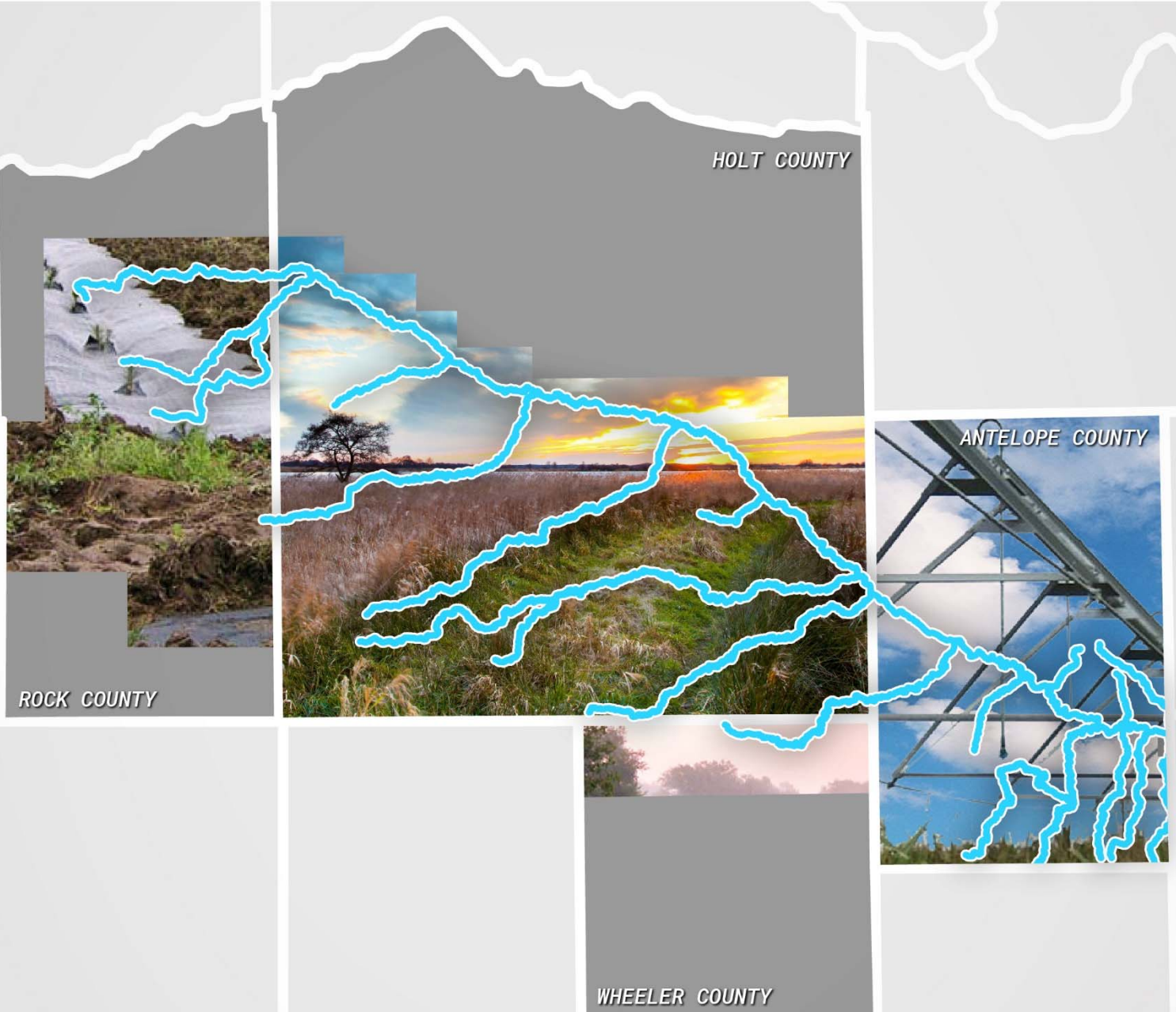


JOINTLY DEVELOPED BY



Voluntary Integrated Management Plan

UPPER ELKHORN NATURAL RESOURCES DISTRICT

Effective Date: February 1, 2019

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1 Authority and Effective Date

This Voluntary Integrated Management Plan (VIMP) was prepared voluntarily by the Board of Directors of the Upper Elkhorn Natural Resources District (District) and the Nebraska Department of Natural Resources (Department) in consultation with the District Stakeholder Advisory Committee (SAC) and in accordance with the Nebraska Groundwater Management and Protection Act. The act assigns the responsibilities and the authority to the Department and the District for management of groundwater and hydrologically connected waters in accordance with Nebraska Revised Statutes (*Neb. Rev. Stat.*) §46-715(1)(b), §46-715 to 46-717, and subsections (1) and (2) of §46-718.

The letters initiating the VIMP process are included in **Appendix A**. This VIMP was adopted by the District on December 17, 2018, and by the Department on December 17, 2018. The effective date of this VIMP is February 1, 2019.

2 Purpose

The District, in collaboration with the Department, implemented this VIMP to attain and maintain a desired balance between uses and supplies of both surface water and groundwater sources so economic viability, as well as social and environmental health, safety, and welfare, can be achieved and maintained in the District for both the near-term and long-term, while considering effects on existing surface water appropriators and groundwater users. Should the Department subsequently determine an affected river basin, subbasin, or reach within the District to be fully appropriated, the Department and District may amend this VIMP.

3 Background

3.1 Natural Resource Districts, Nebraska Department of Natural Resources, and Water Management in Nebraska

In 1969, the Nebraska Legislature passed LB 1357 that combined 154 special purpose entities into what are now 23 natural resources districts (NRDs) in 1972. Unique to Nebraska, NRDs are local government entities, governed by an elected board of directors, with broad responsibilities to protect Nebraska's natural resources. NRD boundaries generally follow major river basins, enabling local districts to respond best to local needs.

NRDs are charged with 12 areas of responsibility, including:

1. Development, management, use, and conservation of groundwater and surface water
2. Soil conservation
3. Erosion prevention and control
4. Flood prevention and control
5. Pollution control
6. Water supply for any beneficial uses
7. Prevention of damages from flood water and sediment
8. Development and management of recreational and park facilities

9. Forestry and range management
10. Development and management of fish and wildlife habitat
11. Drainage improvement
12. Solid waste management

In particular, NRDs are responsible for the planning, monitoring, and regulation of groundwater in their districts, while the Department, a state entity, manages and regulates surface waters within the state.

The Department has been in existence since July 1, 2000, when two existing state agencies were merged: the Department of Water Resources and the Nebraska Natural Resources Commission. Since 2000, the Department has had broad responsibilities in the areas of Nebraska's surface water regulation, groundwater well registrations, floodplain management, dam safety, natural resources planning and development, and dissemination of data and information pertaining to these topics. In addition, the Department participates in numerous federal, interstate, state, and local studies and represents Nebraska in connection with interstate compacts and decrees. The Department also administers several state funds used to help conserve, protect, and develop Nebraska's natural resources (Department Newsletter, Issue 1, winter 2000). After the passing of Legislative Bill (LB) 962 in 2004, the Integrated Water Management (IWM) division of the Department was formed. The IWM division has been steadily growing through the years and currently has 18 full-time positions. The employees in these positions have expertise in water planning, groundwater modeling, and hydrology.

The beneficial use of groundwater and surface water in the state of Nebraska is governed by two discrete laws: (1) the common law concept of correlative rights for groundwater, and (2) the prior appropriation doctrine for surface water. The correlative rights rule allows owners to drill wells and extract groundwater from an underlying aquifer for reasonable and beneficial purposes, subject to management by the public. To execute this right, landowners must first obtain a permit to drill a well from their local NRD. Within the District, if approved, the well permit allows the landowner to drill and extract as much groundwater as needed, subject to NRD limitations in place, as long as the use is deemed beneficial. When construction is completed, the well permit is registered with the Department, which places the information in a statewide database. The correlative groundwater rights rule is essentially a "share and share alike" system. Under the prior appropriation doctrine, surface waters of the state are allowed to be diverted based on the date that the application was filed with the Department. Surface water rights entitle landowners or organizations to remove a set amount of water from a specific location, along with other specific terms and conditions. During periods when the overall water supply is insufficient to meet all appropriated water rights, this system protects those who received their water rights first. Thus, the water right for the same use, with the earliest date (or senior priority) is entitled to their full appropriation before a later (or junior) priority date water right receives any water.

3.2 Integrated Management Plans

LB 962 allows the Department and the NRDs to work together to manage groundwater and surface water as a hydrologically connected resource under integrated management plans. With the increasing demand on water resources, it is necessary to recognize the importance of hydrologically connected groundwater and surface water and the difficulties entailed in the management thereof, because of their

properties, distribution, and the interconnection between surface water and the underlying groundwater aquifers.

Under LB 962, an integrated management plan must be developed if the Department determines that a river basin, subbasin, or reach is fully appropriated.

A river basin, subbasin, or reach shall be deemed fully appropriated if the [D]epartment determines [...] that [current] uses of hydrologically connected surface water and ground water in the river basin, subbasin, or reach cause or will in the reasonably foreseeable future cause (a) the surface water supply to be insufficient to sustain over the long term the beneficial or useful purposes for which existing natural-flow or storage appropriations were granted and the beneficial or useful purposes for which, at the time of approval, any existing instream appropriation was granted, (b) the streamflow to be insufficient to sustain over the long term the beneficial uses from wells constructed in aquifers dependent on recharge from the river or stream involved, or (c) reduction in the flow of a river or stream sufficient to cause noncompliance by Nebraska with an interstate compact or decree, other formal state contract or agreement, or applicable state or federal laws. (*Neb. Rev. Stat. §46-713(3)*)

3.3 Voluntary Integrated Management Plans

LB 764, enacted in 2010 and codified at *Neb. Rev. Stat. § 46-715(1)[b]*, authorized NRDs to voluntarily develop an integrated management plan with the Department to jointly manage groundwater and surface water uses and supplies in areas that have not been designated as fully appropriated. The process is initiated when the District notifies the Department of its intention to develop a VIMP. The objective of a VIMP is to manage the river basins, subbasins, or reaches within the District to attain and/or sustain a desired balance between water uses and water supplies for the long term, while protecting existing users.

The NRDs' authorities focus on groundwater management; the Department administers surface water rights and may issue Groundwater Municipal and Industrial transfer permits. With the increasing demand on water resources, it is necessary to realize the importance and use of hydrologically connected groundwater and surface water. Groundwater and surface water have an intricate relationship, which can be difficult to manage.

Although there is no official determination by the Department that any area of the District is fully appropriated, the District is continuing to be proactive in water management and is voluntarily developing this plan jointly with the Department, in part to reduce the potential that the District be designated as fully appropriated in the future. This VIMP is intended to meet many of the requirements of an integrated management plan required if the District, or part of the District, is determined to be fully appropriated by the Department. If a District develops a VIMP and the Department subsequently determines the affected river basin, subbasin, or reach to be fully appropriated, the Department and the affected NRD may amend the VIMP.

3.4 Lower Platte River Basin Water Management Plan

In April 2013, the Department and the seven NRDs that make up the Lower Platte River Basin (Basin) formed the Lower Platte River Basin Coalition (Coalition). The Coalition members include the following:

- Upper Loup NRD
- Lower Loup NRD
- Upper Elkhorn NRD
- Lower Elkhorn NRD
- Lower Platte North NRD
- Lower Platte South NRD
- Papio-Missouri River NRD
- Nebraska Department of Natural Resources

The Coalition's mission is to coordinate efforts to protect the long-term balance of the Basin's water uses and water supplies. The first action of the Coalition was to develop a voluntary Lower Platte Basin Water Management Plan (Basin Plan).

For Basin Plan development, the Coalition formed a technical committee, a management committee, and a board; the Coalition hired a team of consultants to conduct analyses and coordinate meetings. Over the course of 4 years, the Coalition held 11 technical committee meetings, 11 management committee meetings, 3 board meetings, and 3 workshops. Several large-scale technical analyses were conducted and the results were used to inform the discussion throughout the development process. Through these activities, a framework for coordinated management of water uses and supplies was established; the policies and practices therein will be implemented through individual integrated management plans.

The agreed upon Basin Plan was adopted by all parties as of January 10, 2018. The Basin Plan operates on a 5-year increment schedule, with the first increment beginning July 1, 2016, and ending December 31, 2021. The Basin Plan may be accessed on the District's website or the Department's website.

The Basin Plan specifies allowable depletions to the flows of the Platte River as measured at Louisville, Nebraska. This is described in detail in Section 9, Controls.

4 Description of Upper Elkhorn Natural Resources District

The District contains portions of Rock, Holt, Wheeler, and Antelope Counties in northeastern Nebraska. The District encompasses 3,052 square miles and has a population of 17,935. The largest city within the District is O'Neill (3,700).

The topography of the District consists of a mixture of sandhills and plains. The sandhills are sand dunes stabilized in place by a grass cover; the upland plains are land that is flat to gently rolling. The lower part of the District consists of plains and dissected plains, where streams have cut into former

plains creating hilly land with steep slopes and sharp ridge crests, along with remnants of the plains on the hilltops. There are valleys consisting of flat-lying areas along the Elkhorn River and its major tributaries.

In small portions of the Elkhorn River Valley, next to major streams, the available aquifers are found in recent unconsolidated alluvial deposits. The District is underlain by aquifers in the Ogallala Formation, which consists of poorly sorted, generally unconsolidated clay, silt, sand, and gravel. The Ogallala Formation is part of a vast system of related sediments that make up the High Plains Aquifer in portions of six states in the central United States. In the Elkhorn River Basin, the High Plains Aquifer is underlain by Cretaceous rocks. Large saturated thicknesses, high porosity and yield, and high hydraulic conductivity are common in the Basin.

At the western extent of the District are the headwaters of the Elkhorn River in Rock County. The Elkhorn River then flows easterly through the heart of the District and, together with its tributaries, is the predominant surface water feature in the District. The majority of the District lies within the Elkhorn River Basin, with the exceptions of: 1) a small portion of northwestern Antelope County and northern portion of the District in Holt and Rock Counties that lies within the Lower Niobrara River Basin, 2) a small portion of western Rock County that lies within the Middle Niobrara River Basin, and 3) a small portion of northeastern Antelope County that lies within the Upper Missouri Tributaries Basin (Bazile Creek watershed). The river Basins are illustrated in Figure 2. There are no major reservoirs within the District boundaries.

The western two-thirds of the District is primarily used as pasture and rangeland; water table lakes and wetlands are common. In the remainder of the District and along the Elkhorn River Valley, land is cultivated, with corn as the primary crop grown, followed by soybeans, with small amounts of alfalfa and open pasture and rangelands. The majority of irrigated agriculture utilizes solely groundwater sources, with less than 5 percent of the irrigated lands within the District having surface water or comingled sources.

5 Integrated Management Planning Process

The integrated management planning process uses an adaptive management approach. Thus, it is a work in progress for either attaining or maintaining the desired balance of the hydrologic system. As an affected area or subarea of the District changes and more data becomes available, the VIMP goals and objectives will be reassessed and changes may be made, as necessary, to accommodate changing circumstances such as hydrology, economics, water demands, and supplies. The VIMP will evolve in incremental phases as elements of the plan are achieved and additional elements to the VIMP are sought by the District, its Stakeholder Advisory Committee, or the Department. The VIMP will be reviewed annually and the District and the Department will determine if the VIMP needs to be modified to achieve its goals and objectives. This VIMP focuses on hydrologically connected surface water and groundwater, but incorporates many aspects that mutually benefit other actions of the District, as set forth in the District's Groundwater Management Plan, the Bazile Groundwater Management Area Plan, and findings from other District projects and studies. The integrated management planning process allows for: (1) understanding water supplies and uses within the District; (2) preventing or mitigating

water related conflicts within the District; (3) planning for sustainable growth in water uses and demands; and (4) informing the public of the District's water resources and efforts to effectively manage those resources.

Data, analyses, models, and the best available science are the tools that provide the information that is critical for implementing water management activities and meeting VIMP goals. Among other things, these tools will be used to assess water supplies, water uses, water availability, water shortages for existing water users, and to identify future water needs at the basin level and subbasin level within the District. The District and the Department will seek to ensure that agreed upon methodologies for data collection and analyses, and processes for greater transparency in all decision-making activities, are used.

Pursuant to *Neb. Rev. Stat. § 46-715(2)*,

[a]n integrated management plan shall include the following: (a) [c]lear goals and objectives with a purpose of sustaining a balance between water uses and water supplies so that the economic viability, social and environmental health, safety, and welfare of the river basin, subbasin, or reach can be achieved and maintained for both the near term and the long term; (b) a map clearly delineating the geographic area subject to the integrated management plan; (c) one or more of the ground water controls authorized for adoption by [NRDs] pursuant to section 46-739; (d) one or more of the surface water controls authorized for adoption by the [D]epartment pursuant to section 46-716; and (e) a plan to gather and evaluate data, information, and methodologies that could be used to implement sections 46-715 to 46-717, increase understanding of the surface water and hydrologically connected ground water system, and test the validity of the conclusions and information upon which the integrated management plan is based. The plan may also provide for utilization of any applicable incentive program authorized by law. (*Neb. Rev. Stat. § 46-715(2)*)

Pursuant to *Neb. Rev. Stat. § 46-715(3)*, an integrated management plan shall

provide a process for economic development opportunities and economic sustainability within a river basin, subbasin, or reach, [and] shall include clear and transparent procedures to track depletions and gains to streamflows resulting from new, retired, or other changes to uses within the river basin, subbasin, or reach. The procedures shall:

- (a) Utilize generally accepted methodologies based on the best available information, data, and science;
- (b) Include a generally accepted methodology to be utilized to estimate depletions and gains to streamflows, which methodology includes location, amount, and time regarding gains to streamflows as offsets to new uses;
- (c) Identify a means to be utilized so that new uses not have more than a de minimis effect upon existing surface water users or ground water users;

- (d) Identify procedures the [District] and the [D]epartment will use to report, consult, and otherwise share information on new uses, changes in uses, or other activities affecting water use in the river basin, subbasin, or reach;
- (e) Identify, to the extent feasible, potential water available to mitigate new uses, including, but not limited to, water rights leases, interference agreements, augmentation projects, conjunctive use management, and use retirement;
- (f) Develop, to the extent feasible, an outline of plans after consultation with and an opportunity to provide input from irrigation districts, public power and irrigation districts, reclamation districts, municipalities, other political subdivisions, and other water users to make water available for offset to enhance and encourage economic development opportunities and economic sustainability in the river basin, subbasin, or reach; and
- (g) Clearly identify procedures that applicants for new uses shall take to apply for approval of a new water use and corresponding offset. *Neb. Rev. Stat. § 46-715(3)*

To accomplish the objectives set forth in *Neb. Rev. Stat. § 46-715(3)*, this VIMP provides a process that allows for utilization of the best available data and science to understand current supplies and uses, to estimate effects of new uses, and to explore the potential for new water uses. There are currently clear processes in place through the District's Rules and Regulations and the Department's Statutes and Rules and Regulations through which new applicants for uses may apply and seek approval.

Pursuant to *Neb. Rev. Stat. § 46-715(4)*,

[t]he ground water and surface water controls proposed for adoption in the integrated management plan [...] shall, [...] (a) be consistent with the goals and objectives of the plan, (b) be sufficient to ensure the state will remain in compliance with applicable state and federal laws, any applicable interstate water compact or decree, or other formal state contract or agreement pertaining to surface water or ground water use or supplies, and (c) protect the ground water users whose water wells are dependent on recharge from the river or stream involved and the surface water appropriators on such river or stream from streamflow depletion caused by surface water uses and ground water uses begun, in the case of a river basin, subbasin, or reach designated as over appropriated or preliminarily determined to be fully appropriated in accordance with section 46-713, after the date of such designation or preliminary determination. (*Neb. Rev. Stat. § 46-715(4)*)

After the final hearing under *Neb. Rev. Stat. § 46-718(1)-(2)*, the Department and the District agreed to adopt and implement the controls in the groundwater and surface water action items herein to the entire geographical area within the boundaries of the District. Figures 1 and 2 clearly delineate the VIMP Management Control Areas.

6 Stakeholder and Public Involvement

Neb. Rev. Stat. § 46-717(2) outlines the stakeholder process that is an integral part of integrated management plan development. It states the specific stakeholder interests that the District and the Department will consult during the preparation of the VIMP: irrigation districts, public power and irrigation districts, mutual irrigation and canal companies, municipalities, and other water users as deemed appropriate. The VIMP process relies on collaboration between the NRDs and the Department, in consultation with a diverse stakeholder group. As part of the VIMP development, the District and the Department reached out to a group of stakeholders that represented a wide array of water interests, including:

- Irrigators (irrigation districts, reclamation districts, public power and irrigation districts, mutual irrigation districts, and canal companies)
- Municipalities
- Large manufacturers
- Agencies
- Agricultural groups
- Large water users (for example, livestock)
- Rural water districts
- Well drillers
- Recreation groups
- Economic development organizations
- Ranchers

From the initial list of identified stakeholders, the District and the Department convened a group that represented the following water interests:

- Irrigators (groundwater and surface water users)
- Municipalities
- Agricultural groups
- Large water users
- Well drillers
- Recreational groups
- Economic development
- Ranchers

A complete list of representatives from the Stakeholder Advisory Committee (SAC) can be found in **Appendix C**. The stakeholders' input was invaluable in the development of the VIMP, and their time, insights, and efforts were greatly appreciated by both the District and the Department.

The SAC met three times throughout 2018, and worked together to identify and inform the District and Department of issues in the Basin and to develop goals, objectives, and action items of the VIMP. The District and the Department carefully evaluated and considered all recommendations and input

received by the SAC. The final goals, objectives, and action items are intended to serve as a path forward for effective, long-term management of groundwater and surface water throughout the District.

The District and Department jointly held a public meeting on August 29, 2018, in conjunction with the final SAC meeting. A public hearing was held November 28, 2018. At the hearing, the District and the Department received testimony on the draft VIMP and, following, considered the testimony in its decision to jointly adopt the VIMP.

Stakeholder and public engagement milestones are articulated in the following graphic.



7 Goals, Objectives, and Action Items

The **ultimate goal of the integrated management process is to protect existing investments and interests while facilitating economic growth and well-being across the District.** For the first phase/increment of the integrated management planning process for the District’s VIMP, the goals and objectives focused on understanding the water supplies and uses within the District, resolving potential conflicts between users, planning for future uses, and effectively communicating water resource information and management actions to the general public. These fundamental elements of integrated management planning allowed for tailoring Department and District actions in the following phases of the VIMP process, and provided the framework for water management decisions going forward.

A **goal** is a desired outcome of actions taken in support of achieving the overall purpose of the VIMP. An **objective** is an achievable and measurable action taken to attain the desired result stated in the goal it supports. Goals provide a broad picture of intentions, whereas objectives define specific ways to achieve these goals. The objectives are then supported by detailed action items that will get the necessary work accomplished.

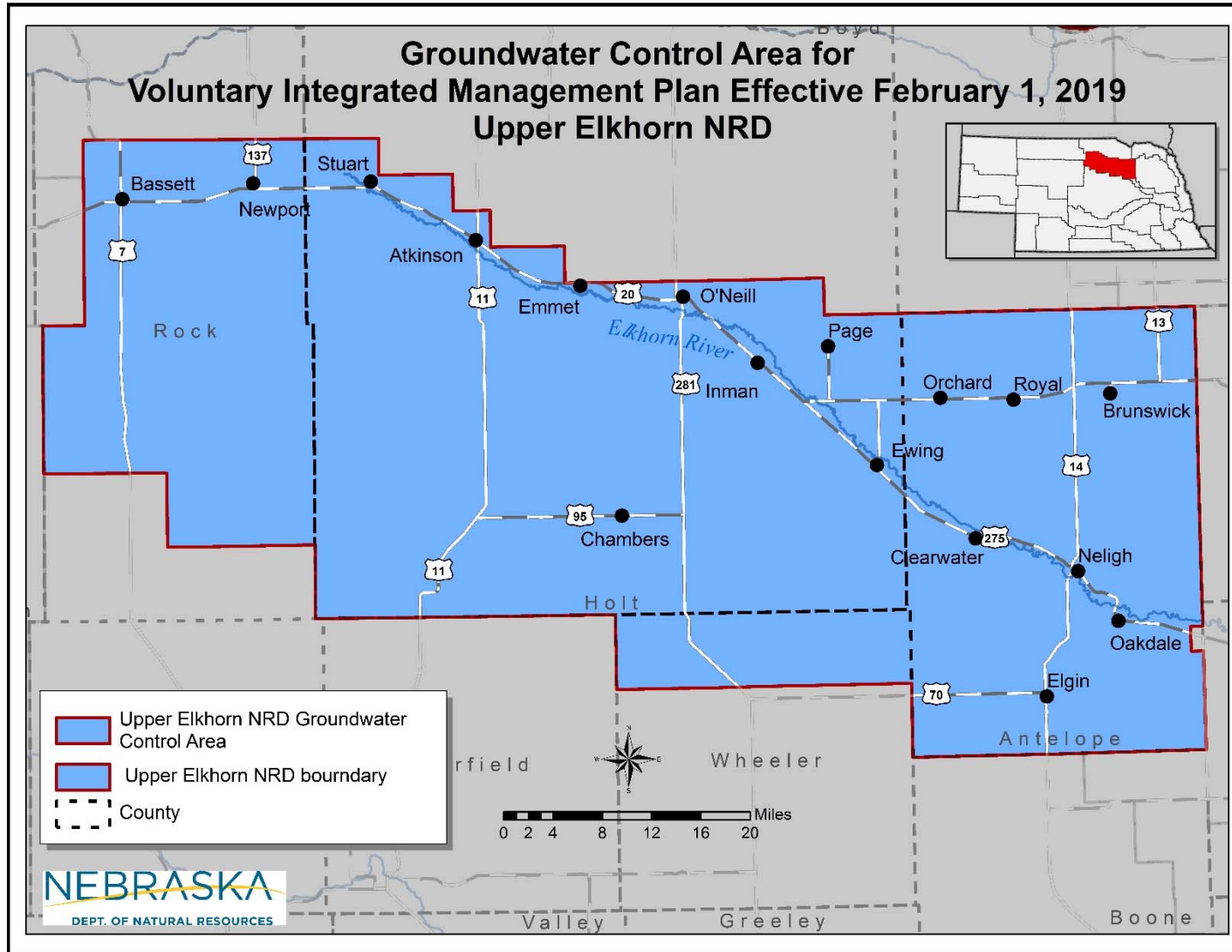
Goals and Objectives		
<p>Goal 1.0 Understand water supplies and uses within the District</p> <p>This goal is focused on data collection and analysis of supplies and uses fundamental to effectively managing the District’s water resources. The first objective is focused on collecting and maintaining database of water uses and supplies within the District. The second objective is focused on understanding the variability in water supplies and uses in the future.</p>		
<p>Objective 1.1 Develop and maintain a database of water supplies and uses within the District.</p> <p>Data on water supplies and uses will be collected, stored and analyzed using the best available information, data, tools, and science.</p>		
Action Items	1.1.1 Develop and maintain database of water supplies.	District and Department
	1.1.2 Identify hydrologically distinct sub-areas within the District for the purposes of integrated management.	District and Department
	1.1.3 Continue to maintain database of water quality problem areas.	District
	1.1.4 Continue to monitor District-wide water use.	District and Department
	1.1.5 Develop and implement monitoring protocols for key water uses not currently monitored.	District and Department
	1.1.6 Identify data gaps and prioritize additional data collection efforts.	District and Department
	<p>The Department and District will continue current monitoring efforts of water uses within the District. Types of data include diversions, irrigated acres, metering of wells, and estimates of uses not currently monitored.</p>	
<p>Objective 1.2 Evaluate variability in water supply and uses.</p> <p>Based on the water supply and inventory of historic and current conditions maintained in Objective 1.1, evaluate effects of variations in water supply and uses within the District – essentially assess the resiliency of the District’s water supplies under stress.</p>		
Action Items	1.2.1 Monitor changes and trends in water supplies and uses within the District.	District and Department

Goals and Objectives		
	1.2.2 Evaluate changes to water supplies and uses due to changes in population, industry, and land use.	District and Department
	1.2.3 Evaluate variations in water supplies and uses due to climate cycles.	District and Department
	1.2.4 Evaluate changes in technology and their impacts on water uses and supplies.	District and Department
Goal 2.0 Prevent or mitigate water related conflicts within the District There is a hydrologic connection of surface water and groundwater resources and the potential exists for uses to affect one another. These conflicts may arise not only between surface water and groundwater users, but also between types of use: domestic, municipal, industrial, agricultural, environmental, etc. The Department and District will work cooperatively with water users to identify potential conflicts, evaluate those conflicts, and implement/enhance management approaches and solutions to address conflicts.		
Objective 2.1 Assess the potential impact of new and existing surface water and groundwater uses on existing surface water and groundwater users within the District.		
Action Items	2.1.1 Develop and implement protocols using best available tools and information to assess potential effects of new uses on existing users.	District and Department
Objective 2.2 Maintain rules and regulations, and establish new rules and regulations as necessary, to enhance equitable water use management.		
Action Items	2.2.1 Maintain/enhance the District's and Department's processes for applying for new use.	District and Department
	2.2.2 Maintain/enhance the District's and Department's processes for evaluating, prioritizing, and granting new uses.	District and Department
	2.2.3 Periodically review rules and regulations and update to reflect changes in conditions that occur during plan implementation.	District and Department
Goal 3.0 Plan for sustainable growth in water uses and demands.		
Objective 3.1 Plan for future demands on the District's water supplies.		
Action Items	3.1.1 Determine allowable levels of sustainable use within the District.	District and Department
	3.1.2 Establish procedures for securing water for sustained future growth of domestic, agricultural, municipal, commercial, and industrial water users within the District.	District and Department
	3.1.3 Collaborate with municipal, commercial, and industrial users on development or refinement of conservation plans.	District and Department
Objective 3.2 Evaluate ways to improve the reliability and availability of water supplies.		
Action Items	3.2.1 Evaluate water banking and water leasing opportunities within the District.	District and Department
	3.2.2 Evaluate potential conjunctive management opportunities.	District and Department
	3.2.3 Evaluate potential water storage (surface and aquifer) opportunities.	District and Department
	3.2.4 Coordinate with other stakeholders, NRDs, and agencies in evaluating potential projects, water lease/banking, and other regional opportunities.	District and Department
	3.2.5 Identify funding and cost sharing opportunities with other federal, state, and local partners.	District and Department

Goals and Objectives		
Goal 4.0 Inform the public of District’s water resources and efforts to effectively manage those resources.		
Objective 4.1 Maintain educational materials for public outreach.		
Action Items	4.1.1 Develop/update materials describing District’s water resources – include quantity and quality.	District and Department
	4.1.2 Develop/update material on water resources planning and management activities (quantity and quality) within the District, including current and future water management alliances such as the Niobrara River Basin Alliance, Lower Platte Basin Coalition and this VIMP.	District and Department
	4.1.3 Coordinate with other stakeholders, NRDs, or agencies in sharing and developing public outreach materials.	District and Department
Objective 4.2 Maintain and enhance public outreach activities and programs.		
Action Items	4.2.1 Maintain District communication with producers on current status of water resources (quantity and quality), management activities, conservations measures, etc.	District and Department
	4.2.2 Identify and participate in public outreach opportunities including county fairs, websites, newsletters, etc.	District and Department
	4.2.3 Coordinate with other stakeholders, NRDs, and other agencies in communication and outreach efforts.	District and Department
	4.2.4 Prepare and make available, to the public, an annual report of water resources and water management activities, including activities from previous year, supporting data, education statements and updates for on-going work.	District and Department

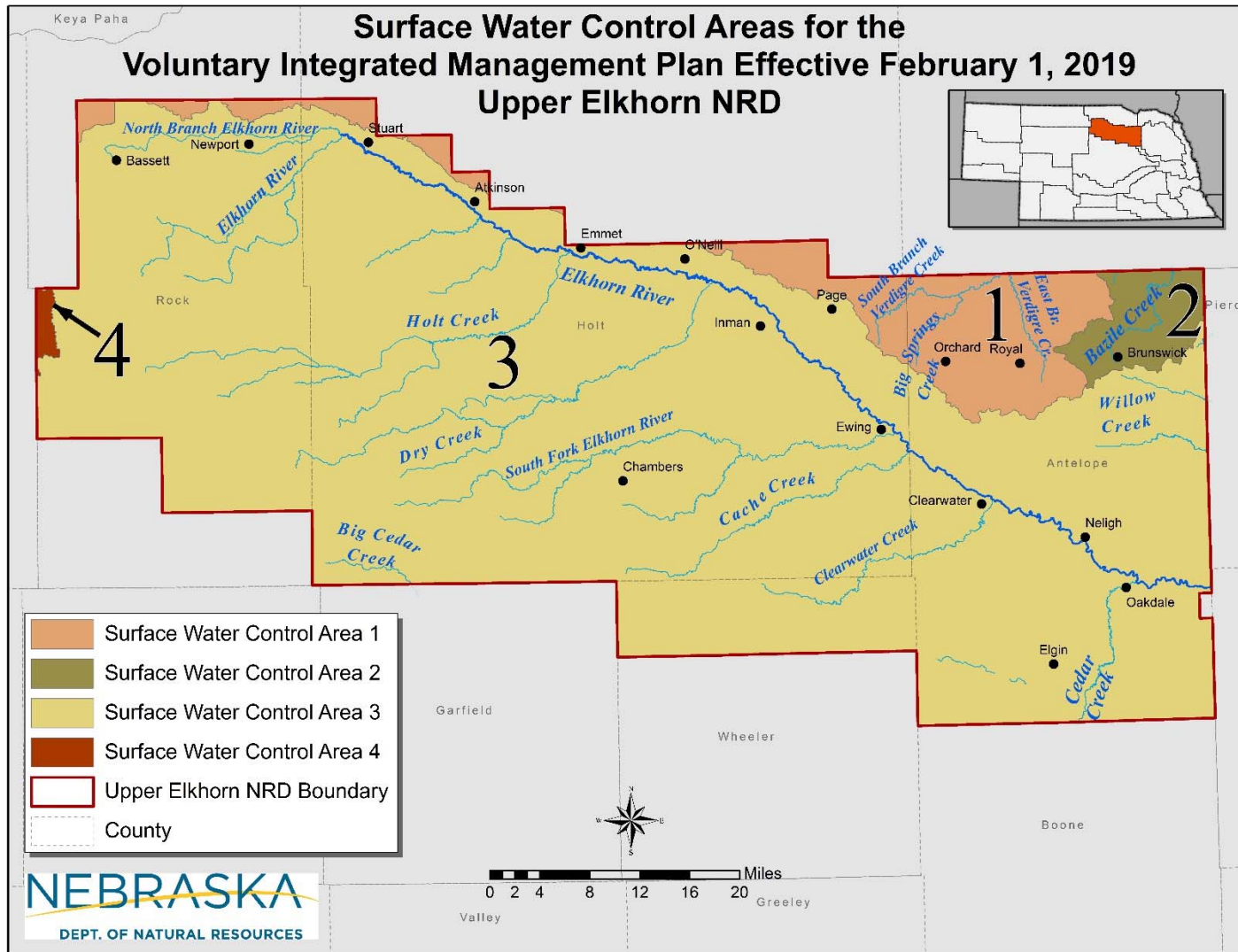
8 Geographic Extent of Control Areas

In accordance with *Neb. Rev. Stat. § 46-715(2)*, the geographic area of the District’s VIMP includes all water users within the boundary of the District (see Figures 1 and 2). The District has designated a groundwater control area that covers the District; the area where groundwater controls described in Section 9 and implemented by the District as part of this VIMP apply (see Figure 1). Surface water controls apply throughout the District, with specific controls applying in distinct areas as outlined in Figure 2. The different surface water control areas are created for consistency with the adjacent NRDs to which these areas drain, with the exception of the Lower Platte Basin Control Area, which is created for consistency with the Lower Platte River Basin Water Management Plan. The District and Department recognize that, as new information and increased understanding becomes available through new data, models, and analyses, the defined control areas may change. Any changes to the VIMP control areas require agreement between the District and Department, in addition to a statutorily defined public notice period and public hearing.



Map by NeDNR bae 10/22/2018

Figure 1. Groundwater Control Area



Map by NeDNR bae 10/22/2018

Figure 2. Surface Water Control Areas

9 Controls

This section describes the controls that the District and the Department have chosen to adopt as a part of this VIMP. These controls were selected from the allowed controls listed in *Neb. Rev. Stat.*

§§ 46-739 and 46-716 for groundwater and surface water controls, respectively. In accordance with *Neb. Rev. Stat.* § 46-715(4), the controls are consistent with the goals and objectives of the VIMP and will protect groundwater and surface water users.

9.1 9.1 Groundwater Controls

1. **Certification of groundwater irrigated acres.** The District will certify all irrigated acres within the District boundaries within 2 years (time will begin when the VIMP is approved and goes into effect). The District is in the process of certifying all groundwater irrigated acres using a GIS-based data system in conjunction with County Assessors, US Farm Service Agency documents, and aerial photographs of historically irrigated acres.
2. **Establish a limit on the expansion of groundwater-irrigated acres.** Groundwater regulatory action items (or controls) implemented by the District are set forth in *Neb. Rev. Stat.* § 46-739 and apply to the groundwater control area as shown in Figure 1. The groundwater regulatory action item will work in combination with the District's Groundwater Management Plan and District's Rules and Regulations. The District's Rules and Regulations contain procedural details for the expansion of groundwater irrigated acres, which includes a ranking criteria sheet. As outlined in the Basin Plan, the NRD will limit development of new groundwater uses to 50 percent of the annual available stream depletion for the area included in its boundaries over the Basin Plan's first 5-year increment, which concludes on December 31, 2021. Depletions not used will be redistributed annually and shared equally between the District and the Department¹. Persons desiring to apply for new groundwater irrigated acres is for agricultural production land irrigated from a new groundwater source, typically an irrigation well, and does not include other types of irrigation use (for example, lawn watering at golf courses and ball fields), municipal use, or industrial use.

9.2 Surface Water Controls

The Department established controls for each of the four drainage basins within the District (Figure 2).

1. **Surface Water Control Area 1 (Lower Niobrara Basin)**
 - a. **Moratorium or restriction on addition of surface water irrigated acres:** Should the District issue a moratorium on any increase in groundwater-irrigated acres, the Department will issue a similar moratorium to limit development of additional acres for surface water irrigation. Should the District allow development of groundwater-irrigated acres in this area, the Department will restrict development of additional acres for surface water irrigation to one-third of the amount the District will allow for additional groundwater-irrigated acres for any surface water applications filed after the effective date of this VIMP. The Department will use the District's number of additional

¹ **Appendix D** contains an example calculation of the annual redistribution of depletions shared equally between the District and the Department.

- groundwater acres as of January 1 of each year for determining the number of additional acres for surface water irrigation in each calendar year. The District will notify the Department in writing no later than December 31 of any groundwater irrigated acres that have been allowed to be developed within Surface Water Control Area 1 for the previous calendar year. Should the District fail to notify the Department by the December 31 deadline of the groundwater acres allowed to be developed, the Department is not bound to limit surface water development in the following calendar year in this area.
- 2. Surface Water Control Area 2 (Upper Missouri Tributaries Basin)**
 - a. **Education requirements:** The Department will continue to explore implementation of educational materials for new industrial and agricultural surface water permits.
 - 3. Surface Water Control Area 3 (Lower Platte Basin)**
 - a. **Limitation on expansion of surface water irrigation:** The Department will limit new surface water uses to 50 percent of the annually available stream depletion over the Basin Plan's first 5-year increment, which concludes on December 31, 2021. Depletions not used will be redistributed annually and shared equally between the District and the Department².
 - 4. Surface Water Control Area 4 (Middle Niobrara Basin)**
 - a. **Temporary stay on development of surface water irrigation:** The Department will stay approval of new surface water irrigation acres. Exceptions to the stay include, but are not necessarily limited to:
 - i. Appropriations for new surface water uses to which a right or permit is transferred in accordance with State law, but the consumptive use of any such new use can be no greater than the historic consumptive use of the surface water use from which the right or permit is being transferred, and
 - ii. New surface water natural flow appropriations that are necessary to alleviate an emergency situation involving the provision of water for human consumption, public health, or safety
 - b. The stay shall run until the earlier of February 4, 2020, or such time that the surface water controls contained in the Middle Niobrara Integrated Management Plan have been implemented through an effective order of the Department.

10 Incentive Programs

The District and the Department will evaluate cost-share incentive programs that promote water conservation practices, and implement where feasible. Incentive programs may include any program authorized by state law or federal programs. Water users or landowners who voluntarily participate in such programs may be required to enter into and perform such agreements or covenants concerning the use of land or water as are necessary to produce the benefits for which the incentive program is established. Furthermore, the District and the Department will explore grant opportunities to supplement the annual budgeting process for funding action items for VIMP activities.

² **Appendix D** contains an example calculation of the annual redistribution of depletions shared equally between the District and the Department.

11 Funding Options

Additional funding sources may be needed to implement some of the action items listed in this VIMP. This section provides information on a variety of funding options that the District and the Department may use. The general criteria and applicability of each of the funding sources are presented. The funding sources presented here are not necessarily inclusive of all funding options available; information presented here is subject to change as funding sources may change their terms and criteria.

11.1 Federal Funding Options

U.S. Department of Agriculture, Farm Service Agency

Conservation Reserve Enhancement Program (CREP). The CREP is part of the Conservation Reserve Program (CRP). The Nebraska CREP is intended to reduce irrigation water use, improve water quality, and enhance wildlife habitat through the establishment of vegetative cover. The program helps replenish streams, rivers, and reservoirs.

U.S. Department of Agriculture, Natural Resource Conservation Service

- Agricultural Conservation Easement Program (ACEP). The ACEP provides financial and technical assistance to protect critical wetlands, agricultural lands, and grasslands through easements.
- Conservation Security Program (CSP). The CSP is available in select watersheds across the nation. This program is designed to reward farmers and ranchers who implement conservation on working lands and to encourage them to do more.
- Environmental Quality Incentives Program (EQIP). The EQIP offers technical assistance, cost sharing, and incentive payments available to agricultural producers to implement conservation practices that improve water quality, increase water conservation, and enhance grazing lands.
- Wildlife Habitat Incentives Program (WHIP). The WHIP provides technical and financial assistance to landowners and others to develop and improve wildlife habitat on private lands.

U.S. Department of the Interior, Bureau of Reclamation

WaterSMART Program. Grants are provided to irrigation districts, water districts, and other organizations that deliver water or power to cost share on projects that use water more efficiently. The projects should support water sustainability in the west.

11.2 State Funding Options

The Nebraska Environmental Trust.

The Nebraska Environmental Trust was established in 1992 to conserve, enhance, and restore the natural environments of Nebraska. The Trust especially seeks projects that involve public and private sector collaboration to implement high-quality, cost-effective projects.

Nebraska Department of Environmental Quality

Nonpoint Source Water Quality Grants (Section 319). Under Section 319 of the federal Clean Water Act, the federal government awards funds to the Nebraska Department of Environmental Quality to provide financial assistance for prevention and abatement of nonpoint source water pollution. This funding is granted to units of government, educational institutions, and nonprofit organizations for projects that facilitate implementation of the state Nonpoint Source Management Plan.

Nebraska Game and Parks Commission

Nebraska Wildlife Conservation Fund. This fund exists for conservation of nongame species, with particular focus on species determined to be threatened or endangered, ensuring their continued existence for scientific purposes and human enjoyment.

Nebraska Department of Natural Resources

- Water Well Decommissioning Fund. The objective of the Water Well Decommissioning Fund is to provide cost share assistance to encourage proper decommissioning of water wells in the state.
- Nebraska Soil and Water Conservation Fund. This fund provides state financial assistance to landowners for installation of approved soil and water conservation measures meant to improve water quality, conserve water, and control erosion and sedimentation.
- Small Watersheds Flood Control Fund. The purpose of this fund is to assist local sponsors with the acquisition of land rights for flood control projects. Local sponsors use the fund to acquire easements or fee title to tracts that are needed to implement a project.
- Natural Resources Water Quality Fund. This fund was created to provide state funds to NRDs for their water quality programs.
- Water Sustainability Fund. This fund acts to improve water quality and usage, achieve water management goals, evaluate flood control, and comply with existing interstate agreements and compacts.

11.3 Local Funding Options

It is the intent of the District to use qualified projects described in *Neb. Rev. Stat. § 2-3226.04* to provide river flow enhancement to achieve the goals and objectives of the District, and to achieve the goals and objectives of the Department under the Ground Water Management and Protection Act. The District may pay for such projects by using the occupation tax provided in *Neb. Rev. Stat. § 2-3226.05*, funds granted to the District by the state or federal government, or the levy authority authorized by *Neb. Rev. Stat. § 2-3225*:

Occupation Tax (Neb. Rev. Stat. § 2-3226.05). This authority allows the District to levy an occupation tax, not to exceed 10 dollars per irrigated acre, upon the activity of irrigation of agricultural lands on an annual basis. Statute requires a public meeting for the provision of public comments to be held if the District board moves to implement an occupation tax for a qualifying project.

12 Monitoring Plan

In accordance with *Neb. Rev. Stat. § 46-715(2)(e)*, the purpose of the monitoring plan is “to gather and evaluate data, information, and methodologies that could be used to implement sections 46-715 to 46-717, increase understanding of the surface water and hydrologically connected ground water system, and test the validity of the conclusions and information upon which the integrated management plan is based”. As such, the District and the Department have agreed to complete and report on the actions listed in the following subsection. The following monitoring and reporting activities are consistent with those required in support of the Basin Plan, eliminating duplication of effort by District and Department staff.

12.1 Tracking and Reporting Water Uses

To the extent feasible, the District is responsible for collecting, tracking, evaluating, and reporting on the number, location, amount, and timing of the following water use activities:

- (a) Static groundwater level measurements,
- (b) Certification of groundwater uses and any changes to these certifications,
- (c) Develop reporting forms for municipal, commercial, and industrial annual water uses,
- (d) Irrigation water use data collected by the District, such as from metered high capacity well flow data,
- (e) Stream gage measurements on District-sponsored gages,
- (f) Water well construction permits issued and denied,
- (g) Variances granted by the District and/or the Department that allow an action contrary to an existing rule or regulation, including the purpose, location, and length of time for which the variance is applicable, and the reasoning behind approval of the variance,
- (h) Transfer permits granted by the District and/or the Department allowing the point of withdrawal, location of use, type of use, addition of a type of use, or location of certified irrigated acres to be altered, including all information provided with the application and used in the approval of the transfer,
- (i) For consistency with the Basin Plan and in keeping with *Nebraska Revised Statutes §46-715(3)* which requires the IMP to include procedures to track depletions and gains to streamflows resulting from new, retired, or other changes to uses:
 - i. Geographic location of new water wells permitted,
 - ii. Depletion calculated (and method of calculation) for each new water well permitted,
 - iii. Estimated total consumptive use of each new water well permitted,
 - iv. Retirements of agricultural, municipal, or industrial groundwater consumptive uses,
 - v. Information on any mitigation or new projects that have occurred, including geographic location, description of type and operations of the project, source water of the project, and calculated benefits associated with the project (if the project is groundwater augmentation, the report should include calculated accretions as well as the method/models used to estimated accretion values),
 - vi. Streamflow accretion activities,
 - vii. Water banking activities,
 - viii. District regulations/management activities (designated groundwater management areas, use restrictions, etc.),
 - ix. New depletions accounting report, and

- x. New data collected or model/study results (conservation measures, riparian ET, etc.).

The Department is responsible for collecting, tracking, evaluating, and reporting the following activities:

- (a) Irrigation surface water use,
- (b) Municipal and industrial surface water use,
- (c) New surface water appropriations granted (natural flow, storage, groundwater recharge, etc.),
- (d) New groundwater permits issued,
- (e) Stream gage measurements from Department-maintained gages,
- (f) Transfers/cancellations of surface water appropriations,
- (g) Surface water administrative actions taken,
- (h) New depletions accounting report, and
- (i) New data collected or model/study results (conservation measures, riparian ET, etc.).

The District and Department will meet each year to review the VIMP following the Coalition annual Basin Plan meeting in April and prior to July 1, with the first annual VIMP meeting to occur prior to July 1, 2020. The District and Department will jointly review and evaluate the reports and data gathered for accuracy and consistency, identify data anomalies and probable causes, and flag data and information that may require closer inspection and review. The District and Department will evaluate progress toward completion of identified action items and discuss anticipated activities in support of VIMP implementation for the coming year.

In addition, the District and the Department will use the Department's Integrated Network of Scientific Information and GeoHydrologic Tools (INSIGHT) system to compare annual water use data to historically reported water use data and information, and perform analyses to determine the effects of new water uses on existing water users within the District.

13 Modifications to the Integrated Management Plan

The District and the Department will hold an annual review in conjunction with the Basin Plan review to evaluate progress on implementation of the VIMP. The SAC will be invited to participate in the review. The first annual review will be performed by July 1, 2020, and will be performed every year thereafter.

Action items undertaken by the District and the Department will be reviewed to determine if these items are fulfilling the goals and objectives of the VIMP. The District and the Department will jointly determine if amendments to the VIMP are necessary. Amendments to the goals and objectives of the VIMP will require an agreement by both parties, and may require reconvening of the SAC. If amendments to the VIMP are necessary, the District and the Department will hold a joint hearing and issue the pertinent orders to formally adopt the revised VIMP. While the VIMP is under the joint authority of the District and the Department, District Rules and Regulations are under the sole authority of the District and can only be changed with District Board approval and a public hearing.

APPENDIX A

Letters Initiating the Voluntary IMP Process



Upper Elkhorn Natural Resources District

301 N. Harrison Street - O'Neill, Nebraska 68763
(402) 336-3867 - FAX (402) 336-1832 www.uenrd.org

Nebraska Dept. of Natural Resources
% James C. Schneider, Acting Director
PO Box 94676
Lincoln, NE 68509-4676

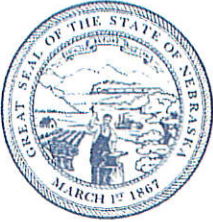
June 8, 2015

To: Jim Schneider, Acting Director

Jim, I am writing to inform you that at the May 26th, 2015 Upper Elkhorn NRD Board of Directors meeting, that the board voted and approved to begin the process of developing a Voluntary Integrated Management Plan for the entire Upper Elkhorn NRD. We can be available to meet with your agency and staff to discuss possibilities, requirements, and steps needed. Stating this, the Upper Elkhorn NRD would like to invite the Nebraska Department of Natural Resources to attend the June 22nd, 2015 monthly board meeting. The monthly board meeting will start at 7:00PM. This would be a great opportunity for the board and staff to better understand what is needed in developing such a plan. We appreciate the Nebraska Department of Natural Resources involvement in this process.

Sincerely;

Dennis Schueth, General Manager
Upper Elkhorn NRD



Pete Ricketts
Governor

STATE OF NEBRASKA

DEPARTMENT OF NATURAL RESOURCES
James C. Schneider, Ph.D.
Acting Director

IN REPLY TO:

June 19, 2015

Dennis Schueth, General Manager
Upper Elkhorn Natural Resources District
301 North Harrison Street
O'Neill, NE 68763

Dear Dennis,

I appreciate your notification of your intent to develop a district-wide Integrated Management Plan (IMP). I have assigned Tim Freed as the Department's Point of Contact for this important planning initiative. I would advise you to contact Tim at your earliest convenience to initiate activities related to developing our joint IMP. Tim can be reached by phone at (402) 471-3931, or by e-mail at tim.freed@nebraska.gov.

The past experience of the Department indicates that it would likely be in both of our agencies best interest if we initiate joint conversations related to the overarching goals and objectives of the IMP early in the process to ensure that a clear path exists for developing a solid foundation for our planning efforts.

The Department appreciates this opportunity to work collaboratively with the District in proactive management of our water resources.

Sincerely,

A handwritten signature in blue ink, appearing to read "JCS", written over a circular stamp.

James C. Schneider, Ph. D.
Acting Director, Department of Natural Resources

APPENDIX B

Glossary of Terms

Appendix B: Glossary of Terms

Aquifer: A geological formation or structure of permeable rock or unconsolidated materials that stores and/or transmits water, such as to wells and springs. Alluvial aquifers are comprised of unconsolidated materials, such as sand and gravel, while Bedrock aquifers are comprised of rock.

Appropriation: A permit granted by the Department to use surface water for a beneficial use in a specific amount, purpose, and location. It is based on first-in-time, first-in-right.

Beneficial Use: That use by which water may be put to use to the benefit of humans or other species.

Certified Irrigated Acre: Lands identified and registered with the District greater than one acre which has water applied for irrigation.

Conjunctive Management: The coordinated and combined process that utilizes the connection between surface water and groundwater to maximize water use, while minimizing impacts to streamflow and groundwater levels in an effort to increase the overall water supply of a region and improve the reliability of that supply.

Consumptive Use: The amount of water that is consumed under appropriate and reasonable efficient practices to accomplish without waste the purposes for which the appropriation or other legally permitted use is lawfully made. The amount of water removed from available supplies without return to a water resources system.

Department: The Nebraska Department of Natural Resources, a state agency

District: The Upper Elkhorn Natural Resources District, a political subdivision of the State.

Groundwater: Water which occurs in, or moves, seeps, filters, or percolates through, ground under the surface of the land, and shall include groundwater which becomes commingled with waters from surface sources.

Groundwater Management Plan: The District's plan that identifies the water quantity and quality characteristics, supplies, uses, data collection methods, management objectives, and management areas of groundwater supplies within the District.

Hydrologically Connected: An area where groundwater and surface water are interconnected and withdrawals from one can affect the other. To determine if an area is hydrologically connected (as defined in Department Rules), one calculates if a well pumped for 50 years will deplete the river or a base flow tributary by at least 10 percent of the amount pumped in the 50 year period (the 10/50 area, from Title 457 Nebraska Administrative Code Ch. 24 001.02). Describes a geographic area designated by the Department where the existing amount of groundwater and surface water each has significant influence on the other, and where appropriate regulations exist.

INSIGHT: Developed and maintained by the Department, INSIGHT stands for an Integrated Network of Scientific Information and GeoHydrologic Tools. The purpose of INSIGHT is to provide an annual

snapshot of water conditions across the state. Hydrologic data are consolidated from several different sources, including the Department, U.S. Geological Survey, U.S. Bureau of Reclamation, and local NRDs, and are presented in charts for the following categories: water supplies, water demands, nature and extent of use, and water balance. Data are presented in a consistent format and become more local as the user drills down from the statewide level to the basin-wide and subbasin levels using the database interface.

Irrigation: The artificial application of water to promote the growth of vegetation.

Lower Platte River Basin Coalition (Coalition): The Coalition members include the Upper Loup NRD, Lower Loup NRD, Upper Elkhorn NRD, Lower Elkhorn NRD, Lower Platte North NRD, Lower Platte South NRD, Papio-Missouri River NRD, and the Department. The purpose of the Coalition is to coordinate efforts to protect the long-term balance of the Basin's water uses and water supplies. The first action of the Coalition was to voluntarily develop a Lower Platte Basin Water Management Plan.

Monitoring Well: A well which is used to withdraw water for purposes of testing for contaminants and/or which is used to check the level of groundwater.

Recharge: A hydrologic process where water moves downward from surface water to groundwater, both naturally through the hydrologic cycle or through intentional practices.

River Basin: The land area that is drained by a river and its tributaries.

Stakeholder Advisory Committee (SAC): Representatives from various interest groups and professional fields who provide consultation on aspects of the Integrated Management Plan.

Surface Water: Water that is on the Earth's surface, such as a stream, river, lake, or reservoir unless such water body has been designated in rule or statute as something else (for example, a water storage lagoon or sand pit lake).

Water Use: The legally accepted use of a groundwater well or surface water appropriation.

Water Quality: The measure of physical, chemical and biological characteristics of water.

Watershed: The area of land where all of the water that drains under or off of it goes to the same outlet.

APPENDIX C

Stakeholder Advisory Committee

Appendix C: Stakeholder Advisory Committee

Irrigators	Groundwater users	Tim Kallhoff Aaron Anderson Kevin Blair Nick Penlerick Scott Beckman Dennis Baumert
	Surface water users	Ron Cemper Leroy Behnk William Kaczor Ron Funk
Municipalities	City of O'Neill	Curtis Kizzire
	City of O'Neill	Daniel Gdowski
	Village of Ewing	Alan Potter
	City of Atkinson	Gary Thurlow
	City of Atkinson	Scott Fix
	Village of Oakdale	Duane Jones
	Villages of Stuart & Newport	Jack Kaup
Agricultural Groups	Aurora Co-op	Maurice Soper
	Tab Financial	Tom Borer*
	Holt Co. Farm Bureau	Katie Olson
	Atkinson Fertilizer	Chuck Peterson
Large Water Users		Alden Zuhlke
Well Drillers	Sargent Irrigation	Dale Schindler
	Grosch Irrigation	Kyle Knight
Recreational Groups	O'Neill Golf Course	Kent Harte
Economic Development	Holt County Economic Development	Darby Paxton
Other	Rancher	Jim Ramm
	Rancher	E. Clark Gotschall

*Requested to be removed from SAC per correspondence dated August 29, 2018

In addition to the Stakeholder Advisory Committee, several attendees from the general public also participated. General public participants included:

Kenny Kallhoff
Charlie Molvig
Dean Smith
Tad Judge
Gene Choha
Allan Bentley
Justin Estill
Terry Kuchera
Jeri Kuchera
Marv Fritz

APPENDIX D

Calculation of Annual Depletion Redistribution for Lower Platte Basin

1. The Lower Platte Basin Water Management Plan (Basin Plan) identifies the limits on new depletions within each NRD for the first 5-yr increment. Table 4.2 from the Basin Plan is shown below, with the allowable depletions for the District highlighted.

TABLE 4.2. FIRST 5-YEAR INCREMENT ALLOWABLE NEW DEVELOPMENT (DEPLETIONS) BY NRD			
NRD	Sub-Basin	First 5-year Increment Allowable New Development (Depletions) - Peak Season ¹	
		% Sub-Basin	AF
Upper Loup NRD	Loup River	32%	2,768
Lower Loup NRD	Loup River	68%	5,883
Upper Elkhorn NRD	Elkhorn River	25%	1,504
Lower Elkhorn NRD	Elkhorn River	75%	4,514
Papio-Missouri River NRD	Lower Platte River	21%	869
Lower Platte South NRD	Lower Platte River	24%	993
Lower Platte North NRD	Lower Platte River	55%	2,276

¹The allowable new depletion is for all new uses. Apportionment between new surface water and groundwater uses will be made according to each individual NRD Integrated Management Plan.

2. The table below summarizes the Groundwater and Surface Water Development allowed within the District in 2016 and 2017 (as reported by the District and the Department in their 2018 Annual Basin Report), as well as the updated allocations of new depletions between the District and the Department through 2021.

From Table 4.2 of Basin Plan, total allocation for UENRD (both District and Department) = 1,504 AF		
	NeDNR Portion	District Portion
Allocation of Starting Depletions	752 AF	752 AF
Permitted Depletions 2016-17	0 AF	110 AF
Total Permitted Depletions 2016-17 = (0 + 110) = 110 AF		
New Allocation of Depletions through 2021: = 50% of (total allocation – total used) = 0.5 x (1,504 AF – 110 AF) = 0.5 x 1,394 AF	697 AF	697 AF