosion. If these lands are not kept under permanent cover, they can become an area of blowouts, sand dunes or gullies. Land on steep slopes is especially susceptible to water erosion.

When prescribed fire is used along with appropriate grazing practices, the result is increased economic output and wildlife benefit. Of the rangeland needing improvement, a majority could be treated by using better management techniques to eliminate over-grazing. Planned grazing, prescribed burns, and pasture rotation are encouraged. Cost-share to encourage these better management practices are available through CPNRD and NRCS’s Nebraska Soil and Water Conservation Program (NSWCP).

Prescribed Fire Program

CPNRD conducts and assists with prescribed burns in conjunction with federal, state and local agencies. Chemical control is being replaced by mechanical removal of trees and shrubs; and is most successful in areas where the number of undesirable woody plants is small. A prescribed burn is often recommended to remove unwanted trees and shrubs. Landowners are also encouraged to eliminate undesirable vegetation and other noxious weeds. CPNRD’s fire crew, along with Central Platte Rangeland Alliance, have conducted 300 burns totaling over 50,000 acres since 2005.

2004: CPNRD implemented the Program in 2004 with a cost-share program to help landowners treat their rangelands with the implementation of burns. The purpose of a prescribed burn is to control the undesirable vegetation, to prepare sites for harvesting, planting or seeding, to control plant disease, to reduce wildfire hazards, to improve wildlife habitat, to improve plant production quantity and/or quality, to remove slash and debris, to enhance seed and seedling production, to facilitate distribution of grazing and browsing animals, and to restore and maintain ecological sites.

Prairie Silver Moores (PSM) Fire

2022: On the afternoon of March 14, 2022, a grass fire burned approximately 50 acres of the north spoil pile and the wooded area to the south of the detention cells at the Upper Prairie Silver Moores Project in northwest Grand Island. NRD staff burned the detention cell in November 2021, so the fire was much easier to contain. Fire units from Alda, Cairo, Boelus and Dannebrog were on site.

Burn Preparation Cost-Share Program

CPNRD’s program reimburses landowners at a rate of 50% of actual costs up to \$75/acre incurred while implementing a prescribed fire by a contractor and up to a maximum of \$2,500/cooperator/lifetime. If the CPNRD burn crew does the burn, cost-share is not used because of the lower cost. Landowner cost is \$10/acre for the first 40 acres, \$5/acre for anything over 40 acres. CPNRD’s set minimum charge is \$300/burn. Landowners have applied for burns on up to 6,000 acres.

Scholl Fire & Fuels has been contracted to implement burns since 2019 to increase the number of burns the NRD can implement each spring. The 2023 budget includes \$50,000 for burn preparation.

Planned Grazing

Eliminating overgrazing on damaged land may restore vegetation over time. Reseeding or interseeding may also be necessary after which grazing must be deferred for 1 to 3 years before grasses are established enough to be grazed lightly again. The NSWCP provides cost-share for a variety of grazing land/rangeland management practices. Components such as pipeline, tanks, wells and cross-fence are used to complete a planned grazing system to distribute grazing more evenly over the pasture. With management of intensive grazing, pastures may be grazed for longer seasons. Dugouts are funded to provide storage for runoff water that can provide a supplemental source of water and livestock windbreaks can provide protection from winter weather and protection for calving.

Grazing Deferment Cost-Share Program

2013: The Grazing Deferment cost-share program was initiated to provide an incentive for landowners to defer grazing in a pasture for one growing season so that a prescribed burn can be successfully applied in the following year to reduce invasive Eastern Red Cedar. The cost-share was increased in July 2021 from \$15/acre to \$30/acre with a maximum of \$30,000 per landowner. The 2023 budget includes \$41,000 for grazing deferment.

2015: NRD was awarded a three-year grant from the Nebraska Environmental Trust to reduce invasive Eastern Red Cedar trees and improve rangeland. The focus was in Dawson County; however, other pastures within the District were included in the project as well. Two cost-share programs were developed to administer the funding. The Grassland Conservation Program was initiated to pay participants to prepare fire breaks and clear cedar trees in preparation for a prescribed burn; and the Grazing Deferment Program provided \$15/ac to defer grazing on a pasture for one year to allow a prescribed burn to be successfully applied the following year.

The fire contractor cut an estimated 299,585 cedar trees to implement the landscape-style burn. The crew worked on landowner burns from Dawson to Merrick counties, preparing 257,978 lineal feet for firebreak and mechanically cutting 3,691 acres of cedars. The project improved habitat and preserved native grass species including the tall-grass prairie in Dawson, Lincoln, and Custer counties.

Education Component

CPNRD staff visited six high schools and conducted a demonstration burn at Gothenburg High School to discuss the benefits of prescribed fire. Grant funding included \$775,735 from Nebraska Environmental Trust and \$2.2M in matching funds from the Natural Resources Conservation Service, Nebraska Game and Parks Commission, and the Nebraska Forest Service.

Grant Accomplishment Overview:

- * 3-year Burn Goal: 12,000 acres
- * Burn Total: 20,661 acres plus 2,555 acres burned by CPNRD.
- * Total firebreak prepared: 257,978 lineal feet
- * Total Mechanical Cedar reduction: 3,690.6 acres
- * 300,000 cedar trees removed from landscape
- * Funded 6 new sprayers, a water trailer, UTV/40 gallon fire unit
- * The sprayers add 2,390 gallons of water capacity to the fireline

Training Program

Within the District, there are many fields in poor condition needing a burn, and the NRD helps to facilitate that project safely and professionally. CPNRD hosts training events and outreach for landowners, other NRDs, agencies, firefighters and fire marshals. By providing training and assistance, CPNRD is helping to prevent costly accidents while enhancing grasslands for economic return and habitat. Staff has conducted 40 events to train over 600 participants.

Other successes:

- Managed \$1.5M prescribed fire grant projects to form Landowner Prescribed Burn Associations
- Assisted the Fire Learning Network to train firefighters from around the world
- Created inroads in Nebraska for liability insurance coverage for prescribed burning.

Native Prairie Outreach Project

2008: CPNRD has been coordinating the Native Prairie Outreach Project at Husker Harvest days, distributing native prairie seed packets and education materials to approximately 1,500 people annually. Nearly 800 packets of seed

Native Prairie Outreach Project *(continued)*

totaling 11 acres worth of restored prairie are handed out annually totaling (10) 55 gallon garbage cans. Information on native plants and patch-burn grazing systems is also provided. Partnering NRDs provide contributions to purchase high diversity seed mix from Prairie Plains Resource Institute. The mix contains hand-harvested forbs, and tall grass species.

2019: CPNRD developed a website to track the success of the project. Landowners document their plot by adding a location and photo of their plot. A QR code for landowners to scan with their phone was also developed to take them to the website. The NRDs are planning to continue the project in the future. Website: <https://arcg.is/1Ca1iP>

2023: Twelve NRDs provided \$200 in funding for this project totaling \$2,400.

Range Management Objectives

1. To establish adequate permanent cover on all Class VII land, with minor exceptions in accordance with Central Platte NRD's Rules and Regulations.
2. To establish approved cultural management practices, vegetative practices or structural improvements.

IX. Outdoor Recreation

GOAL: Incorporate park and/or recreation features into other District programs and assist organizations, groups, and government agencies in developing facilities to meet park and/or recreation needs.

Possibilities for developing outdoor recreation resources in the District are limited only by the willingness of the people to support a program. Development of parks & recreation facilities is an expensive endeavor and the pace of development is highly dependent upon the public value and priorities for the tax dollars that are needed. Water harnessed under flood control projects and other multipurpose reservoirs can and does serve recreation needs.

TRAILS

Kearney Area Trail System - 2005

CPNRD approved funds to support a 13-mile trail system for the Kearney Area Trail System. The initial 2009 construction timeframe was delayed due to a fire that burned a bridge over the Platte River. CPNRD used original funds agreed upon to provide assistance to rebuild the bridge. In 2014, a new bridge was built, the 1.7 mile trail was paved and repairs were made to the main channel bridge.

COST: CPNRD funded \$60,000 in 2007 for Phase IV and \$50,000 in 2008 for Phase V.

PARTNERS: Nebraska Department of Roads, Kearney Recreation Department, NGPC, CPNRD

Wood River Flood Control Project Trail

A hike and bike trail was established by the city of Grand Island on the Wood River Flood Control Project's levee system, providing an additional two miles to Grand Island's trail system. The western portion of the trail is complete with future plans extending the length of the entire project. PARTNERS: City of Grand Island, CPNRD

Central City/Marquette Trail - 2016

In 2006, a request for the NRD to enter into a Joint Action Agency to develop a plan for a Central City/Marquette Hike and Bike Trail was brought to the board. In 2011, the Nebraska Trails Foundation agreed to ownership of the trail and it has since repaired a bridge south of Central City and opened the trail. In 2016, CPNRD provided \$5,000 in funding to the Platte PEER Group to complete the final mile of the trail. COST: \$5,000

Johnson Lake Trail - 2018

From 2018-2020, CPNRD funded seeding and reseeding 10,000 square feet of the new Johnson Lake Trail. The area starts at the gazebo and extends south to Pelican Bay Drive. COST: \$600

PROJECTS

B-1 Reservoir - 1983

B-1 is the largest of seven flood control structures in Buffalo Creek Watershed. Construction included a supply canal, 1.6 miles of power line relocation and 1/2 mile of county road improvements. In addition to flood control, the project was expanded to include recreation and groundwater recharge. Recreation includes seasonal primitive fishing, kayaking and wildlife viewing.

Crane Viewing Sites - 1994

In 1993, a task force of various governmental and private agency representatives was brought together by CPNRD to develop ideas in response to concern about safety for local residents, farmers and crane watchers in the Central Platte valley, especially during early morning and late afternoon hours on local roads. The Task Force developed a comprehensive plan known as the Central Platte Historic, Scenic and Trails Project to be completed in phases. Approval was granted in 1994 by the Nebraska Department of Transportation under the federal Intermodal Surface Transportation Efficiency Act (ISTEA) for Phase I of the comprehensive plan developed by the task force. According to the grant application, the multi-year project promoted awareness of the historic importance of the Central Platte Valley as a transportation corridor dating from the early 1800s. The corridor was used by explorers such as Stephen H. Long and John Charles Fremont and by fur traders who passed back and forth on and along the Platte River. In the period from the 1840s-1860s, the Platte River Valley was a virtual "superhighway" as the major transcontinental route of the covered wagon migration; it became known as "The Great Platte River Road."

Three roadside turnout areas between Doniphan and Shelton on the road along the south side of the Platte were developed in Phase I. A portion of the cost was paid under the ISTEA and the remaining cost was contributed by the NRD and participating counties-Hall and Buffalo. The Audubon Society provided land for a roadside turnout near

Shelton. The viewing decks provide a safe and bird-friendly way to view cranes and waterfowl. Because safety was the original purpose of the task force, a top priority for Phase I was given to getting people off of the county roads and bridges during the crane viewing season.

Alda Crane Viewing Site

Located 2 miles south of the I-80 Exit 305 with three additional roadside turnouts located south and east of the Alda interchange on Platte River Drive, at the intersection of Elm Island and Lowell roads.

2010: Groundwater Foundation designated it a "green site". Kiosks were updated in 2015/2021.

2022: JEO's contract for \$58,290 was approved to develop a final design, permitting and construction services for boardwalk improvement features, parking lot paving/expansion, trail replacement details & fishing access.

COST: \$315,000 estimate; CPNRD's share \$16,000 Grants received:

Recreational Trails Program (RTP) \$250,000-RTP administered by NGPC. CPNRD provides 20% match.

Nebraska Environmental Trust \$75,000-NET to be used exclusively for repairs on streambank near deck.

2023: Permitting, bidding and construction expected in late 2023. CPNRD requested and received an extension for timeframe from NET from 06/30/24 to 07/31/24.

Richard Plautz Crane Viewing Site

Located 1.5 miles south of the I-80 Exit 285 near Gibbon. Site has two elevated wooden viewing decks, 1,650' trail and parking lot.

2016: Audubon at Lillian Rowe Sanctuary was created a new viewing pull-out just south of the south channel on the west side of 43rd Road near Gibbon for a better crane viewing location, and to remedy safety issues by providing more parking space to reduce the number of cars parking on rural roads.

2020: Received two grants to assist with rehabilitation of the site. Morten Construction, Kearney, constructed a concrete trail, parking lot, streambank stabilization and riprap placement. The project was completed in 2021.

COST: \$315,000; CPNRD's share \$16,000

Grants received:

Recreational Trails Program (RTP) \$259,500 - RTP administered by NGPC, CPNRD provides 20% match.

Nebraska Environmental Trust \$50,000 - NET used exclusively for repairs on the streambank near deck.

Crane Meadows Stabilization - 2001

Funding was provided to Crane Meadows Nature Center for bank stabilization erosion control for 200 feet of bank stabilization; 10,000 sq ft of wetland restoration and reseeding; and erosion control of an island. COST: \$2,600

Great Platte River Archway Stabilization - 2002

Funding provided to Great Platte River Road Archway Monument for a streambank stabilization project west of the Archway in Kearney. The North Channel of the Platte River and Turkey Creek eroded to within five feet of a local sandpit. The Corps of Engineers surveyed the erosion and provided an Emergency 404 permit to CPNRD.

COST: \$13,500, City of Kearney provided 25% of the cost.

Urban Conservation Program

2017: Two cost-share programs were implemented to assist cities, villages and counties establish and/or improve public recreational areas and trails, lake dredging, and acquisition of land or land rights for recreational purposes.

2022: the Board updated the ranking priorities and removed the deadline criteria to accept applications year-round. They also added new recreation, safety and education features to the funding priorities.

- **Recreation Area Development Program** Assist sponsors with the acquisition of land, or land rights, and to establish, develop and improve public recreational areas, including lake dredging. The cost-share rate is 50% of eligible project costs up to a maximum of \$40,000.
- **Trails Assistance Program** Cost-share with sponsors on trails projects that have received funding under the Transportation Enhancement Program administered by the Nebraska Department of Roads or the NGPC. The cost-share rate is 50% of the local share of the project with a program maximum of \$40,000.

Urban Conservation Projects approved:

2018 City of Grand Island - \$30,000 picnic shelters at Sterling Park & City of Kearney - \$17,965 Whitewater Park

2019 City of Gothenburg - \$10,000 bank stabilization at Lake Helen

2020 & 2021 No applications

2022 City of Lexington - \$30,000 Lexington Patriot Park and Pond & Village of Cairo - \$20,000 North Ball Field

Outdoor Recreation Objectives

1. To incorporate, wherever feasible and desirable, park and/or recreation features into other District programs.
2. To assist, as time and funds permit, other organizations, individuals, groups and government agencies in developing facilities to meet park and/or recreation needs of the District.

X. Pollution Control and Solid Waste Disposal

GOAL: To protect and enhance the quality of land, air, surface water and groundwater within the District.

Pollution control, solid waste disposal and sanitary drainage have been addressed by CPNRD, although federal and state governments have taken most of the responsibility for all of these. Additionally, municipalities and county government are mandated by state law to share the responsibility. The biggest role for NRDs appears to be in the area of non-point source groundwater pollution, although the NRDs have responsibilities for all forms of pollution.

Air Quality

Air quality across the District is excellent. Complaints are sometimes received by the District, but they are generally handled by local health departments, the NDEQ or the U.S. Environmental Protection Agency. Some common complaints develop when farmers cause smoke by burning residue in their fields or involve odors from feedlots. These conditions are generally of short duration and are settled on a local basis. Industrial air pollution is limited in its extent since there are no metropolitan-size industrial cities in the District, and most plants make an effort to comply with industry and government regulations that prevent major problems. During certain times of the year, when the combination of dry weather, strong winds and open fields are all present, the air quality is poor due to blowing dust. Tree planting is encouraged by the NRD to reduce this problem.

Land Quality

Improper disposal of solid waste, petroleum products, chemicals and other waste products may cause land pollution and contribute also to water quality concerns. CPNRD will continue to play a minor role in the area of solid waste management, providing technical information/expertise for disposal studies and working within a multi-government framework to meet regional needs. In 1992, the Nebraska Legislature adopted LB 1257 to address solid waste disposal problems.

The law, known as the Integrated Solid Waste Management Act, requires municipalities and counties to provide for solid waste management services. Many communities already had sites for disposal of solid wastes, however, most dumps and landfills did not meet the Act's regulatory requirements and needed to be improved or relocated in order to meet those standards. The NRD will continue to monitor the quality of natural resources and will initiate or update current programs as necessary.

CPNRD has provided funding to the Grand Island Area Clean Community System for educational programs and cleanup events and to the City of Kearney's Household Hazardous Waste Program.

Pollution Control and Solid Waste Disposal Objectives

1. To establish irrigation water management techniques on all irrigated land to properly conserve and efficiently utilize soil, water and fertility.
2. To protect and preserve the quality of ground and surface waters that presently meet acceptable standards as adopted by the U.S. Public Health Service & Nebraska Department of Environment and Energy.
3. To improve the quality of groundwater and surface water not presently meeting the standard to such a level as to at least meet water quality criteria contained in the standards.
4. To establish adequate permanent cover on all Class VI & VII lands and re-establish cover on those range and pasture sites classified in "poor" condition in order to reduce erosion and sedimentation in surface waters.
5. To establish approved cultural management practices, vegetative practices and structural measures, as needed, on all land to prevent wind and water erosion, in order to reduce erosion and sedimentation in surface waters.
6. To establish erosion control measures as needed, on all industrial development sites, residential development sites, road construction sites & other non-agricultural sites; in order to reduce erosion and sedimentation in surface waters.

XI. Information and Education

GOAL: That the public will develop a connection with natural resources conservation and management through accurate knowledge and understanding of the District's objectives.

The Nebraska Legislature gave NRDs a regulatory role which requires keeping the public informed about programs and requirements. The Board depends on the public to be informed to ensure that constituents' priorities are addressed and to provide factual information on natural resources issues.

INFORMATION PROGRAMS

The public is informed about groundwater utilization, groundwater quality including high nitrate areas within the District, flood control, soil health, forestry, native prairies, grasslands, invasive plant species, wildlife habitat, endangered species, pollinator habitat, rules and regulations, management plans and research studies.

In Perspective Newsletter

2014: The NRD began to insert the newsletter in the District's 12 local newspapers. Staff continued to mail 1,300 copies and email 230 digital editions. Previously, the newsletter was mailed only to landowners in Phase II/III GWMA's and other agencies reaching 6,500 households.

2023: With the merger of several local newspapers and decline in printed subscriptions, newsletters inserted in newspapers was reduced from 38,650 to 30,580. 1,227 are mailed and 201 are emailed.

Brochures

Brochures are available for all NRD programs. Displays provide information about NRD programs in the NRD lobby and at local events, conferences, agricultural trade shows, etc.

Branding

2008: NARD adopted *Protecting Lives, Protecting Property, Protecting the Future* as the slogan to be used by the NRDs in public outreach efforts.

2015: CPNRD provided \$3,710 towards a 1-hour video-*Keeping Nebraska Local: A Unique Approach to Resource Management*, produced by NETV featuring Nebraska's NRDs. Director Mick Reynolds narrated it.

2016: The NRD's new logo was designed. It is utilized for marketing, promotions & advertising.

2017: Red Thread, Lincoln, developed a branding video for used for outreach and educational events. Cost:

2019: Mayhew Signs was hired to design and install an 8' double-sided aluminum outdoor sign with the NRD's logo and slogan. Cost: \$13,716

2020: An audio jingle was produced by World Wide Audio Media/Creative Radio. The jingle is included in the NRD's radio, television and digital ads and radio programs. Cost: \$1,800

Social Media

2015: The NRD's website (cpnrd.org) was overhauled. Social media efforts were expanded adding Facebook and Twitter accounts.

2021: Provident Promotions of Hastings, rebuilt the website for \$9,000 and \$35 monthly fee to host the site. The new site launched on March 1, 2021.

Media Relations

Press releases to local radio stations, television, magazines and social media posts provide timely information to the media. CPNRD also participates in radio talk shows with KRVN and KRGH radio stations. Advertising is purchased for radio, television and web prerolls on the District's programs and events.

2020: Began advertising on Telemundo television to inform the Spanish-speaking population about the NRD.

2023: Several local newspapers were purchased by larger companies; resulting in lower numbers of residents who subscribe to printed newspapers.

Outreach/Events

CPNRD participates in community projects and events including: Husker Harvest Days, NARD Foundation, Nebraska State Fair, Summer Orientation About Rivers, Earth Day, Leadership Tomorrow, Conservation Nebraska, other community/civic organizations.

- **Annual Water Programs Update:** Winter event to inform the public about CPNRD's water programs. The location is rotated throughout the District.
- **2023:** PSM Birding Event - Held in April from 8:00-Noon at PSM site near Grand Island. 23 people attended.
- **50th Anniversary Open House** - In 2022, Grand Island Mayor Roger Steele presented a proclamation declaring July 11-15 "NRD Week". 175 people attended including four senators. CPNRD also participated in NARD's year-long 50th anniversary campaign.
- **NARD Basin Tour** In 2023, 65 people attended the NARD basin tour hosted by CPNRD. The tour made several stops across the district including the Prairie-Silver-Moores Flood Risk Reduction Project, Raising Nebraska/ Outdoor Learning Area at Nebraska State Fairgrounds, the Alda & Gibbon Crane Viewing Decks, B-1 Reservoir, and Cozad Ditch Company headgates.

Conservation Awards

Nominations are submitted for the NARD and/or Master Conservationist Awards annually.

2013: Great Western Bank approached CPNRD to partner in recognizing landowners who use best conservation practices. Awards were given for cropland, grassland and community efforts.

2017: The board discontinued the awards when Great Western Bank decided not to continue sponsoring the awards ceremony.

EDUCATION PROGRAMS

CPNRD provides several avenues of natural resources education for educators and students. The *Natural Resources Link Newsletter* is sent to all schools within the District to promote NRD activities available through the Project Wild, Project Wet, Project Learning Tree, and Aquatic Wild curriculums. The NRD's information/education specialist is certified in these curriculums and provides activities and presentations to classrooms as requested each month. In 2019, \$5,000 was budgeted to increase presentations and materials for K-12 classrooms in the District.

Nebraska Children's Groundwater Festival

2004: The NRD began coordinating the Nebraska Children's Groundwater Festival for 4th-5th grade students at the Central Community College/College Park in Grand Island as requested by the Groundwater Foundation. CPNRD is the main sponsor, providing \$10,000 annually with donations from businesses and individuals allow schools to attend at no cost. Up to 1,000 students attend annually; and 300 presenters and volunteers help with the event. Over 30,000 students have attended the festival in-person since 1985.

2019: Received the Grand Island Izaak Walton League of America award and the national IWLA Roll Call award for outstanding contributions to the conservation of our nation's natural resources. To align with the Nebraska State Standards, the Festival Committee decided to invite only 5th-grade students to attend the Festival, instead of inviting 4th and 5th grades.

2020-2021: In 2020, the Festival was canceled due to COVID-19 restrictions. The 2021 Festival was held virtually from April - June. Participation included 44 teachers from 30 schools totaling 1,250 students.

Arbor Day

In 1992, CPNRD began providing seedlings to area schools to celebrate Arbor Day. The NRD orders up to 1,000 seedlings from Halsey to deliver to area schools for Arbor Day. Presentations are provided when requested.

Outdoor Classroom Program

The NRD began funding outdoor classrooms for schools, outdoor learning areas for communities, and mini-school grants in 2001. Schools that have received funding are Grand Island Northwest; Lexington District #22; Wood River Elementary; Centura Public Schools; Horizon Middle School, Northeast Elementary, and Glenwood Elementary in Kearney; Doniphan-Trumbull Elementary, Cozad Community Schools, Grand Island Senior High, Kearney High School. The NRD has provided funding for 22 outdoor learning areas since 2001. In 2021, the application was changed to state that the outdoor classroom site must be located on public property.

Outdoor Learning Area

CPNRD staff are members of the Grand Island Groundwater Guardian (GWG) Team and instrumental in providing updates and maintenance to the Outdoor Learning Area (OLA). From 2011-2012, the GWG team received \$47,500 in grants to promote rain gardens, native prairie, a bioswale, and Buffalo grass on the Nebraska State Fairgrounds. Groundbreaking ceremony was held to unveil the project. The OLA is open year-round to the public.

2018: Education features were added including a life-size Bald Eagle's nest, wildlife track stepping stones and tree displays. The Buffalo Grass was also reseeded.

2019: A pollinator path was added to the native prairie area and fencing to reduce damage from rabbits.

2021: Gazebo was refinished by Izaak Walton League, plants were transported from the City of Grand Island's welcome sign, sprinkler system was updated and new signs were installed.

2023: The Nebraska Well Drillers Association selected CPNRD's application for a monitoring well at the OLA. The well will be drilled in October and utilized as a training session. A ribbon-cutting ceremony will be held following the training. CPNRD plans to install telemetry on the monitoring well to show real-time static water level data on CPNRD's website.

College Scholarships

2007: Implemented a high school scholarship program for students to further natural resources education. The program funded ten students at \$1,000/academic year. In 2014, the program name was changed to CPNRD-Ron Bishop Memorial College Scholarship to honor former manager, Ron Bishop.

2018: Program was changed to provide five \$1,000 scholarships to junior and senior college students pursuing natural resources degrees.

Land and Range Judging Contests

The South Central Land Evaluation and the Area 4 Range Judging contest are co-hosted with NRCS. CPNRD's staff is responsible for school registration, scoring, coordination and training volunteers, assisting in field activities, meals and award distribution. NRCS finds and prepares site locations and conducts field activities. UNL Extension also partners by providing staff from the county offices.

2023: ScanTron will be used for scoring at Land Judging contests. NARD and the NRDs shared the cost of the ScanTron machines. CPNRD provided \$1,030 towards the purchase of the Central Region machine. The Range Judging Steering Committee has formed a sub-committee to consider developing a ScanTron grading card.

NCF-Envirothon

The Central Region Envirothon is co-hosted with Lower Loup NRD and the state Envirothon location is rotated each year. In 2021, the international NCF-Envirothon was hosted virtually by Nebraska's NRDs with 41 teams competing from the United States, Canada and China. The NARD Foundation provided cash prizes to the top ten placing teams with New York winning the top prize of \$15,000. Prior to 2021, Nebraska last hosted the national contest in 1996.

Platte Basin Timelapse

\$2,000 was provided towards the *Timelapse: Monitoring Change Over Time* project. The NARD board partnered with Michael Forsberg and Nebraska Environmental Trust to create STEM curricula, meeting Nebraska standards for schools. Materials were developed with teachers and curriculum designers, with input from agricultural experts and the Nebraska Department of Education. The project was presented at the 2017 Nebraska Children's Groundwater Festival. CPNRD utilizes the curriculum for youth activities. The project is also featured at Raising Nebraska and is utilized for the NRDs Largest Classroom Days activities during the Nebraska State Fair.

Wellness Program

The Wellness Program was implemented to educate the board and staff about many types of health-related topics, hold lunch and learns, and promote participation by offering health-themed challenges. The committee offers volunteer health screenings, CPR/AED/First Aid and safety trainings. Information is provided about health-related events and other wellness opportunities in the community.

Wellness Program *(continued)*

2010: CPNRD began offering wellness activities for staff members including fitness/nutrition challenges, quizzes, and health tips. NARD initiated an effort with all NRDs to start wellness programs since data shows that employee health management initiatives bring value to employees and performance in a multitude of ways.

2013: the CPNRD Wellness Committee was officially developed. A Worksite Wellness Employee Interest Survey determined that employees are interested in health-related and team-building activities.

Information and Education Objectives

1. Establish and implement information and education programs for the general public about NRD's duties, responsibilities and objectives.
2. Establish and implement information and education programs for those people with direct interests in the District, specific projects and programs.
3. Work with the news media in order to improve the understanding of the general public about the District and its projects and programs.
4. Assist in developing curricula for use in educating elementary, secondary and post-secondary students about natural resources, conservation and environmental issues.
5. Assist in training teachers and leaders of educational organizations to maximize the use of the curricula that have been developed.
6. Promote communications program designed to enhance the knowledge and understanding of the District's directors and staff about the priorities and expectations of the citizens of the District.

STAFF TIME REQUIREMENTS

Summary of Projected Needs-Annual Work Hours Required (2023-2028)														
Staff	Admin	O&M	Planning	Range Mgmt	Info/ Education	GW/SW, Water Supply	Water Quality, Pollution, Waste	Flood Reduction	Drainage	Soil Con, Erosion	Forestr Mgmt	Fish, Wildlife Habitat	Rec/ Parks	Total
General Manager Lyndon Vogt	1,000	40	200	10	40	800	180	40	40	40	20	20	20	2,450
Assistant Manager Jesse Mintken	480	320	160		50	240	160	450	250	80		100	160	2,450
Administrative Assistant Kelly Cole	1,800		20					50	5	5	160	40		2,080
Cozad Ditch Manager Mike Schmeeckle			100			1,900			80					2,080
Cozad Ditch Rider Jake Laird			80			2,000								2,080
Communications Assistant Brody Vorderstrasse				80	2,000									2,080
District Research Agronomist Open	200		400		480	200	800							2,080
GIS Coordinator Angela Warner	60		40		60	1,680	240							2,080
GIS Image Analyst Luke Zakrzewski	40		40		40	1,680	220		60					2,080
Hydrologist Brandi Flyr	120		160		40	1,600	40	40				80		2,080
Information/Ed Specialist Marcia Lee	200		280		1,600									2,080
Integrated Programs Coord. Open	100		40		600	100	200							1,040
Precision Conservation Darren Cudabeck	580		1,500											2,080
Prescribed Burn Planner Nelson Winkel	100	100	1,500	260	40						80			2,080
Projects Assistant Tom Backer	200	500	100			200	560				650		50	2,260
Range Management Specialist David Carr	240	200	400	760	200		460							2,260
Resources Conservationist Bill Hiatt	40	660	80	400	200		300	180			120	80	80	2,140
Resources Conservationist Shane Max	40	40	40		15	1,325	240	200	120	120				2,140
Secretary-CPNRD Deb Jarzynka	1,800	20			15	110	25	20	20	20	25	15	10	2,080
Secretaries (4) NRCS Field Offices					20	100	100			7,800	200	100	0	8,320
Thirty Mile Secretary Marci Ostergard						380								380
Thirty Mile Manager Jim Harris			200			1,800			80					2,080
Thirty Mile Technician Mike Ostergard						2,080								2,080
Water Quality Specialist Tricia Dudley	200					300	1,280	100	100			100		2,080
Water Resources Specialist Dan Clement	60	80			80	800	960			100				2,080
Water Resources Tech Courtney Widup	80		100		300	1,250	350							2,080
Total	7,540	1,960	6,640	1,510	5,380	18,345	5,315	1,080	755	8,165	1,255	535	320	58,800

Fiscal Budgets

Below are the FY 2023 and 2024 Fiscal Budgets that were adopted by the Central Platte NRD Board of Directors, in accordance with state statutes.

The money that the NRD receives from local property taxes provides funding for flood control, water quality and water quantity programs, soil health, tree planting, wildlife restoration areas and many other natural resources benefits. The NRD strives to conserve and preserve natural resources for the residents of central Nebraska.

GENERAL & SINKING FUNDS	FISCAL 2023	FISCAL 2024
Cash, Investments & Co. Treasurer	\$14,306,019.55	\$14,841,636.75
Revenue	\$9,746,894.43	\$15,287,921.73
Total Balances on Hand & Revenue	\$24,052,913.98	\$30,129,558.48
General Fund Requirements	\$27,329,482.32	\$33,823,204.95
County Treasurer Commission	\$43,519.43	\$47,784.42
Sinking Fund Requirements	\$1,075,374.36	\$1,084,795.86
Total Requirements-Both Funds	\$28,448,376.11	\$34,955,785.23
Property Tax Required		
General Fund	\$4,395,462.13	\$4,826,226.75
Sinking Fund	-0-	-0-
Total Both Funds	\$4,395,462.13	\$4,826,226.75
The District's 2024 total valuation received from the 11 county assessors is \$20,642,169,013. The overall valuation increase compared to last year is 10.08%. The property tax asking for Fiscal 2024 required an increase of \$430,764.62 from last year.		

Fiscal 2022/2023 Levy	General Fund	0.023440	Both Funds
	Sinking Fund	0.00000	0.023440
Fiscal 2023/2024 Levy	General Fund	0.023380	Both Funds
	Sinking Fund	0.00000	0.023380



Central Platte Natural Resources District

Main Office: 215 Kaufman Ave Grand Island NE 68803-4915

(308) 385-6282 Fax: (308) 385-6285 www.cpnrd.org

Cozad Office at Thirty Mile Irrigation District: 75887 Road 414 Cozad NE 69130

(308) 380-8943 Fax: (308) 385-6285

USDA Natural Resources Conservation Service (NRCS) Field Offices

Grand Island 703 S Webb Road Grand Island NE 68803 (308) 395-8586

Central City 1708 31st St. Ste. 2 Central City NE 68826 (308) 946-3035

Kearney 4009 6th Ave Ste. 4 Kearney NE 68845 (308) 237-3118

Lexington 721 E Pacific Ste. 2 Lexington NE 68850 (308) 324-6314

Osceola PO Box 547 Osceola NE 68651 (402) 747-2461

Nebraska Association of Resources Districts

Lincoln 8100 S 15th Street Ste B Lincoln NE 68512 (402) 471-7670

The 2022-2027 Long Range Implementation Plan was approved by the
Central Platte NRD Board of Directors on September 22, 2022.