# Upper Republican Natural Resources District

# Long Range Implementation Plan

**2023-2027**

## Introduction

The Upper Republican Natural Resources District ("District") is one of 23 Natural Resources Districts created in 1972 subsequent to the Nebraska Legislature enacting Legislative Bill 1357 in 1969 to combine 154 special purpose agencies and entities. The boundaries of the NRDs are generally consistent with the natural geographic boundaries of the river watersheds of Nebraska. Nebraska statutes require that Natural Resources Districts develop Long Range Implementation Plans that summarize planned District activities and needs for the current year, and project said activities and needs for the next five years. Additionally, the plan is intended to help guide decisions for the District, inform the public of the District's plans and help with budget preparations.

## Authority and Responsibilities

In accordance with section 2-3229 in the Revised Statutes of Nebraska, the purposes of Natural Resources Districts are to develop and execute, through the exercise of powers and authorities contained in this act, plans, facilities, works and programs relating to: (1) erosion prevention and control; (2) prevention of damages from flood water and sediment: (3) flood prevention and control; (4) conservation; (5) water supply for any beneficial use; (6) development, management, utilization, and conservation of groundwater and surface water; (7) pollution control; (8) solid water disposal and sanitary drainage; (9) drainage improvement and channel rectification; (10) development and management of fish and wildlife habitat; (11) development and management of recreational and park facilities; and (12) forestry and range management. Pursuant to Revised Statute 46-715, the District has jointly developed and implemented with the State of Nebraska an Integrated Management Plan that is periodically revised to reflect changing conditions. The URNRD's Integrated Management Plan was last revised in 2021 and became effective Sept. 27, 2021. It contains protocols associated with the State's and District's efforts to ensure continued compliance with the Republican River Compact ("Compact") and associated settlement agreement.

## Description of the District

The Upper Republican Natural Resources District is located in the Upper Republican River Basin in southwestern Nebraska and includes 1,727,400 acres of land. Approximately 51% of the land mass is rangeland, pastureland or otherwise grass; 24% is irrigated cropland; 23% is dryland cropland; 1% is open water, wetland or riparian areas; and .007% is other uses including cities, villages and commercial development.

The District includes all of Chase, Dundy and Perkins Counties and is contained within the Republican River Basin with the exception of a small portion of north central and northwestern Perkins County that is within the Platte River Basin. There are fifteen communities and villages in the District: Venango; Lamar; Grant, Madrid; Elsie; Grainton; Imperial; Champion; Enders; Wauneta; Brandon; Haigler; Parks; Benkelman; and Max. The North Fork of the Republican River, the South Fork of the Republican River, the main stem Republican River, Frenchman Creek, Spring Creek, Stinking Water

Creek, Buffalo Creek and Rock Creek are some of the significant streams that flow through the District. The population of the District is approximately 9,000 in the three counties.

The economy of the District is predominantly associated with agriculture, and primarily irrigated crop production that developed as a result of abundant groundwater availability and productive soils. The District is situated above a portion of the High Plains Aquifer where the average saturated thickness of the aquifer was approximately 182' in 2022. Approximately 99.5% of the irrigated cropland in the District relies on groundwater; the remainder on surface water.

Average annual precipitation in the District ranges from about 17 inches to 20 inches, with 75 percent of the precipitation occurring between April and September. The District is geologically diverse with a range of soil types including silt loam, sandy loam and sand.

## Governing Body

The District is governed by an 11-member Board of Directors. The directors are elected at the general election for a term of four years.

The district is divided into ten (10) sub districts. One board member is elected from each of the ten sub districts. One board member is elected at large every four years. The District operates by a set of rules and regulations which are kept on file at the NRD office in Imperial, Nebraska.

## Integrated Management Plan Goals and Objectives

The overriding goal of the Upper Republican NRD is to responsibly manage the natural resources of the District for the benefit of the people of the District and the State. The following goals and objectives, paraphrased, have been jointly adopted by the URNRD and the State in the Integrated Management Plan:

- Maximize the URNRD's efficient and beneficial consumptive use of the available water supply, increase certainty for long-range planning of water supplies, and increase collaboration among all water users in the URNRD.
- Apportion the URNRD's share of Compact compliance responsibility equitably and minimize adverse impacts of compliance actions
- In cooperation with the State and other NRDs, maintain compliance with the Compact as adopted in 1943 and as implemented in accordance with the 2003 settlement agreement.
- Ensure that water users within the URNRD assume their share, but only their share, of the responsibility to maintain compliance with the Compact.
- Ensure that the URNRD's share of that responsibility be distributed within the URNRD in an equitable manner and to minimize, to the extent possible, adverse economic, social and environmental consequences arising from compliance activities.
- Protect groundwater users whose wells are dependent on recharge from the stream or river and the surface water appropriators on such river or stream from streamflow depletions caused by surface water uses and groundwater uses begun after the date the river basin was designated as fully appropriated.

- Reserve any stream flow available from regulation, incentive programs, and purchased or leased surface water and groundwater required to maintain Compact compliance from any use that would negate the benefit of such regulations or programs, to the extent allowed by statute and the surface water controls.
- Prevent the initiation of new or expanded uses of water, with limited exceptions, that increase Nebraska's consumptive beneficial use of water within the District, as required for Compact compliance and by Nebraska law.
- Ensure administration of surface water appropriations in the Republican Basin is in accordance with the Compact and Nebraska law.
- Assist in ensuring long term Compact compliance, reduce existing groundwater use within the District by 20% from the 1998-2002 baseline pumping volumes under average precipitation conditions so that, when combined with stream flow augmentation and incentive programs, the District's groundwater depletions are maintained within its portion of Nebraska's allowable groundwater depletions as computed through use of the Republican River Compact Administration Model. Additionally, voluntary reductions in baseline pumping volumes will continue to be pursued by the District with the incentive of limiting the level of long-term management actions that are needed during Compact call years.
- Make such additional reductions in groundwater use in Compact call years as are needed, after considering any reduction in beneficial consumptive use achieved through basin wide incentive and stream flow augmentation programs, to achieve a reduction in beneficial consumptive use in the District that ensures the District limits its groundwater depletions to the allowable groundwater depletions for the District.
- Ensure the reductions in water use required for Compact compliance are achieved through a combination of regulatory, incentive and augmentation programs designed to reduce consumptive use. To the extent funds are available, incentives programs will be made available through targeted incentive programs.
- Cooperate with the State to investigate and explore methods to manage the impact of vegetative growth on stream flow.
- Develop a program to provide offsets for new consumptive uses of water so that economic development in the District may continue without producing an overall increase in groundwater depletions because of new uses.

## Republican River Basin-Wide Plan

The URNRD in cooperation with three other NRDs in the Republican Basin, stakeholders throughout the Basin, and the Nebraska Department of Natural Resources, developed a Basin-Wide Plan pursuant to legislation approved in 2014. The plan was approved in 2019 and its purpose is to collaboratively manage hydrologically connected water resources in the Republican Basin. The Basin-Wide Plan contains the following goals and objectives:

- Maintain Nebraska's compliance with the Republican River Compact and applicable state laws.

    - Coordinate basin-wide plan management with Nebraska's Compact compliance efforts and adherence to applicable state laws.
    - Understand the effects of management actions for Compact compliance on water supplies for Nebraska's water users.
- Assess progress towards meeting the goals and objectives of the Basin-Wide Plan.
- Maximize Nebraska's efficient and beneficial consumptive use of its portion of the water supply, increase certainty for long-range planning of water supplies to reduce the need for regulatory actions, and increase collaborative efforts among water management entities and stakeholders across the basin.
- Understand the feasibility and potential impacts of Basin-Wide Plan actions and establish a standard procedure for projects.
- Improve the efficiency of use, availability, and reliability of water supplies for current irrigators.
- Provide opportunities for collaboration among the Basin's water users.
- Promote conservation programs available to the water users in the Basin.
- Understand how various water-management activities of independent decision-makers affect water supplies.
- Evaluate the feasibility and potential outcomes of establishing water markets in the Basin.
- Support the NRDs in management of allocations for irrigation purposes and surface water irrigation districts in management of the allotment of their water supplies.
- Conserve water for future use during a drought.
- Maintain positive public relations, including information sharing, within and outside the Basin.
- Improve information sharing with decision-makers and the public about solutions formed within the Basin.
- Improve information sharing with water users who are reliant on the Basin's water supplies.
- When possible, pursue projects that not only benefit water supplies and uses, but also create benefits for fish, wildlife, recreation and water conveyance within the Basin.
- Where feasible and beneficial, protect and enhance fish and wildlife habitat and public outdoor recreational opportunities.
- Where feasible and beneficial, reduce the effects of undesirable vegetation on water conveyance.

The District also has goals specific to the following realms that are described in the District's Master Plan: Groundwater management; soil conservation; hazard mitigation; range management; wildlife habitat and recreation; pollution control; floodwater and sediment management.

## Statutory Authorities

The URNRD Board of Directors initiates and executes plans and programs as appropriate under the powers and authorities granted by the Nebraska Legislature and according to the priority needs of the District as related to:

- Groundwater management, utilization and conservation
- Soil erosion prevention and control
- Range management
- Wildlife habitat and recreation
- Pollution control
- Prevention of damages from floodwater and sediment

## Groundwater Management Purpose

The members of the Board of Directors of the URNRD recognize that the underground aquifer partially underlying the District is a laterally confined aquifer and that there have developed, and will continue to develop, conflicts among users. Such conflicts among users have been partially based on a steadily declining water table within the aquifer in the URNRD. Therefore, the actions of the Board are of utmost importance in protecting all uses of groundwater, which include domestic, agricultural, municipal, industrial, wildlife, and recreational uses from unmanageable declines and degradation in quality.

## 2023 Republican River Basin Objectives

- Utilize the NCORPE and possibly Rock Creek augmentation projects if needed so the District fulfills its share of responsibilities relative to maintaining Nebraska's compliance with the Compact and associated settlement agreement.
- With limited exceptions, prevent the initiation of new or expanded uses of water that increase Nebraska's computed beneficial consumptive use of water within the URNRD, as required for Compact compliance.
- Reduce groundwater use within the URNRD by enforcing existing rules and regulations, as part of an effort to reduce groundwater pumping, over the long term, by 20 percent from the 1998-2002 baseline pumping figures.
- Investigate and explore methods to conjunctively manage ground and surface water to maximize its availability for Compact purposes and other purposes consistent with prudent management of water that benefits the natural resources and residents of the District.
- Take policy positions and actions that protect the District's ability to operate the augmentation projects over the long term.
- Cooperate with the State to investigate and explore methods to manage the impact of vegetative growth on stream flow.
- Meet and make progress towards accomplishing objectives in the Basin-Wide Plan

## 2023-2027 Long Range Republican River Basin Objectives

- Monitor, provide testimony on, and inform citizens of the impact of pending legislation; and work with legislators to introduce and support legislation beneficial to the District.
- Cooperate with other agencies and ground and surface water users in the Republican River Basin to promote and implement practices that preserve water resources and/or increase water-use efficiency.
- Continue study of the conjunctive nature of ground and surface water in the District and implement projects that achieve conjunctive management objectives.
- Operate, when necessary, the Rock Creek and NCORPE augmentation projects to ensure Compact compliance in a manner that has the least negative impacts on the area economy.
- Continue to offset new consumptive uses of water to prevent increases in groundwater depletions as a result of new uses.
- Evaluate, along with the Nebraska Department of Natural Resources, trends in long term groundwater depletions over typically wet and dry cycles.
- Approve rules and regulations consistent with the District's water management goals.
- Maintain a requirement for the metering and regulation of all groundwater uses according to District standards.
- Implement, encourage and financially incentivize the use of technology that has the potential to reduce water use by irrigators.
- Utilize grants and District funds to reduce water consumption in areas with high impacts on streamflow and/or significant groundwater depletion.
- Inform District residents and other interested parties of District activities related to water preservation and compliance with the Compact.
- Continue to implement projects and programs that reduce and/or make more efficient the use of groundwater.
- Meet and make progress towards accomplishing goals and objectives in the Basin-Wide Plan.

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## 2022 Ground and Surface Water Activities

### Groundwater Management Area

Since 1978, the URNRD has adopted and enforced rules and regulations for managing groundwater within the URNRD.

In 2018, the District approved an allocation of 65 inches per acre – an annual average of 13 inches per acre - for the 2018-2022 allocation period. Significant rules changes approved during the previous allocation period and that were in effect for the 2018-22 allocation period were adopted that impose new penalties on irrigators who use more than 7.5 inches of carry-forward allocation and/or borrow allocation from the subsequent allocation period. For every inch more than 7.5 inches of carry-forward used during the allocation period, an additional inch of carry-forward will be subtracted

from irrigators' remaining carry-forward. Similarly, irrigators who do not have remaining carry-forward and who use all their 2018-2022 allocation and borrow allocation from the subsequent allocation period will lose an additional inch of allocation for every inch they borrow from the subsequent allocation period.

Since 1978, with adoption of its Order #1, the URNRD has required the metering, data collection and reporting of groundwater use, resulting in actual pumping and use data, and has imposed allocations and regulations on groundwater users within the URNRD. In May 2005, the URNRD adopted an Integrated Management Plan, effective for the 2005 through 2007 irrigation seasons, pursuant to LB 962 passed by the Nebraska Legislature. The IMP was updated March 13, 2008 when the URNRD Rules and Regulations were revised, and again with the adoption by the Board August 3, 2010, effective November 1, 2010.

The Board revised the IMP in December 2015, largely to implement a Compact accounting change approved by the U.S. Supreme Court in February 2015 and incorporate aspects of an agreement reached between the compact states of Nebraska, Kansas and Colorado. The revisions, among other things, allow the URNRD more flexibility in the timing of stream flow augmentation and helps ensure no more augmentation than what is necessary occurs to maintain Compact compliance. Additionally, a plan objective was modified to expand the rapid-response area near streams where additional pumping restrictions would be imposed if augmentation projects weren't sufficient to maintain Compact compliance. Expansion of the rapid-response area maintains a goal of reducing District-wide pumping by 20% from 1998-2002 pumping volumes under average precipitation conditions and eliminated the need for additional District-wide reductions for Compact compliance purposes.

The IMP is now in its fifth iteration, the latest version having gone into effect in September 2021.

The 2021 revisions, among other things, make the plan easier to read and understand, separate technical aspects of Compact accounting into a memorandum that can be modified more efficiently by the NRDs in cooperation with the State, changes in-state accounting methods, aligns the IMP with the Republican River Basin-Wide Plan, reflects changes in Republican River Compact Administration procedures, and makes changes to ensure updates remain consistent with deadlines. The change to in-state accounting methods will allow actual depletions to stream flow within the URNRD and the other NRDs in the Republican Basin to be considered when calculating remaining Compact balances for each NRD; previously, the balances were calculated using average depletions by each NRD from the 1998-2002 time period. Another significant change in the newly adopted IMP is the addition of a new IMP goal: Maximize the URNRD's efficient and beneficial consumptive use of the available water supply, increase certainty for long-range planning of water supplies, and increase collaboration among all water users in the URNRD. That goal was included to be consistent with the goals in the Republican River Basin-Wide Plan approved in 2019.

In Cooperation with the State, the District in 2022 continued efforts to permanently retire irrigated land with high impacts on stream flow from irrigated production. Thus far, agreements have been executed that will retire 2,824 acres from

irrigation. Doing so will aid compliance with the Republican River Compact and preserve water for future use.

The District also continued efforts to automate all flow meters so water-usage data is more readily available to staff and irrigators. A primary goal of the project is to allow irrigators to see how their usage compares to crop-water needs as estimated by nearby stations that estimate evapotranspiration, and how their usage impacts their available allocation under District rules and regulations.

In 2022, the District received applications for and contracted with landowners to provide cost share for 95 soil-moisture probes on approximately 12,350 acres. The probes were used during the 2022 irrigation season; research and anecdotal accounts from probe users indicate that they can reduce annual water usage by an average of approximately 1"-2". Cost-share funds are provided by the District and the State of Nebraska's Water Sustainability Fund.

Also in 2022, the District continued to work with the University of Nebraska's Daugherty Water for Food Global Institute (DWFI) to support operation and maintenance of two research-grade instrument clusters known as eddy-covariance towers that measure actual evapotranspiration (ET). The daily ET information is published on a website managed by DWFI and is available to irrigators to improve their irrigation scheduling. The URNRD also uses the data to verify ET rates estimated by three weather stations it owns and maintains in the District.

Collectively, District water conservation efforts in 2022 had a theme of promoting data-driven irrigation decisions to prevent over-watering. Progression of these efforts in 2023 and beyond will largely concentrate on completion of meter-reading automation and distribution of that data complemented by ET and soil moisture information so irrigators can efficiently make science-based irrigation decisions.

From a policy standpoint in 2022, the District for the first time was able to use a groundwater model that has been in development the last several years to help guide decisions on aquifer impacts of proposals to transfer certified acres, i.e. changing the location of cropland irrigation. The model was also useful when evaluating pumping and pumping offset impacts of a large, proposed cattle feedlot in the District.

## Groundwater Quality Sampling

The URNRD has had a continuous water quality sampling program since 1974, with more sampling sites added in 1980. The goal of the sampling was to determine nitrate concentrations of groundwater throughout the District. The sites were sampled in the winter and included a mixture of domestic and irrigation wells.

Beginning in summer 2017, the URNRD implemented a new nitrate sampling program. There are two rounds of sampling per year - irrigation wells in the summer and domestic wells in the winter. For the summer sampling, 135 irrigation wells were chosen to attempt to get a better representation of concentrations throughout the District. These wells were sampled in July and August of 2022. The median nitrate concentration was 3.41 mg/L and the average concentration was 5.23 mg/L. Both of those values are well below the EPA maximum contaminant level of 10 mg/L. In

addition, the same wells were sampled to estimate the arsenic and uranium concentration in the groundwater and to locate areas in the District where these elements may cause health concerns.

The winter sampling program involves sampling about 76 domestic wells per year on a five-year cycle for a total of 378 wells sampled every five years.

The proposed phase requirements for the new program are Phase 1: 0 to 5 mg/L, Phase 2: 5 to 10 mg/L and a decreasing trend, Phase 3: 5 to 10 mg/L and an increasing trend, and Phase 4: 10 mg/L and above. The summer sampling program showed 87 wells with a concentration under 5 mg/L, 28 wells between 5 and 10 mg/L, and 20 wells above 10 mg/L.

## Chemigation

Chemigation is the practice of applying fertilizers or other agricultural chemicals to land or crops through an irrigation system. To protect Nebraska's groundwater from possible back-flow of chemicals into irrigation wells, the Legislature enacted LB 284, the Chemigation Act. The act requires the operator of a chemigation system to obtain a permit prior to use. To obtain this permit, the irrigation well must be properly equipped, inspected and approved by the NRD before applying any chemicals. In 2022, the NRD issued 43 new chemigation permits and renewed 2,482 permits for a total of 2,525 permits. A total of 2,525 chemigation inspections were completed.

## Decommissioned Wells

Nebraska is one of several states where more than 90% of the people rely on groundwater for domestic use. Abandoned wells can be a threat to this water supply because they provide a direct link for contamination from the surface to the groundwater.

An abandoned well is a well that has not been properly decommissioned. Decommissioned means the act of filling, sealing and plugging a water well in accordance with Rules and Regulations of the Nebraska Health and Human Services. The URNRD has a decommissioning cost-share program. Reimbursement is 75% of actual cost not to exceed a maximum cost-share of $500 for all wells except $1,400 for a hand-dug well.

## Groundwater Well Measurement Sites

The URNRD has maintained a groundwater well measurement database since 1972. There are more than 400 wells measured twice annually for static water levels. The wells are measured in the spring and in the fall once irrigation season has been completed. Spring measurements more accurately reflect static water level conditions because they don't include effects of well drawdown that occur during and soon after pumping for irrigation. In spring 2015, the average static water level in the District was 126.1'. In spring 2016, the average static water level was 126.2'. In Spring 2017, the average static water level was 126.88'. The Spring 2018 average static water level was 127.8'. The spring 2019 average water level was 127.13'. The 2020 static water level

was 126.53'. The spring 2022 static water level was 127.3'. The spring average static water level for 2022 was 127.7'.

## URNRD Continuous Recorder Wells

The URNRD has 14 recorder wells, 12 of which are measured continuously by groundwater-level sensors connected to telemetry units that transmit data multiple times daily. Those recorder wells are also manually measured to ensure accuracy of the sensors; the District also has two recorder wells that do not have sensors or telemetry units and are manually measured only. Groundwater level data transmitted from the 12 sites with telemetry units is available on the District's website.

## Registered Irrigation Wells

The URNRD has copies of all irrigation well registrations in the District on file at the Imperial office. There are 3,344 registered irrigation wells in the District. In Chase County there are 1,405 irrigation wells, in Dundy County there are 998 irrigation wells and in Perkins County there are 941 irrigation wells.

## Groundwater Allocation – Flow Meters

Each well requiring a permit is equipped with a flow meter. The flow meter is installed, operated and maintained in accordance with the Rules and Regulations of the URNRD. The flow meters are required to be sealed. URNRD technicians have a servicing program for each of the three counties. Flow meters are serviced and read annually.

Flow meters that need to be repaired or replaced are picked up by District technicians after the irrigation season is finished. The URNRD does have an in-house flow meter repair shop.

Flow meters that need to be repaired and have failed to work during the irrigation season will need require the landowner provide information such as energy usage to help determine the amount of water pumped during the irrigation season.

## Ultrasonic Flow Meter

The URNRD has ultrasonic flow meters available for use in the District. The ultrasonic flow meters are available to check the accuracy of regular flow meters.

## Irrigation Runoff Complaints

The NRDs have statutory authority to handle all irrigation runoff complaints. When landowners receive irrigation runoff water on their property from another landowner, a complaint to resolve the problem may be issued to the URNRD. Usually, the URNRD is able to resolve these situations without going through the formal complaint process.

## Wellhead Protection Program

The URNRD has continued to work with the cities and villages of the District with their wellhead protection programs.

## 2023-2027 Ground and Surface Water Objectives

- Continue URNRD Groundwater Management Area programs.
- Continue sampling rural wells for nitrate results.
- Continue sampling irrigation wells in the District that are part of the Nebraska statewide network.
- Administer state and local cost-share funds to decommission abandoned water wells and provide 100% cost-share assistance within Wellhead Protection Areas.
- Work with area communities interested in developing State Approved Wellhead Protection Areas, offer assistance to gather data for delineation of Wellhead Protection Area maps, perform Contaminant Source Inventories, and produce and implement management plans.
- Provide guidance to communities in producing Source Water Assessment Protection Plans for the Nebraska Department of Environmental Quality.
- Continue to implement the Chemigation Program to inspect safety equipment on each permitted irrigation system in the District.
- Continue the District's Well Permitting Program.
- Continue to site registered and unregistered wells in the District using GPS.
- Continue to monitor changes in groundwater levels and quality in the District.
- Continue to implement the Flow Meter Servicing and Repair program for all the flow meters in the District.
- Continue to read the flow meters in all three counties and update the water usage database.
- Continue to measure the static water levels in 400+ wells.
- Continue to administer the Nebraska Soil and Water Conservation Program in the District.
- Continue to update and keep the water quality database current.
- Continue to mail out water usages to owners and operators after water usage has been calculated.
- Continue to mail out water sample results to landowners after the sampling has been completed.
- Continue to collect surface water samples from Enders Reservoir as requested by the state to test for coliform bacteria and toxic algae.

## 2023-2027 Groundwater Management Objectives

- Develop, promulgate and enforce rules and regulations that provide for appropriate protection of the aquifer, incentives to use water efficiently, conservation of groundwater, and maintenance and enhancement of groundwater quality.
- Conduct monitoring and other data collection activities and research necessary for interpretation of changes in groundwater levels and actual and potential pollution of the aquifer.
- Cooperate with other agencies to plan and conduct data-collection activities related to ground and surface water quantity and quality.

- Reduce the potential for non-point contamination of ground and surface water through education, research, management practices, incentives and rules that protect the water but also minimize adverse effects on the economy of the area.
- Carry out provisions of the Nebraska Chemigation Act by annually inspecting all chemigation systems in the District.
- Through education programs and cost-share assistance, encourage proper decommissioning of water wells that are no longer used.
- Cooperate with other entities including the Natural Resource Conservation Service, County Extension Educators, UNL West Central Research and Extension Center and DWFI to develop and participate in irrigation-efficiency research and education programs.
- Disseminate to citizens, agencies, and organizations information regarding changes in water quantity and quality in the District.
- Inform citizens and furnish materials to schools for educational programs about District activities and principles of water conservation and pollution prevention.
- Assist communities to plan and delineate appropriate wellhead protection areas.
- Incentivize the use of tools such as soil moisture probes that have the potential to reduce water use and/or make water use more efficient.
- Research and pursue conjunctive management projects that increase water supplies in the District.
- Assess variability of water supplies throughout the District and educate constituents.
- Implement flow meter telemetry systems that allow irrigators and the NRD to receive water usage in near real-time.

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## Soil Conservation

In response to the Erosion and Sediment Control Act (LB 474), passed in 1986, the Natural Resources Commission developed the Nebraska Soil and Water Conservation Strategy. This strategy outlines a course of action for efficiently conserving and managing the state's natural resources.

The goal of soil conservation in the URNRD is to maintain, and where possible improve, the quality and long-term productivity of soil resources of the District and prevent on-site and off-site damage from sediment caused by wind and water erosion.

### Erosion and Sediment Complaints

The URNRD responds to occasional erosion and sediment complaints. In most cases, these complaints are resolved before going through the formal complaint process.

### 2023-2027 Soil Conservation Objectives

- Cooperate with the USDA Natural Resources Conservation Service to develop conservation plans and to provide cost-share assistance to landowners for

eligible voluntary soil management practices that will reduce wind and water erosion.

- Administer State NSWCP funds to landowners for the construction of terraces, waterways, diversions and the planting of permanent vegetation.
- Continue to promote conservation tillage measures, pasture and range management, best-management agricultural practices, the Conservation Reserve Program (CRP), and the Conservation Reserve Enhancement Program (CREP).
- Continue to assist landowners in resolving soil erosion and sediment complaints.
- Provide financial support and staff time to conservation education activities.
- Continue to work with the Buffer Strip program and perform on-site inspections.
- Manage URNRD-owned properties in a manner that prevents soil erosion and promotes establishment of native rangeland.

### 2023-2027 Soil Conservation Long Range Objectives

- Maintain existing land treatment practices and programs.
- Continue to work with all counties in the District to reduce roadside erosion.
- Look for new and innovative soil and water conservation methods.
- Continue to support the Land and Range Judging Contests.
- Promote the use of and make available soil surveys and land use information.

## Hazard Mitigation Project

The URNRD has participated in a multi-jurisdictional Hazard Mitigation Plan with several entities in all three counties of the District. A Hazard Mitigation Plan is a pre-disaster planning document that provides a proactive approach to reduce damages from disasters through planning. By having a Hazard Mitigation Plan the jurisdictions involved are eligible for federal grant funding for mitigation projects. Pre-disaster mitigation projects are designed to reduce or eliminate damages that occur due to natural disasters such as wildfire, tornados, blizzards, drought, and flooding. JEO Consulting Group, Inc. has worked with the jurisdictions involved in Chase, Dundy and Perkins counties to develop the Hazard Mitigation Plan.

### 2023 Hazard Mitigation Objectives

- Participate in two Mitigation Alternative Meetings in each of the three counties.
- Revise Hazard Mitigation Plan as needed.

### 2023-2027 Hazard Mitigation Long Range Objectives

- Work as needed with entities in Chase, Dundy and Perkins counties to implement hazard mitigation projects identified in the Hazard Mitigation Plan to reduce or eliminated damages from natural disasters such as wildlife, tornados, blizzards, drought, and flooding.
- Ensure that the Hazard Mitigation Plan objectives and projects are achieving URNRD legislative goals and objectives for flood prevention and control.
- As needed, identify and submit FEMA revisions needed in county Hazard Mitigation Plans.

## Forestry, Range and Wildlife Habitat

The URNRD administers several programs designed to enhance the region's forest, range and wildlife land including the conservation tree program and WILD NE program. The URNRD sponsors Range Judging and Land Judging contests, and other school-oriented activities.

### 2023-2027 Forestry, Range and Wildlife Habitat Objectives
### Conservation Tree Program

Trees and shrubs may be obtained from the URNRD for windbreaks, shelter belts, wildlife habitat and woodlots. The District coordinates with NRCS on the design and planting of windbreaks and shelter belts. Many trees and shrubs are also made available for general uses not associated with plans approved by NRCS. During the spring of 2022, 14,375 trees and shrubs were distributed to District residents.

### WILD Nebraska Program

WHIP (Wildlife Habitat Improvement Program) is still discontinued but existing contracts are honored.

WILD Nebraska, the replacement for WHIP, is intended to encourage landowners to set aside land for wildlife habitat, but payment rates and acceptable practices have been adjusted in the new program to make it more flexible.

The new program bases its payments on average county rental rates. There are numerous habitat practices eligible for funding through this program. Funding for the program is split between the Nebraska Game and Parks Commission (75%) and the NRD (25%).

There is one WILD Nebraska contract in the District.

### 2023 Forestry, Range and Wildlife Habitat Objectives

- Continue to rent and maintain grass seed drills for landowners in the District.
- Provide grass seed for resale.
- Monitor and manage the District's Dundy County properties to promote grass emergence.
- Continue to partner with the Nebraska Game and Parks Commission to administer and implement the WILD NE program.
- Cooperate with Pheasant Forever chapters to enhance wildlife habitat and establish windbreaks.
- Continue to rent and maintain mechanical gopher getters for landowners to rent in the District.
- Provide gopher bait in different forms for resale.
- Continue to purchase conservation seedling trees for distribution to landowners in the District.
- Continue to sub-contract tree planting and weed barrier installation.

- Continue to make public hunting opportunities available at lands in Dundy and Perkins Counties owned by the URNRD.
- Continue to cooperate with other URNRD members of the Nebraska Cooperative Republican Platte Enhancement project (NCORPE) to make public hunting available at NCORPE.
- Cooperate with the Nebraska Game and Parks Commission to incentivize tall wheat stubble for wildlife and public hunting.

### 2023-2027 Forestry, Range and Wildlife Habitat Long Range Objectives

- Continue to sell trees and shrubs through the conservation seedling tree program.
- Provide information and education on tree planting, woodland management, grassland management, and proper wildlife habitat enhancement through the media and schools.
- Continue to make public hunting available on District lands and those owned by NCORPE.
- Monitor and manage the District's Dundy and Perkins Counties properties to promote grass emergence.

## Recreation

The District owns approximately 2,000 acres in Dundy County adjacent to, but not part of, the Rock Creek Augmentation project well field that are open to public hunting. The District is in the process of establishing native grasses on the property.

The District in 2022 acquired, for free, 55 acres of land in Perkins County that includes a playa that in years with average or above average precipitation can acquire wetland features. NRCS holds a permanent easement on the property intended to maintain these wetland qualities and prevent any sort of development. The land is open to public hunting.

## Drainage and Channel Improvement

It is the general policy of the District not to provide financial assistance for drainage improvement and channel rectification unless a project has public benefit and is sponsored by a city or county.

## Waste Disposal and Pollution Control

In recent years, Nebraska's solid waste regulations have changed. Landfills that weren't properly designed, operated or sited were required to shut down, as were unauthorized dumps. Now, all landfills must be approved and permitted by the State. If a permit is not issued, the landfill cannot legally operate. Currently, the only permitted landfill in the URNRD is a facility northwest of Grant.

### 2023 Waste Disposal & Pollution Objectives

- Promote recycling efforts in the District through education programs, newsletters and news releases.

- Provide information and education on water conservation and safe disposal of farm and household chemicals.
- Participate in education efforts to promote the reduction of pollution to air, water and soil resources.
- Cooperate and be supportive of other groups' and agencies' pollution control efforts, education and/or regulation.

### 2023-2027 Waste Disposal and Pollution Long Range Objectives

- Assist and encourage communities in establishing collection locations for recyclable wastes.
- Assist District cities and counties in establishing pickup days for hazardous household and farmstead wastes.

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## Information & Education

The URNRD keeps the public aware of the District's various projects and programs and informs and educates children and adults about the wise use and management of our natural resources. The District also engages legislators on resources issues important to the District and makes residents aware of such issues.

### 2022 Information and Education Activities

The URNRD conducted activities to help residents learn the importance of our soil and water resources and keep abreast of natural resource issues and concerns.

- Communicated to residents and state legislators concerns about proposed state legislation that would have jeopardized local management of District resources and negatively impacted the economy of the District.
- District staff and residents testified on proposed legislation that would have negatively impacted the District and augmentation projects.
- Communicated with Nebraska's Congressional delegation about water issues including the Compact.
- Publicized actions and decisions that positively affect Compact compliance.
- Presented information to groups about District and Compact compliance activities.
- Prepared and recorded radio spots on natural resources issues that aired on KRVN.
- Wrote and electronically published a newsletter about the District news, giving an update on the work being done at the URNRD.
- Hosted a Range judging contest for the Region 3.
- Planned and executed activities at Science Camps Offer Rewarding Experiences (SCORE) Camp for elementary students.

## 2023 Information & Education Objectives

- Publish the District newsletter and distribute via email to subscribers.
- Send timely news releases to the local media on various URNRD programs, projects and activities.
- Reinstitute the annual award program.
- Continue to hold special meetings and public information hearings.
- Provide the local media with budget requests.
- Continue to have staff time to make conservation education programs for schools, individuals and organizations when a reasonable request is made.
- Continue to provide a display at county fairs within the District.
- Update the District's website regularly.
- Increase engagement with the Nebraska Water Resources Association and National Water Resources Association.
- Encourage and facilitate District residents' involvement with water-related issues.

## 2023-2027 Information & Education Long Range Objectives

- Support environmental education activities and events.
- Participate with the Information and Education Staff Group to coordinate statewide I&E activities and produce statewide products.
- Help to develop the Natural Resources Camp held at the Nebraska 4H Camp in Halsey, NE. This camp is for 5th-8th graders to help encourage participation in the Nebraska Envirothon, Range Judging, Land Judging and other wildlife contests when the campers become old enough to participate in the contests.
- Educate adults about the importance and effectiveness of local control of natural resources.
- Increase engagement with the Nebraska Water Resources Association and National Water Resources Association.
- Encourage and facilitate District residents' involvement with water-related issues.
- Send timely news releases to the local media on various URNRD programs, projects and activities.
- Inform people within and outside the District of Compact compliance activities.
- Aid efforts by the Nebraska Association of Resources Districts to inform State and out-of-state residents of the benefits of the NRD system of resource management.

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# Assessment of Needs

## Personnel

Groundwater quantity and quality management and the integrated management of water resources will continue to be the primary function of the District.

The staff of the Upper Republican NRD includes eight full-time employees at the District office in Imperial. The NRD also has field office clerks in the Imperial, and Grant NRCS offices.

Current staff consists of:
Jasper Fanning, General Manager
Deb Hayes, Administrative Assistant
Nate Jenkins, Assistant Manager
Julia Strand, Water Program Specialist
Danielle Haarberg, Information and Education Specialist
Mike Nesbitt, Conservation Programs Coordinator (Perkins County)
Craig Eddie, Conservation Technician (Dundy County)
Cooper Bollman, Conservation Technician (Chase County)
Todd Burrell, Rock Creek Technician
Dwain Curtis, Part-time Conservation Technician
Wilma Zimbelman, Field Office Clerk, Chase Co.
Patsy Kroeker, Field Office Clerk, Perkins Co.

## 2023-2027 Personnel Objectives

- Continue to take advantage of staff development and education opportunities.
- Continue to have staff members attend meetings and conferences for Water Well Monitoring Technician certificates, Natural Resource Groundwater Technician and the continuing education hours.
- Search for new and effective ways to inform and educate the public on the NRD purpose and programs.
- Increase participation in activities sponsored by other agencies related to NRD responsibilities.

## Financial, Personnel, and Land Rights Needs 2022-2026

Total annual tax revenues including property and occupation taxes currently total approximately $6.2 million. There is expected to be minimal variability in revenues during the five-year period primarily due to budget demands from current and expected projects meeting or exceeding the district's revenue potential. Expenditure demands are primarily related to State of Nebraska compliance with the Republican River Compact and district efforts to extend aquifer life. The property tax levy in recent years, and the occupation tax rate, have both been at or near their statutory limits. Projects were initiated using a three-cent property tax levy authorized for NRDs in fully or over appropriated river basins and must still be funded despite loss of the three cents after it expired and wasn't renewed by the Legislature.

The tables below project land rights, personnel and financial needs over the next five years.

Table 1. Land Rights Needs

| **Purpose** | **FY2023** | **FY2024** | **FY2025** | **FY2026** | **FY2027** |
|---|---|---|---|---|---|
| Rock Creek Augmentation Bonds | $1,009,431 | $1,009,431 | $1,009,431 | $1,009,431 | $1,009,431 |
| NCORPE Bonds | $1,949,335 | $1,949,335 | $1,949,335 | $1,949,335 | $1,949,335 |
| In-Lieu of Tax Payments | $161,000 | $166,500 | $171,500 | $176,600 | $181,898 |
| Irrigation Retirements | $500,000 | $500,000 | $500,000 | $500,000 | $500,000 |

Table 2. Personnel Needs (work months)

| **Program** | **FY2023** | **FY2024** | **FY2025** | **FY2026** | **FY2027** |
|---|---|---|---|---|---|
| Water Quantity/ Preservation | 60 | 62 | 63 | 64 | 66 |
| Water Quality | 18 | 19 | 19 | 20 | 20 |
| Compact Obligations | 26 | 26 | 26 | 26 | 26 |
| Erosion Control/Conservation Programs | 2.5 | 3 | 3 | 3 | 3 |

Table 3. Financial Needs (project-related expenses)

| **Obligations** | **FY2023** | **FY2024** | **FY2025** | **FY2026** | **FY2027** |
|---|---|---|---|---|---|
| Augmentation Bonds, Pumping, Operations | $4,210,000 | $4,230,00 | $4,320,000 | $4,331,000 | $4,343,000 |
| Water Quantity Projects | $2,000,000 | $2,300,000 | $2,500,000 | $3,000,000 | $3,000,000 |
| Personnel | $1,474,200 | $1,525,900 | $1,630,900 | $1,741,300 | $1,802,245 |
| Water Quality Projects | $10,000 | $12,000 | $15,000 | $18,000 | $21,000 |