

## Integrated Management Plan

Jointly Developed by the Middle Niobrara Natural Resources District and the Nebraska  
Department of Natural Resources



### Voluntary Integrated Management Plan

Jointly developed by the Middle Niobrara Natural Resources District  
and the Nebraska Department of Natural Resources

Effective Date: December 30, 2020

Approved by the MNNRD Board of Directors December 1, 2020

Approved by NeDNR November 30, 2020

# Integrated Management Plan

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## 1. AUTHORITY AND EFFECTIVE DATE

This voluntary Integrated Management Plan (VIMP) was prepared and adopted by the Board of Directors of the Middle Niobrara Natural Resources District (District) and the Nebraska Department of Natural Resources (NeDNR), in consultation with their Stakeholder Advisory Committee (SAC) and in accordance with the Nebraska Ground Water Management and Protection Act. The Act assigns NeDNR and the District the responsibilities and authority for management of groundwater, surface water, and their hydrologically connected areas in accordance with *Neb. Rev. Stat. §§ 46-715 (1)(b) through 46-717 and 46-718 (1) and (2)*.

The letters initiating this VIMP are included in Appendix A. This VIMP was adopted by the District on December 1, 2020, and by NeDNR on November 30, 2020. The VIMP became effective on December 30, 2020.

## 2. PURPOSE

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

## 3. BACKGROUND

### 3.1 Fully Appropriated Basin Evaluation

The Nebraska Legislature passed LB 962 on January 9, 2004, requiring NeDNR to evaluate the long-term water balance of hydrologically connected river basins and subbasins annually. NeDNR's report, entitled "Annual Evaluation of Availability of Hydrologically Connected Water Supplies"<sup>1</sup>, conveys the results of this evaluation. Through this Fully Appropriated Basins (FAB) evaluation, a river basin or subbasin is considered "fully appropriated" when current uses of hydrologically connected water supplies will, in the reasonably foreseeable future, cause:

- 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;

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<sup>1</sup> <https://dnr.nebraska.gov/water-planning/annual-evaluation-availability-hydrologically-connected-water-supplies-fab-report>

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- 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,
- 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.

The “hydrologically connected areas” are identified by NeDNR as a part of the annual FAB evaluation. These are areas where groundwater is affected by streamflow or where streamflow is affected by groundwater, which are termed “hydrologically connected”. By NeDNR rule, this area is defined as the “10/50 area”. A groundwater well that is constructed in the 10/50 area would deplete river flow by at least 10 percent of the water pumped over a 50-year period. It is important to note that this may be in terms of both direct depletion to the stream, by causing the stream to lose water to the local groundwater system, and in terms of indirect depletion to the stream, by intercepting groundwater that would otherwise be contributed to streamflow.

### 3.2 Integrated Management Plans (IMPs)

If NeDNR has designated or determined a river basin or subbasin to be fully appropriated, the affected NRD(s) must develop an IMP with NeDNR. This is a joint water quantity management plan to manage quantities of hydrologically connected groundwater and surface water. The overarching purpose of the IMP is to manage the river basin or subbasin to achieve and sustain a long-term balance between water uses and water supplies. *Nebraska Revised Statutes* §§ 46-715 through 46-717 and portions of 46-718 describe the process by which the IMP is developed and implemented.

### 3.3 Voluntary Integrated Management Plans

LB764, enacted in 2010 and codified at *Neb. Rev. Stat.* § 46-715(1)(b), authorized NRDs to voluntarily develop an IMP with NeDNR to jointly manage groundwater and surface water uses and supplies in areas that have not been designated as fully appropriated. The VIMP process is an opportunity for NRDs and NeDNR to work together to protect existing water uses by proactively managing the growth of water use in an effort to avoid such a designation. A VIMP is developed in the same way as a mandated IMP; it utilizes the same statutory framework as discussed in Section 3.2.

#### 3.3.1 Components of an Integrated Management Plan

*Nebraska Revised Statute* § 46-715(2) specifies five mandatory components that are included in each IMP. Together, these components enable effective implementation of the IMP in order to fulfill the purpose of maintaining and achieving a balance between hydrologically connected groundwater and surface water. These components are listed below and include a reference to the associated section in this VIMP:

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- Clear goals and objectives with a purpose of sustaining a balance between uses and supplies so that economic viability, social and environmental health, safety and welfare of the basin/subbasin is achieved and maintained (Section 6).
- A map clearly delineating the geographic extent of the IMP (Section 5).
- One or more groundwater controls (Section 7).
- One or more surface water controls (Section 7).
- A plan to gather and evaluate data, information, and methodologies to implement the IMP, increase understanding of the surface water and hydrologically connected groundwater system, and test the validity of information and conclusions upon which the IMP is based (Section 8).

*Nebraska Revised Statute* § 46-715(3) outlines additional IMP components that provide a process for economic development opportunities and economic sustainability. The IMP, in conjunction with District rules and regulations, and NeDNR rules, regulations, and statutes, establishes procedures to meet the requirements of *Neb. Rev. Stat.* § 46-715(3). In this way, economic development in the District may continue, so long as existing surface and groundwater users are not adversely affected by the new uses.

*Nebraska Revised Statute* § 46-715(4) describes the purpose of groundwater control(s) and surface control(s) that are to be included in each IMP. The controls should be consistent with the goals and objectives of the plan, should protect existing ground and surface water users in hydrologically connected areas, and should be sufficient to ensure the state will remain in compliance with any applicable interested water compact or other formal state contract or agreement pertaining to surface water or groundwater use or supplies. The allowable surface water controls are listed in *Neb. Rev. Stat.* § 46-716, and the allowable groundwater controls listed in *Neb. Rev. Stat.* § 46-739. The groundwater and surface water controls for this VIMP are described in Section 7.

## 4. PUBLIC PARTICIPATION

NeDNR staff met with District staff, members of the Board of Directors, and stakeholders on April 13, 2016 to set up a plan to develop a VIMP, and again on November 27, 2018 (which was a public meeting) to discuss and update goals and objectives. In each meeting, stakeholders asked questions and added input as they developed the goals and objectives of the VIMP, the purpose of which is to maintain a balance between the uses and supplies of the area's water resources.

*Nebraska Revised Statute* § 46-717(2) outlines the stakeholder process that is an integral part of IMP development. It specifies the specific stakeholder interests that the District and NeDNR shall consult during the preparation of an IMP. These interests are reclamation districts, public power and irrigation districts, mutual irrigation companies, canal companies, and municipalities that rely on water in the affected river basin or sub-basin. Other water users and stakeholders that are deemed appropriate by the District or NeDNR may be consulted during IMP development. The

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District and NeDNR are required to solicit public comments and opinions through public meetings and other means.

In accordance with *Neb. Rev. Stat. § 46-717(2)*, this VIMP was developed collaboratively by the District and NeDNR, in consultation with the Middle Niobrara SAC. The SAC consisted of the following general interest groups: irrigation districts, mutual irrigation companies, agriculture, environmental, recreation, county officials, and technical advisors (see Appendix B for a complete list of participants).

## 5. MAPS AND DESCRIPTION OF THE IMP AREA

### 5.1 Map of the Integrated Management Area

The Middle Niobrara NRD is located in north central Nebraska and contains portions of Cherry, Keya Paha, Rock and Brown counties. The District covers approximately 2,944,177 acres. Figure 1 shows the boundaries of the IMP area.

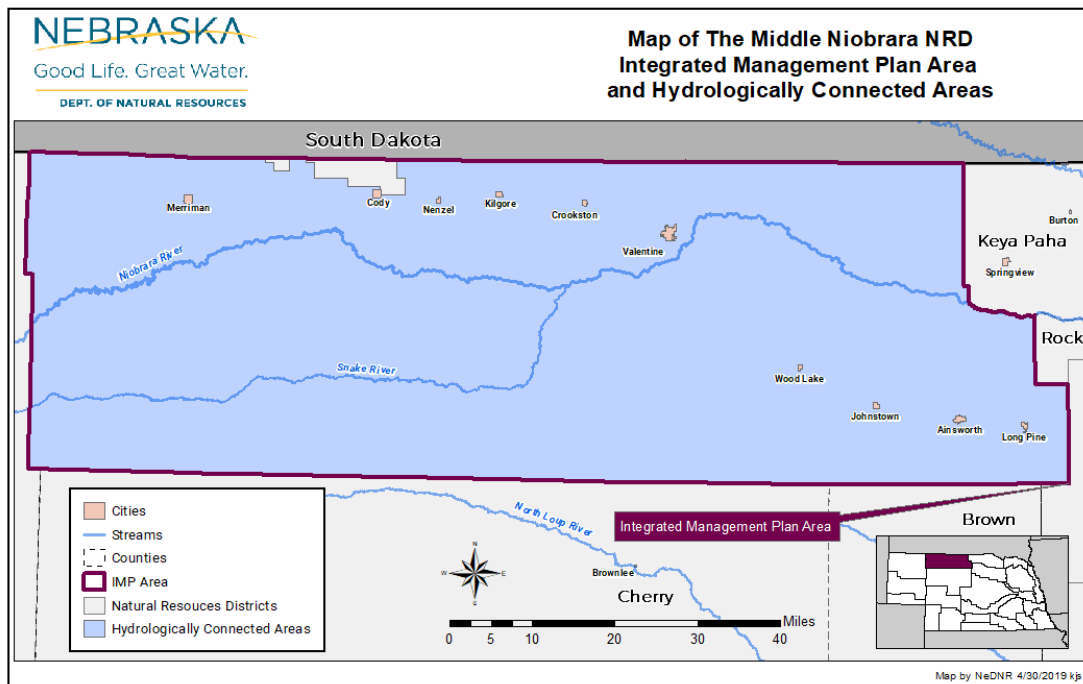


Figure 1: Map of the Middle Niobrara NRD Integrated Management Plan area.

### 5.2 Land Use and Land Cover

The distribution of land use and land cover in this area is shown in Figure 2. About 2,514,759 (85%) of the District's land cover is made up of pasture/grassland, most of which is natural grassland, and 136,680 acres (5%) is cropland. The most prominent crop types are corn with

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74,098 acres, soybeans with 24,825 acres, and alfalfa with 19,664 acres (USDA Department of Agriculture NASS Cropland Data Layer).

Based upon data from the MNNRD certified acres database, in 2017 there were 113,171 acres certified for groundwater irrigation. Based upon data from NeDNR's surface water permits database, there were 49,304 acres of land permitted to be irrigated with surface water. Matching these data with the NASS CDL information, NeDNR estimated the number of actual irrigated acres in 2017 by assuming that any certified or permitted acres that overlapped the NASS CDL grassland crop type were not irrigated that year. Based upon that assumption, 120,053 acres of cropland were irrigated, with 30,458 acres (25%) irrigated with surface water, 83,246 acres (69%) with groundwater, and 6,345 acres (5%) comingled (a combination of surface water and groundwater irrigation). A total of 16,628 acres of cropland were dryland acres Figure 3 shows the irrigated lands within the District.

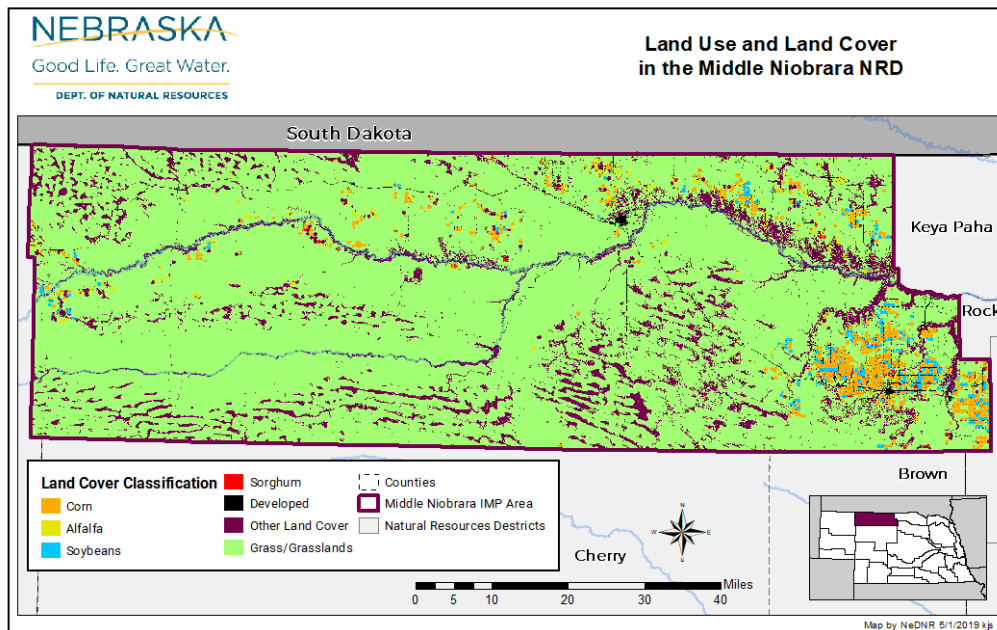


Figure 2: Land use and land cover in the District.

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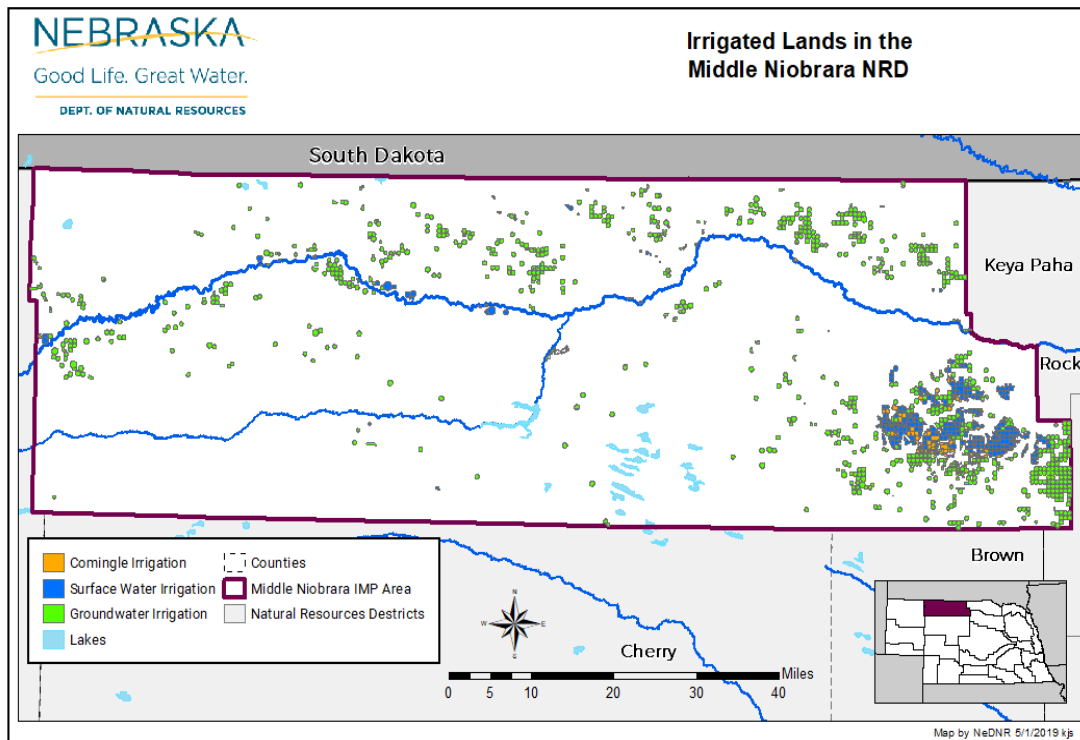


Figure 3: Irrigation distribution in the District.

### 5.3 Surface Water

#### 5.3.1 Local Hydrology

The District lies in north central Nebraska along the middle stretch of the Niobrara River. About 60% of the District is made up of the Nebraska Sandhills; it is located along their northern edge. The Sandhills are made up of an extensive region of sand dunes stabilized by grass and other vegetation (District Master Plan, 2012).

The Niobrara River valley runs from the west to the east of the District and forms a deep canyon with various breaks and drainages formed by down cutting of the river and its numerous tributaries. The Niobrara River has one of the more consistent flows within the region: an estimated 70% of the water comes from seepage from the underlying Ogallala Aquifer and the remaining 30% from precipitation, which ranges from below 17 inches in the west, to over 23 inches in the eastern part of the District. Snowfall averages around 33.5 inches per season (District Master Plan, 2012).

#### 5.3.2 Surface Water Permits

NeDNR has authority over the permitting, inspection, and adjudication of Nebraska's surface water appropriations, with uses ranging from domestic to agriculture to power



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generation. Within the District, there are a variety of active surface water permits that include agricultural, industrial, storage, and other uses. Table 1 summarizes the active surface water appropriations by type and water amount as of May 5, 2019. Each surface water permit has an approved location where the water may be stored or withdrawn; this location is termed the “point of diversion.” A map of the District’s surface water points of diversion and the lands irrigated by surface water are shown in Figure 4.

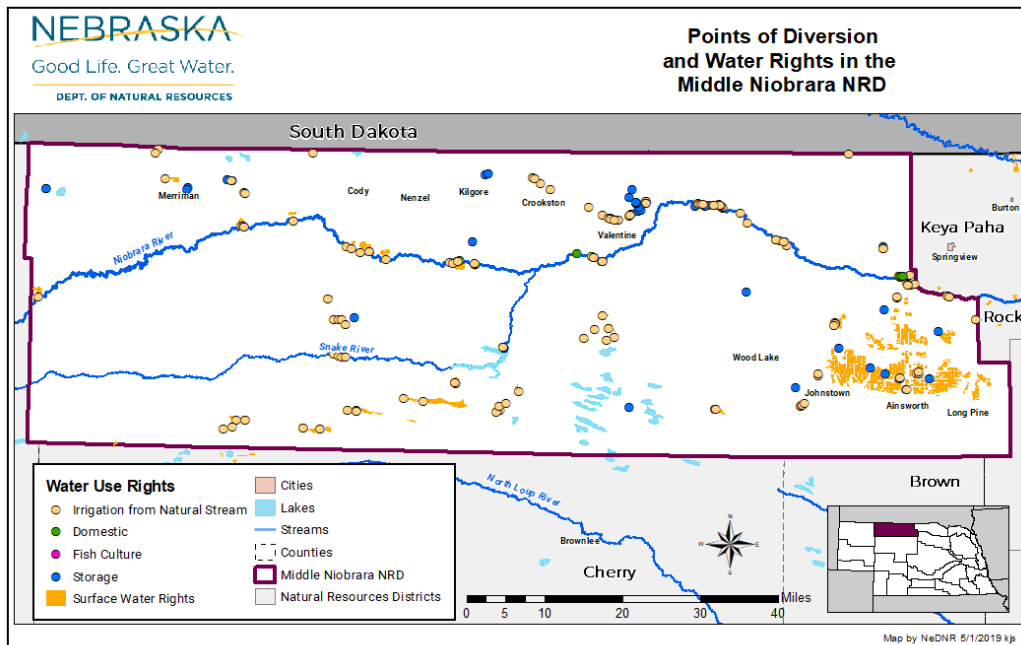


Figure 4: Location of irrigated lands served by surface water and the water right points of diversion in the Middle Niobrara NRD (source: NeDNR).

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**Table 1:** Surface water permits in the District as of May 5, 2019.

<b>ACTIVE SURFACE WATER PERMITS IN THE MIDDLE NIOBRARA NRD</b> as of 27 March 2020				
<b>Purpose of Permit</b>	<b>Number of Permits</b>	<b>Acres Approved for Irrigation</b>	<b>Grant in cfs</b>	<b>Grant in af</b>
(IR) Diversion from naturally flowing source for irrigation	110	49,345.8	698.46	N/A
(SI) Diversion from a reservoir for irrigation of land that is also approved to receive water from a naturally flowing source	11	35,655.5	N/A	510
(SO) Diversion only from a reservoir for irrigation	0	0.0	N/A	0
<b>Total Irrigation Permits</b>	<b>121</b>	<b>49,345.8</b>	<b>698.46</b>	<b>510</b>
(DO) Domestic Use	5	5.4	0.10	N/A
(ST) Storage of water in a reservoir held by MNNRD	4	N/A	N/A	628.2
(ST) Storage of water in a reservoir not held by MNNRD	24	N/A	N/A	77,775.6
(SS) Supplemental storage	2	N/A	N/A	150
<b>Total Storage Permits</b>	<b>35</b>	<b>5.4</b>	<b>0.10</b>	<b>78,553.8</b>
Aggregate washing	1	N/A	0.89	0
Fish culture	1	N/A	N/A	98
<b>Total Permits</b>	<b>158</b>	<b>49,351.20</b>	<b>699.45</b>	<b>79,161.8</b>

<b>Permits Utilized under the Ainsworth Irrigation District*</b> as of 27 March 2020				
<b>Purpose of Permit</b>	<b>Number of Permits</b>	<b>Acres Approved for Irrigation</b>	<b>Grant in cfs</b>	<b>Grant in af</b>
(IR) Diversion from naturally flowing source for irrigation	11	35,655.5	509.39	N/A
(SI) Diversion from a reservoir for irrigation of land that is also approved to receive water from a naturally flowing source	11	35,655.5	N/A	510
(ST) Storage of water in a reservoir	1	N/A	N/A	74,486
<b>Total</b>	<b>23</b>	<b>35,655.5</b>	<b>509.39</b>	<b>74,996</b>

\*Permits and totals included in table above.

### 5.4 Groundwater

The District is located in the Sandhills in the northeastern part of Nebraska. The District has two major aquifers: the Ogallala and Dakota Aquifers. A third minor aquifer, the Arikaree,

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provides minor amounts of water in the western part of the District along the Cherry/Sheridan County line (District Master Plan, 2012). A map of the District's groundwater wells is shown in Figure 5.

- **The Ogallala Aquifer:** This is the major source of water for irrigation, stock and domestic wells in the District and is found under almost 80% of the District. The Ogallala Group in this area is made up of silt, sand gravel and conglomerate. Most of the sand, gravels and conglomerates are poorly consolidated, making them excellent conductors of groundwater. Under normal conditions, the Ogallala Aquifer provides ample supplies of high-quality groundwater. Precipitation is limited in the NRD, but the high permeability of the sandy soils allow for high recharge rates. Depth to water in the Ogallala Aquifer is highly dependent on the topography and can range from near the surface to over 200 feet (District Master Plan, 2012).
- **The Dakota Aquifer:** The Dakota Aquifer, made up of sands and sandstones that are poorly consolidated in many areas, is a principle source of water in northeastern Cherry and western Keya Paha Counties. Depth to water ranges from 50 to 200 feet. Yields vary from small to moderate with only small areas producing water sufficient for irrigation. In general, the Dakota Aquifer is of lesser quality than the Ogallala; it is highly mineralized in some areas (District Master Plan, 2012).
- **The Arikaree Aquifer:** The Arikaree Aquifer occurs in the far western portion of the District. It consists mainly of compact sand that has layers of hard, fine-grained concretions. It also contains large amounts of volcanic material. Areas that are less compact and fractured can conduct minor amounts of water. Wells drilled in the Arikaree Aquifer tend to be deeper than the Ogallala, with depths normally ranging from 50 to 100 feet (District Master Plan, 2012).

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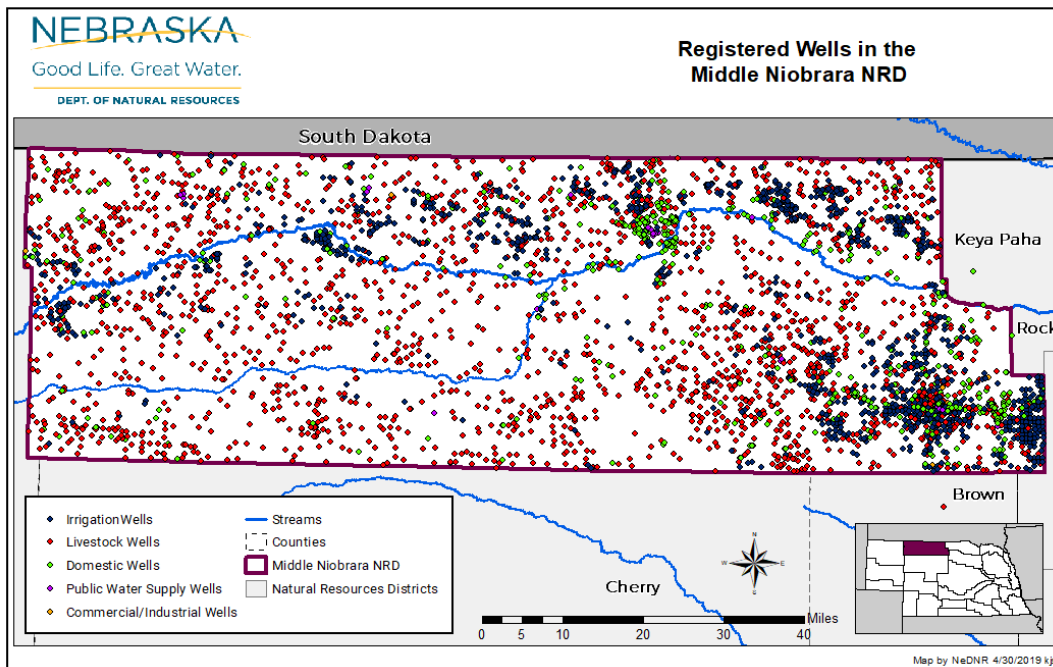


Figure 5: Distribution of groundwater wells in the District (source: NeDNR).

## 6. GOALS, OBJECTIVES, AND ACTION ITEMS

The ultimate goal of the integrated management planning process is to protect existing water users and their investments and interests while facilitating economic growth and well-being across the District. For this first phase of the integrated management planning process for the District's VIMP, the goals and objectives focus on 1) improving the understanding the water supplies and uses within the District, 2) protecting existing users while planning for future uses, and 3) effectively communicating water resource information and management actions to the general public. These fundamental elements of integrated management planning allowed for tailoring NeDNR and District actions in the subsequent 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. **Action Items** are the specific tasks that the District and NeDNR undertake to get the necessary work accomplished.

### 6.1 Goal 1

Develop and implement processes for the uniform availability of adequate hydrologic and other related data to assess water resources.

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Objectives	Action Item	Assigned to
1.1 To conduct data collection and analysis of water supplies and demands, utilizing the best available information, data, and science <sup>2</sup>	1.1.1 Develop accurate baseline data for water uses	District and NeDNR
	1.1.2 Develop methodologies for data collection (including but not limited to format and timing)	District and NeDNR
	1.1.3 Utilize and consider expansion of existing systems to collect and exchange water related information and share with one another	District and NeDNR
	1.1.4 Adjust to and assess changing needs for relevant data components	District and NeDNR
	1.1.5 Continue to monitor and consider opportunities to expand monitoring of stream flows and groundwater levels in coordination with one another	District and NeDNR
1.2 Evaluate the need for studies to identify hydrologically distinct sub-areas within the District for the purposes of integrated management	1.2.1 Utilize groundwater modeling and other analyses to assess hydrologic connectivity between surface water and groundwater	District and NeDNR
	1.2.2 Utilize NeDNR INSIGHT data to assess quantity of available water within hydrologically distinct sub-areas	District and NeDNR
	1.2.3 Conduct studies to identify hydrologically distinct sub-areas within the District for the purposes of integrated management	District and NeDNR
1.3 Continue to monitor changes in water uses recognized currently and	1.3.1 Maintain a comprehensive inventory of the location and source of current and future water supplies, beneficial water uses, and outflows	District and NeDNR

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<sup>2</sup> The District's certified irrigated acres data, combined with NeDNR's data on current surface water rights, as of the effective date of this VIMP will serve as the baseline of water demands.

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in the future within the District	1.3.2 Calculate and/or estimate consumptive water use utilizing the best available data and analysis tools	District and NeDNR
	1.3.3 Work with public and private individuals and entities that may have an interest to understand current and future water demands	District and NeDNR

### 6.2 Goal 2

Develop systematic approaches for the development and sustainability of water resources, while protecting existing uses and supplies, allowing for growth and changes in use within the District, and promoting coordination between surface water and groundwater users to protect all water uses in the District.

Objectives	Action Item	Assigned to
2.1 Consider local water development needs	2.1.1 Identify current levels of water development in the District	District and NeDNR
	2.1.2 Identify locally desired characteristics regarding development	District and NeDNR
2.2 Consider acceptable levels of water development for the District, and by sub-area if designated, especially in areas with hydrologically connected groundwater and surface water	2.2.1 Identify the current water supply in the District using NeDNR INSIGHT methodology	NeDNR
	2.2.2 Identify potential new water supplies	District and NeDNR
	2.2.3 Continue to assess potential impacts to existing uses	District and NeDNR
2.3 Assess the potential impact of new surface water and groundwater uses on existing surface water and groundwater users within the District	2.3.1 Utilize tools, such as groundwater models and hydrologic tools for the assessment  2.3.2 Determine steps to ensure existing users are protected, based upon the assessment	District and NeDNR

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2.4 Explore water supply enhancement projects using the best available models, analysis, and other tools	2.4.1 Efficiently manage groundwater supply	District
	2.4.2 Increase surface water storage	District
	2.4.3 Increase stream base flow	District
	2.4.4 Make water available from an existing source	District
	2.4.5 Estimate or calculate enhanced supplies made available through recharge projects	District and NeDNR
	2.4.6 Increase efficiencies for irrigation districts	District and NeDNR
2.5 Minimize invasive and other vegetation encroachment in the river corridor and tributary corridors	2.5.1 Identify and inventory areas where there is an invasive or other vegetation encroachment	District
	2.5.2 Coordinate efforts with local authorities to address the identified problems	District
2.6 Consider conjunctive management projects and activities	2.6.1 Consider conjunctive management programs or project opportunities to protect existing users or mitigate new uses, including but not limited to, water rights leases, interference agreements, augmentation projects, conjunctive use management, retiming flows, or use retirement	District and NeDNR
2.7 Explore options for reuse and banking of water	2.7.1 Establish uniform methods for conducting water banking of both groundwater and surface water	District and NeDNR
	2.7.1 Evaluate potential for reuse of water, such as harvesting of rainwater, capture and reuse of storm water, and the reuse of irrigation water	District and NeDNR
	2.7.2 Investigate and evaluate water banking opportunities	District and NeDNR
2.8 Expand the use of best management practices (BMPs) to utilize	2.8.1 Continue to assist with municipal and industrial BMPs	District

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and maintain groundwater and surface water supplies	2.8.2 Consult with appropriate entities	District and NeDNR
	2.8.3 Consider irrigation scheduling using appropriate technologies	District and NeDNR

### 6.3 Goal 3

Develop and provide educational opportunities and outreach materials about hydrologically connected surface water and groundwater and about water conservation.

Objectives	Action Item	Assigned to
3.1 Continue to disseminate water conservation information to utilize and maintain water supplies	3.1.1 Research and review current and new best water conservation practices	District and NeDNR
	3.1.2 Provide information to the general public through educational materials, media releases, newsletters, pamphlets and websites	District and NeDNR
	3.1.3 Assess data and supporting information in 3.1.1 and 3.1.2 and consider any management changes necessary to protect existing uses while also considering future demands	District and NeDNR
	3.1.4 Tailor specific information as needed to audiences through workshops, open houses, demonstration projects, and direct mailings. Information may include but is not limited to topics such as hydrologically connected areas, IMPs, water conservation practices, District water quality and quantity awareness, and funding sources for programs	District and NeDNR
	3.1.5 Continue to collaborate and support school environmental education curriculum and programs	District and NeDNR
3.2 Continue participation in information sharing with other organizations and agencies to conserve	3.2.1 Continue coordination with public water systems on current programs and the development of programs dealing with water supplies, and best conservation practices	District and NeDNR



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resources and prevent duplication of work	3.2.2 Continue to coordinate with villages, counties and others as they develop long-term planning activities	District and NeDNR
	3.2.3 Continue to coordinate with industries, cities and agricultural producers to encourage water quantity education and conservation	District and NeDNR
	3.2.4 Evaluate the potential for partnership programs or projects that support the use of best management practices related to water management	District and NeDNR
	3.2.5 Continue to coordinate with federal agencies on water utilization through fewer restrictions	District and NeDNR

## 7. CONTROLS

Per *Neb. Rev. Stat.* § 46-715, each IMP must have at least one groundwater control and at least one surface water control. The controls must be consistent to meet the goals and objectives of the IMP. The allowable groundwater and surface water controls are specified in *Neb. Rev. Stat.* §§ 46-739 and 46-716, for groundwater and surface water, respectively. For this IMP, The District and Department agreed on controls that will be jointly implemented to manage hydrologically connected groundwater and surface water. These controls relate to limits on new uses.

The limits on development of new water uses correspond to the impact that new surface water and groundwater uses are expected to have on the Niobrara River and its tributaries over a period of 50 years. The impacts of new uses will be assessed based upon the streams that are impacted in four surface water basins across the district, the 1) Niobrara, 2) Loup 3) Elkhorn and 4) White River basins.

### 7.1 Groundwater Controls

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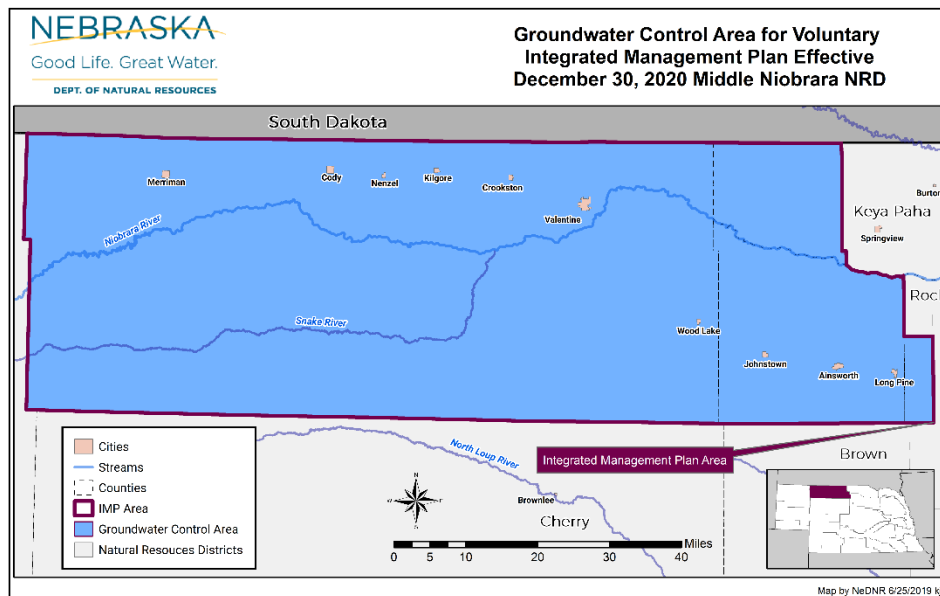


Figure 6: Groundwater control area for the District

## 1. Limit on expansion of irrigated acres

The District will establish a set number of new irrigated acres which can be applied for on an annual basis, consistent with *Neb. Rev. Stat. § 46-715(4)*. The new acres will meet a minimum score set by the Board. The District will set the number of new irrigated acres for each year by June 30, and notify the Department within 30 days. Applications for new irrigated acres will be accepted; the District will then rank the applications and notify the Department of approved irrigated acres and their locations by October 31.

## 7.2 Surface Water Controls

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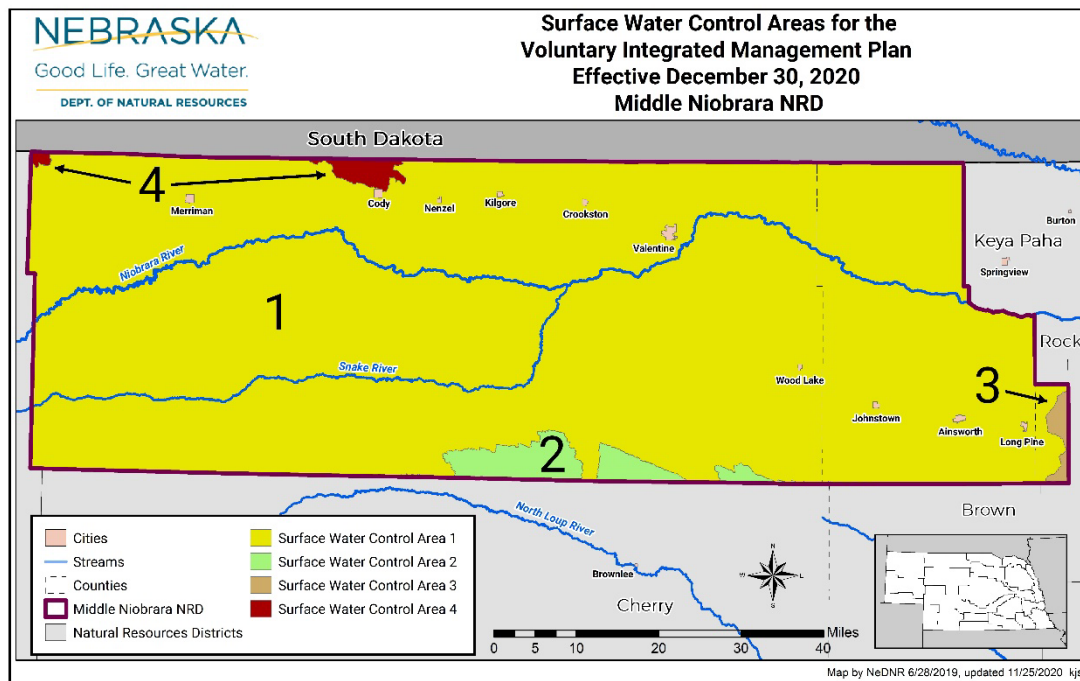


Figure 7: Surface water control areas for the District

### **Surface Water Control Area 1 (Niobrara River basin)**

NeDNR will restrict development of surface water irrigation based upon the amount of stream depletion to streams in the Niobrara River Basin resulting from newly permitted groundwater irrigation development. NeDNR will calculate additional stream depletion amounts due to new permitted groundwater irrigation development in a given year based on data provided by the District, and will restrict additional stream depletion from surface water irrigation to no more than that level of depletion in the same year. The District will notify NeDNR within 30 days of its planned approval of groundwater development, and will provide the necessary data – including legal description (section, township, and range) and number of acres irrigated – to NeDNR on all new groundwater irrigation by October 31. NeDNR will notify the District of all surface water appropriations as they are approved, including information on the location and number of acres irrigated.

## Integrated Management Plan

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### ***Surface Water Control Area 2 (Loup River basin)<sup>3</sup>***

NeDNR will restrict development of surface water irrigation based upon the amount of stream depletion to streams in the Loup River Basin resulting from newly permitted groundwater irrigation development. NeDNR will calculate additional stream depletion amounts due to new permitted groundwater irrigation development in a given year based on data provided by the District, and will restrict additional stream depletion from surface water irrigation by up to the same amount in the same year. The District will notify NeDNR within 30 days of its planned approval of groundwater development, and will provide the necessary data – including legal description (section, township, and range) and number of acres irrigated – to NeDNR on all new groundwater irrigation by October 31. NeDNR will notify the District of all surface water appropriations as they are approved, including information on the location and number of acres irrigated.

### ***Surface Water Control Area 3 (Elkhorn River basin)***

NeDNR will restrict development of surface water irrigation based upon the amount of stream depletion to streams in the Elkhorn River basin resulting from newly permitted groundwater irrigation development. NeDNR will calculate additional stream depletion amounts due to new permitted groundwater irrigation development in a given year based on data provided by the District, and will restrict additional stream depletion from surface water irrigation by up to the same amount in the same year. The District will notify NeDNR within 30 days of its planned approval of groundwater development, and will provide the necessary data – including legal description (section, township, and range) and number of acres irrigated – to NeDNR on all new groundwater irrigation by October 31. NeDNR will notify the District of all surface water appropriations as they are approved, including information on the location and number of acres irrigated.

### ***Surface Water Control Area 4 (White River basin)***

NeDNR has, since 2004, had a moratorium in place in this basin on the development of surface water irrigation. This moratorium will not be renewed as part of this IMP.

NeDNR will restrict development of surface water irrigation based upon the amount of stream depletion to streams in the White River Basin resulting from newly permitted groundwater irrigation development allowed by the NRD. NeDNR will calculate additional stream depletion amounts due to new permitted groundwater irrigation development in a given year based on

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<sup>3</sup> Appendix C demonstrates the distribution of depletions shared between the Upper Loup NRD and the Department.

## Integrated Management Plan

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data provided by the District, and will restrict additional stream depletion from surface water irrigation by up to the same amount in the same year. The District will notify NeDNR within 30 days of its planned approval of groundwater development, and will provide the necessary data – including legal description (section, township, and range) and number of acres irrigated – to NeDNR on all new groundwater irrigation by October 31. NeDNR will notify the District of all surface water appropriations as they are approved, including information on the location and number of acres irrigated.

## 8. MONITORING AND EVALUATION 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 *Neb. Rev. Stat. §§ 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 NeDNR have agreed to complete and report on the actions listed in the following subsection.

### 8.1 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:

1. Static groundwater level measurements
2. Certification of groundwater uses and any changes to these certifications
3. Information gathered through the municipal and non-municipal industrial accounting process
4. Irrigation water use data collected by the District, such as from metered high capacity well flow data
5. Stream gage measurements on District-sponsored gages
6. Water well construction permits issued and denied and any conditions associated with the permits issued
7. Any variances issued, including the purpose, location, any required offset, the length of time for which the variance is applicable, and the reasoning behind approval of the variance
8. Approved transfers, including all of the information provided with the application and used in the approval of the transfer, the location of the land area or well that is being transferred, and the location of the land area or well that will replace the original relevant flow meter data collected
9. Any retirements of irrigated aces or other activities by the District for the purpose of mitigating depletions

## Integrated Management Plan

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10. Information related to any water banking transactions
11. In keeping with *Neb. Rev. Stat. §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:
  - a. Geographic location of new water wells permitted
  - b. Depletion calculated (and method of calculation) for each new water well permitted
  - c. Estimated total consumptive use of each new water well permitted
  - d. Retirements of agricultural, municipal, or industrial groundwater consumptive uses
  - e. 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)
  - f. Streamflow accretion activities
  - g. Water banking activities
  - h. District regulations/management activities (designated groundwater management areas, use restrictions, etc.)
  - i. New depletions accounting report
  - j. New data collected or model/study results (conservation measures, riparian ET, etc.).
  - k. Offsets provided for depletions resulting from increased consumptive use related to the above-listed items. This includes reporting on offsets and mitigation activities for the purpose of addressing new depletive water uses. Such activities to be reported include canal diversions for the purpose of groundwater recharge, operation of stream augmentation projects, conjunctive management, and irrigated acre retirements.

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

1. Irrigation surface water use
2. Municipal and industrial surface water use
3. New surface water appropriations granted (natural flow, storage, groundwater recharge, etc.)
4. New groundwater permits issued
5. Stream gage measurements from Department-maintained gages
6. Transfers/cancellations of surface water appropriations
7. Surface water administrative actions taken

## Integrated Management Plan

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8. New depletions accounting report
9. New data collected or model/study results (conservation measures, riparian ET, etc.)

The District and NeDNR will meet each year to review the VIMP. The District and NeDNR 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 NeDNR 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 NeDNR will use NeDNR'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.

## 9. INCENTIVE PROGRAMS

The District and NeDNR 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 NeDNR will explore grant opportunities to supplement the annual budgeting process for funding action items for VIMP activities.

## 10. 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 NeDNR 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.

### 10.1 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

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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.

## 10.2 State Funding Options

### The Nebraska Environmental Trust

- The Nebraska Environmental Trust (NET) 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 Energy and the Environment

- 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 Energy and the Environment to provide financial assistance for prevention and abatement



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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.
- Water Resources Cash Fund. The fund shall be expended by the department (a) to aid management actions taken to reduce consumptive uses of water or to enhance streamflows or ground water recharge in river basins, subbasins, or reaches which are deemed by the department overappropriated pursuant to *Neb. Rev. Stat.* §46-713 or fully appropriated pursuant to §46-714 or are bound by an interstate compact or decree or a formal state contract or agreement, (b) for purposes of projects or proposals described in the grant application as set forth in subdivision (2)(h) of §81-15,175, and (c) to the extent funds are not expended pursuant to subdivisions (a) and (b) of this subsection, the department may conduct a statewide assessment of short-term and long-term water management activities and funding needs to meet statutory requirements in sections §46-713 to 46-718 and §46-739 and any requirements of an interstate compact or decree or formal state contract or agreement. While this fund is not currently available to the District, it may become available in the future.

### 10.3 Local Funding Options

It is the intent of the District to utilize qualified projects described in *Neb. Rev. Stat. § 2-3226.04* to provide river-flow enhancement in order to achieve the goals and objectives of the District, and to achieve the goals and objectives of NeDNR under the Ground Water Management and Protection Act. The District may fund projects through:

- Occupation Tax (*Neb. Rev. Stat. § 2-3226.05*). This statutory authority allows the District to levy an occupation tax upon the activity of irrigation of agricultural lands on an annual basis. This tax is not to exceed ten dollars per irrigated acre. 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.

## 11. REVIEW PROCESS AND MODIFICATIONS

IMP implementation utilizes an adaptive management approach for attaining or maintaining the desired balance of the hydrologic system. An adaptive management approach allows an IMP to be modified as changes to a District area, sub-area, new techniques, or the availability of additional data or information occur.

The District and NeDNR will hold an annual review to evaluate progress made towards implementation of the VIMP. As part of this annual review, the District and NeDNR will exchange annual reports summarizing the monitoring and evaluation plan described in Section 8. The monitoring and study reports, and data will be prepared, compiled, and exchanged in a standardized format, as agreed upon by the District and NeDNR. Stakeholders and the public will be encouraged to attend the annual review.

The District and NeDNR will regularly evaluate whether VIMP goals and objectives are being met, and will jointly determine if amendments to the VIMP are required. Amendments will require an agreement by both NeDNR and the District, and may require reconvening the Stakeholder Advisory Committee. If amendments to the IMP are proposed, the District and NeDNR will hold a joint hearing to issue the pertinent orders to formally adopt the revised VIMP.

## 12. INFORMATION CONSIDERED IN DEVELOPMENT OF THIS PLAN

The following sources of information were used in the preparation of the VIMP:

- Data on recharge rates within the District and adjoining NRDs
- NeDNR's rules for surface water
- NeDNR's groundwater models
- NeDNR's stream gage records

## Integrated Management Plan

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- NeDNR's INSIGHT tool and web portal
- NeDNR's surface water administrative records
- NeDNR's surface water digitized fields geospatial layer
- NeDNR's Fully Appropriated Basins report and data
- The U.S. Geologic Survey's stream gage records
- Past and present surface water use within and bordering the District
- Climate data and information (accessed from High Plains Regional Climate Center)
- Data on groundwater supplies and groundwater uses within and bordering the District
- Land cover data (Cropland data layer, NeDNR Surface Water Permit Acres, the District's certified acres)
- Additional data acquired by the District or NeDNR and additional data on file with the District and NeDNR.

## 13. 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 NeDNR 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 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.

**The District** – The Middle Niobrara Natural Resources District, a political subdivision of the State of Nebraska.

**Fully Appropriated** – From *Neb. Rev. Stat. § 46-713(3)*: A river basin, subbasin, or reach shall be deemed fully appropriated if NeDNR determines based on its evaluation conducted pursuant to subsection (1) of this section and information presented at the hearing pursuant to subsection (4) of section 46-714 that then 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 use 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.

**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.

## Integrated Management Plan

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**Groundwater Control Area** – The boundaries of the Middle Niobrara NRD (see Figure 6).

**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.

**(IMP) Action Item** – A specific task that the District or the NeDNR (or both) will undertake to achieve the goals and objectives of the IMP.

**(IMP) Goal** – A general statement of broad direction or intent with no time limit.

**(IMP) Objective** – A statement that defines a specific outcome that a group seeks to accomplish in working toward a goal.

**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. These 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.

**Integrated Management Plan** – A plan cooperatively developed by NeDNR and an NRD for the purpose of managing a river basin, subbasin, or reach to achieve and sustain a balance between groundwater and surface water uses and water supplies for the long term.

**NeDNR** – The Nebraska Department of Natural Resources, a State agency.

**NRD** – Natural Resources District, a political subdivision of the State.

**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.

## Integrated Management Plan

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**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 waste storage lagoon or sand pit lake).

**Surface Water Control Area** – Those portions of the District that drain to the Niobrara River, Loup River, Elkhorn River, or White River basins (see Figure 7).

**Subbasin** – A portion of a river basin that is drained by a waterway.

**Water bank** – A mechanism used to facilitate the transfer of water between parties, often using market-driven transactions. Water banks can be institutional, physical, or mixtures of both.

**Water Basin** – The land area that is drained by a river and its tributaries.

**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.

## Integrated Management Plan

Jointly Developed by the Middle Niobrara Natural Resources District and the Nebraska  
Department of Natural Resources

## Appendix A



**MIDDLE NIOBRARA NATURAL RESOURCES DISTRICT**

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NDNR  
PO Box 94676  
Lincoln, NE 68509-4676

January 21, 2015

Acting NDNR Director Schneider,

I am writing to inform you that at the January 12, 2015 Middle Niobrara Natural Resources District Board of Directors meeting, that the board voted and approved to explore the Voluntary Integrated Management Planning Process with your agency. We can be available to meet with your agency and staff to discuss possibilities, requirements, and steps needed. We appreciate Nebraska Department of Natural Resources involvement in this process.

Sincerely,

A handwritten signature in blue ink that reads "Michael Murphy".

Michael Murphy – MNNRD  
General Manager

RECEIVED  
JAN 26 2015  
DEPARTMENT OF  
NATURAL RESOURCES





**Pete Ricketts**  
Governor

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

February 4, 2015

IN REPLY TO:

Michael Murphy, General Manager  
Middle Niobrara Natural Resources District  
526 E 1st St.  
Valentine, NE 69201

Dear Michael,

I appreciate your notification of your intent to develop a Voluntary 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](mailto: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 "J. Schneider".

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



MIDDLE NIOBRARA  
NATURAL RESOURCES DISTRICT

303 East HWY 20  
Valentine, NE 69201

Phone: (402) 376-3241  
Fax: (402) 376-1040

January 8, 2018

Gordon Fassett  
Director, Department of Natural Resources  
Nebraska Department of Natural Resources  
301 Centennial Mall South  
Lincoln, NE 68509

Mr. Fassett,

The Middle Niobrara Natural Resources District voted at their December 14, 2015 Board meeting to extend the stay on the addition of new groundwater irrigated acres that was set to expire on December 25, 2015 until the Middle Niobrara NRD and the Department of Natural Resources have completed their Voluntary Integrated Management Plan. The District will still allow the transfer of irrigated acres.

At this time, the District is requesting the Department to reinstate the Voluntary IMP process.

The District also requests the Department of Natural Resources to extend the stay on the issuing of new surface water irrigated acres, set to expire on Feb. 4, 2018, for this same period of time.

Sincerely

A handwritten signature in black ink that reads "Mike Murphy".

Mike Murphy  
General Manager, MNNRD

RECEIVED  
JAN 10 2018  
DEPARTMENT OF  
NATURAL RESOURCES

# NEBRASKA

Good Life. Great Water.

DEPT. OF NATURAL RESOURCES

February 6, 2018

Mike Murphy, General Manager  
Middle Niobrara NRD  
303 East Highway 20  
Valentine, NE 69201



Pete Ricketts, Governor

Dear Mike:

The Department has received your January 8, 2018 letter requesting continuation of the temporary stay on the issuance of new surface water appropriations that was set to expire February 4, 2018, and to continue development of a voluntary integrated management plan (V-IMP) in cooperation with the Department per *Neb. Rev. Stat. § 46-715(1)(b)*. We have continued the temporary stay until February 4, 2020 or such time that an order is issued and effective to implement surface water controls contained in the V-IMP, whichever occurs first. Under *Neb. Rev. Stat. § 46-715(1)(a)*, an extension of two years beyond the original three-year time period to develop an IMP is allowed. It is on this basis that the stay is continued to February 4, 2020, as the Department acknowledged the District's request to initiate a V-IMP on February 4, 2015.

We look forward to working further with the District to complete the V-IMP. I have assigned Carrie Wiese as the Department's point of contact for development of Niobrara basin IMPs. Please contact Carrie for any needs regarding the planning process. She can be reached by phone at (402) 471-3931, or by e-mail at [carrie.wiese@nebraska.gov](mailto:carrie.wiese@nebraska.gov).

Again, we look forward to working with you on this important planning initiative.

Sincerely,

Gordon ("Jeff") Fassett, P.E., Director  
Nebraska Department of Natural Resources

cc: Dean Jochem, Board Chairman

Gordon W. "Jeff" Fassett, P.E., Director

Department of Natural Resources

301 Centennial Mall South  
P.O. Box 94676  
Lincoln, Nebraska 68509

OFFICE 402-471-2363  
FAX 402-471-2900

[dnr.nebraska.gov](http://dnr.nebraska.gov)



## Appendix B

Middle Niobrara Stakeholder Advisory Committee Meeting Attendees	
Name	Affiliation
Bain, Julie	US Forrest Service (USFS)
Beck, Tonny	Mutual irrigation company
Bradley, Jesse	NE Department of Natural Resources (NeDNR)
Buckendahl, Ross	Groundwater user
Corman, Jennifer	Nebraska Forrest Service (NFS)
Cosgrove, Keith	
Danielski, Len	MNNRD Board Member
Damelish, Lou	
Graff, Marty	MNNRD Board Member
Hammond, Justin	
Hand, Kay	Farm Service Agency (FSA)
Hanson, Al	Nebraska Game and Parks Commission
Heath, Francis	
Heerten, Ron	Groundwater user, range livestock owner
Hicks, Steve	US Fish and Wildlife Service (USFWS)
Hood, Kevin	Natural Resources Conservation Service (NRCS)
Jenkins, Jay	UNL Extension
Johnson, Mark	Groundwater user, range livestock owner
Kelly, Michael	
Krueger, Dona	Middle Niobrara NRD (MNNRD)
Lousias, Christine	Natural Resources Conservation Service (NRCS)
Lovejoy, Cheryl	
Miles, Mark	Irrigation District, groundwater user, range livestock owner
Morgan, Miles	US Bureau of Reclamation (USBR)
Murphy, Mike	MNNRD Staff
Peterson, Zac	MNNRD Staff
Philben, Lance	Irrigation District
Schmidt, Chandler	
Simmons, Bob	Groundwater user, range livestock owner, surface water permit holder
Storer, Tanya	
Storm, Tim	MNNRD Staff
Stout, Jim	
Thede, Steve	
Tuerk, Mike	County
Ward, Andrew	
Warrick, Gordon	National Park Service (NPS)
Wiese, Carrie	NE Department of Natural Resources (NeDNR)
Wright, Greg	US Forrest Service (USFS)

## Appendix C

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 Upper Loup NRD 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 <sup>1</sup>	
		% 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

<sup>1</sup>The 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).

From Table 4.2 of Basin Plan, total allocation for ULNRD (both District and Department = 2,768 AF		
	<b>NeDNR Portion</b>	<b>District Portion</b>
<b>Allocation of Depletions</b>	<b>1,384 AF</b>	<b>1,384 AF</b>



