

Memorandum

To: Papio-Missouri River Natural Resources District Programs Projects and Operations Subcommittee
From: Paul W. Woodward, PE, Groundwater Management Engineer
Date: February 1, 2018
Re: Review and Recommendation for Adoption of Proposed Groundwater Management Rules and Regulations

Implementation of the new Groundwater Management Plan (GMP) requires numerous revisions to the Districts Groundwater Management Rules and Regulations (Appendix N of the Policy Manual). In order for the District to adopt new Rules and Regulations, a series of public hearings were required in accordance with state statutes under the Groundwater Management and Protection Act.

Public hearings were held at three separate locations to review the proposed Rules and Regulations: Nov. 30, 2017 in Dakota City; Dec. 7, 2017 in Tekamah; and Dec. 14, 2017 in Omaha. Attendees at each of the hearings provided input and suggested potential changes, mainly to the rules and regulations.

Following the public hearings, District staff, legal counsel and Olsson Associates have reviewed proposed changes to address the public comments and are recommending the following changes that are presented for consideration in the proposed Rules and Regulations attached:

- Remove any fertilizer application date restrictions for organic fertilizer. Application date restrictions will only apply to non-organic nitrogen fertilizers.
- Allow minimal levels of non-organic nitrogen fertilizer, less than 40 lbs/acre total, to be applied directly after harvest, but before the ground is frozen (this allows more time to apply and incorporate higher phosphate based fertilizers).
- Revise minimum well spacing requirement of 600 feet to apply between new high capacity wells and any other registered well. This prevents new domestic wells from having to be 600 feet apart from other registered domestic wells.

Management recommends that the Subcommittee recommend to the Board that the following resolution be adopted:

WHEREAS Natural Resources Districts have the legal authority to regulate groundwater in the State of Nebraska pursuant to Neb. Rev. Stat. § 46-702; and

WHEREAS Natural Resources Districts have the authority to promulgate rules and regulations to discharge their duties assigned under the Nebraska Ground Water Management and Protection Act to conserve groundwater resources; and

WHEREAS the Papio-Missouri River Natural Resources District proposes amendments to the current Groundwater Rules and Regulations to implement controls set forth in the proposed Groundwater Management Plan; and

WHEREAS the Papio-Missouri River Natural Resources District actively solicited public comment and input on the proposed rules and regulations and has noticed and conducted multiple public hearings in compliance with Neb. Rev. Stat. §§ 46-708 and 46-743.

WHEREAS the Papio-Missouri River Natural Resources District incorporated the information and input from the public in the proposed amendments to the Groundwater Rules and Regulations.

BE IT RESOLVED, that the proposed amendments to the Groundwater Rules and Regulations be adopted and approved and be shall incorporated into Appendix N of the District's Directors Policy Manual.

Appendix N

Draft Final Papio-Missouri River Natural Resources District Groundwater Rules and Regulations

First Adopted: November 6, 1975

Revision 1: July 9, 2009

Revision 2: November 13, 2014

Revision 3: December 11, 2014

Current: March 1, 2018

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Exhibit C	Description of Phase Two Groundwater Quality Management Area(s)
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Exhibit E	Description of Level Two Groundwater Quantity Management Area(s)
Exhibit F	Description of Level Three Groundwater Quantity Management Area(s)

1. AUTHORITY FOR ISSUING AND ENFORCEMENT OF THESE RULES AND REGULATIONS

Nebraska Revised Statutes (Neb. Rev. Stat.) § 46-701 through § 46-756 is known as the Nebraska Ground Water Management and Protection Act (NGMPA). In the declaration of intent and purpose, the Nebraska Legislature granted legal authority to the Natural Resources Districts (NRDs) to regulate certain activities that contribute to groundwater depletion. The Papio-Missouri River Natural Resources District (District) established its first Groundwater Management Rules and Regulations in November 6, 1975, for the orderly implementation of the statutes. The Groundwater Management Rules and Regulations were amended in July 9, 2009, November 13, 2014, and December 11, 2014.

Following the passage of the NGMPA in 1984, each NRD was required to develop a Groundwater Management Plan (GMP). In 1985, both the Middle Missouri River NRD (Dakota County and portions of Burt County and Thurston County) and the Papio NRD (Sarpy, Douglas and Washington counties) prepared their respective GMP. The Middle Missouri NRD GMP was approved in late 1985 and the Papio NRD GMP was approved in October of 1986. When the two NRDs were merged into the Papio-Missouri River NRD (P-MRNRD) in 1989, both GMPs were merged as well into one document and approved. The GMP was subsequently reauthorized in March of 1994 to include protections for groundwater quality as well as groundwater quantity. The latest Groundwater Management Plan was completely rewritten in 2017 and reapproved on February 8, 2018.

The purposes of the Rules and Regulations as adopted and set forth herein are to stabilize, reduce, and prevent the increase or spread of groundwater contamination and/or the prevention of groundwater storage depletion. By adopting these Rules and Regulations, the Board of Directors of the District endeavors to meet the goal of water sustainability as described in the Groundwater Management Plan.

The District shall enforce these rules and regulations adopted herein pursuant to and in accordance with the enforcement procedures provided in the NGMPA. Any landowner, not satisfied with a determination by District management, may request to address the District Board of Directors, or request a hearing as provided herein.

1.1 General Provisions for Enforcement

The District shall enforce the provisions of Neb. Rev. Stat. § 46-702 through 46-754 and all rules and regulations adopted pursuant thereto by the issuance of cease and desist orders in accordance with the procedure hereinafter specified and by bringing appropriate actions in the District Court of the County in which any violations occur for enforcement of such orders. Cease and desist orders may be issued for the following reasons:

- (a) Operation of an irrigation system in a manner that allows for inefficient and improper groundwater irrigation runoff as defined in Section 2 of these rules and regulations.
- (b) Construction or operation of an illegal well as defined in Section 2 of these rules and regulations
- (c) Violation of these rules and regulations

1.2 Inspections

Any person who owns, rents, or leases land within or immediately adjacent to the boundaries of the District, any person who resides within the District, the Board of an adjacent District or a Board member or staff member of the District may request an inspection of a groundwater user alleging a violation of these rules and regulations or that such groundwater user is constructing or operating an illegal well. Within a reasonable period of time, but in any event, not later than five (5) days following the inspection request exclusive of Saturdays, Sundays, and legal holidays, the land where the alleged violation occurred shall be inspected by a person designated by the District. The District compliance inspector, upon proper identification and after informing the person in control of the land of the inspector's purpose, is authorized to enter upon the land for the purposes of making an inspection of the alleged violation. Entry upon any property for the purpose of the above-described inspections shall not be considered trespass and damages are not recoverable on that account alone pursuant to Neb. Rev. Stat. § 2-3232. Within 30 days of the inspection, the inspector shall file a report of the inspector's findings in the District office. A copy of said report shall be delivered to the alleged violator and to the complainant, if other than the Board, in person, or at their places of residence, or shall be sent to them by registered or certified mail.

1.3 District Enforcement Actions

Prior to issuing a cease and desist order against a public water supplier as defined in Neb. Rev. Stat. § 46-638, the District shall consult with the Attorney General. If the Attorney General determines that the District does not have sufficient grounds to issue a cease and desist order, the District shall abide by such determination and shall not issue a cease and desist order. The Attorney General shall have exclusive authority to enforce actions against public water suppliers.

1.3.1 If the District compliance inspector finds there is reasonable cause to believe that a groundwater user is at the time of inspection or at the time the inspection request was received, to be in violation of these rules and regulations or constructing or operating an illegal well; the District shall take one or more of the following actions:

- 1.3.1.1 Seek voluntary compliance by the alleged violator
- 1.3.1.2 Send alleged violator a certified or registered letter notifying them that they have until a specified date to submit the required report, information, or undertake and complete the required corrective action
- 1.3.1.3 Send alleged violator a certified or registered letter requesting attendance at a special hearing, committee meeting, or board meeting of the District and to provide required reports, information, or undertake and complete the required corrective action
- 1.3.1.4 Send alleged violator a certified or registered letter allowing the alleged violator seven (7) days upon receipt of that letter to request a hearing before the Board and allowed to present evidence on their behalf
- 1.3.1.5 As stated in Neb. Rev. Stat. § 46-707 (1h), the District may issue cease and desist orders, following a three (3) day notice to the alleged violator stating the

contemplated action and in general, the grounds for the action and following reasonable opportunity to be heard, to enforce any of the provisions of the act or of orders or permits issued pursuant to the act, to initiate suits to enforce the provisions of orders issued pursuant to the act, and to restrain the construction of illegal water wells or the use of water from illegal water wells.

- 1.3.2 If any schedule of compliance or work order approved by the Board is not initiated as agreed to or is not being properly and timely carried out, unless due to circumstances beyond the control of the alleged violator, the Board may authorize immediate initiation of appropriate litigation.

1.4 Violation of Cease and Desist Orders

- 1.4.1 If any person, with the exception of public water suppliers, violates a cease and desist order issued by the District pursuant to Neb. Rev. Stat. § 46-707 the District may seek judicial enforcement of the order, including assessment of civil penalties pursuant to Neb. Rev. Stat. § 46-745.
- 1.4.2 Any person, with the exception of public water suppliers, who violates any cease and desist order issued by the District pursuant to Neb. Rev. Stat. § 46-707 or any control, rules, or regulations adopted by a natural resources district in relation to a management area shall also be subject to the imposition of penalties imposed through the controls adopted by the District, including, but not limited to, having any allocation of water granted or irrigated acres certified by the District reduced in whole or in part. Before the District takes any action, notice and hearing shall be provided to such person

1.5 Violation of other Provisions

- 1.5.1 If any person violates any of the provisions of Neb. Rev. Stat. § 46-721 to 46-733 for which a penalty is not otherwise provided, other than the requirements imposed on the District, the Director of Natural Resources, or the Nebraska Department of Natural Resources, the District may seek judicial enforcement of the provision including assessment of a civil penalty pursuant to Neb. Rev. Stat. § 46-746-(2).

2. DEFINITIONS

Abandoned Water Well means any water well (1) the use of which has been accomplished or permanently discontinued, (2) which has been decommissioned as described in the rules and regulations of the Department of Health and Human Services Regulation and Licensure, and (3) for which the notice of abandonment required by Neb Rev. Stat. § 46-602(2) has been filed with the Nebraska Department of Natural Resources by the licensed water well contractor or pump installation contractor who decommissioned the water well or by the water well owner if the owner decommissioned the water well.

Act means the Nebraska Ground Water Management and Protection Act as codified in Neb. Rev. Stat. § 46-701 to 46-754.

Acre-inch means the amount of water necessary to cover an acre of land one inch deep.

Active status water well means a water well that is in use and that is not an illegal water well.

Alleged violator means any person who has failed to abide by the rules and regulations adopted by the District.

Allocation, as it relates to water use for irrigation purposes, means the allotment of a specified total number of acre-inches of irrigation water per irrigated acre per year or an average number of acre-inches of irrigation water per irrigated acre over any reasonable period of time.

Annual Evaluation means the “Annual Evaluation of Availability of Hydrologically Connected Water Supplies”, published by the Nebraska Department of Natural Resources.

Aquifer means a geological formation, group of formations, or part of a formation of water-bearing material having pores or open spaces capable of yielding a quantity of water significant enough to be extracted.

Beneficial use means that use by which water may be put to use to the benefit of humans or other species.

Best Management Practices (BMPs) means schedules of activities, maintenance procedures, and other management practices utilized for purposes of irrigation efficiency, to conserve or effect a savings of groundwater, or to prevent or reduce present and future contamination of groundwater. Best management practices relating to contamination of groundwater may include, but not be limited to, irrigation scheduling, proper rate and timing of fertilizer application, and other fertilizer and pesticide management programs. In determining the rate of fertilizer application, the District shall consult with the University of Nebraska or a certified crop advisor certified by the American Society of Agronomy.

Board means the board of directors of the District.

Certified irrigated acres means the number of acres or portion of an acre that the District has approved for irrigation from groundwater in accordance with law and with rules adopted by the District.

Commence construction of a water well means the beginning of the boring, drilling, jetting, digging, or excavating of the actual water well from which groundwater is to be withdrawn.

Confined aquifer means groundwater that is confined under pressure greater than atmospheric by overlying relatively impermeable strata. Confined aquifers are also known as artesian or pressure aquifers.

Consumptive use means the amount of water that is consumed under appropriate and reasonably efficient practices to accomplish the beneficial use without waste for which the appropriation or other legally permitted use is lawfully made.

Contamination of groundwater means nitrate, nitrogen or other material which enters the groundwater due to action of any person and causes degradation of the quality of groundwater

sufficient to make such groundwater unsuitable for present or reasonably foreseeable beneficial uses.

Decommission means the act of filling, sealing and plugging of a water well cavity in accordance with the rules and regulations adopted pursuant to the Water Well Standards and Contractors' Licensing Act.

Dewatering well means a well constructed and used solely for the purpose of lowering the groundwater table elevation.

Domestic Well means a well constructed and used for human needs as it relates to health, fire control, and sanitation and shall include the use of ground water for domestic livestock as related to normal farm and ranch operations, or for irrigation of lands not exceeding a total of two acres in area.

District means the Papio-Missouri River Natural Resources District operating pursuant to Neb. Rev. Stat. § 2-3203.

Flowmeter means a device of type and design approved by the District and installed in connection with the use of a groundwater well that, when properly installed, measures the total quantity and rate of groundwater withdrawn.

Good cause shown means a reasonable justification for granting a variance for a consumptive use of water that would otherwise be prohibited by rule or regulation and which the District reasonably and in good faith believes will provide an economic, environmental, social, or public health and safety benefit that is equal to or greater than the benefit resulting from the rule or regulation from which a variance is sought.

Groundwater means that water which occurs in or moves, seeps, filters, or percolates through ground under the surface of the land.

Groundwater Management Assistance Program (GMAP) means a program that provides financial (cost-share) assistance to operators, landowners, land managers, or communities or counties that plan to implement conservation practices that improve water, soil, plant, animal, air, and related natural resources. The District implements the GMAP through its policy manual.

Groundwater Reservoir means for any given area, the subsurface storage space between the water table and the base of the principal aquifer. The groundwater reservoir includes one or more aquifers and usually excludes any perched aquifers.

High capacity well means any water supply well capable of pumping greater than 50 gallons per minute.

Historically Irrigated Acres means acres irrigated with groundwater during two of the previous ten years, unless the acres were a part of a federal set aside program. Acres that were a part of a federal set aside program that were irrigated using groundwater prior to entering into the federal set aside program shall be considered Historically Irrigated Acres.

Hydrologically Connected Area means the area designated by the Nebraska Department of Natural Resources where the existing amount of groundwater and surface water has a significant influence on the other. Hydrologically Connected Areas within the District are described in Exhibit F and are on file in the District office.

Illegal water well means (a) any water well operated or constructed without or in violation of a permit required by the Nebraska Ground Water Management and Protection Act, (b) any water well not in compliance with rules and regulations adopted and promulgated pursuant to the act, (c) any water well not properly registered in accordance with Neb. Rev. Stat. § 46-602 to 46-604, or (d) any water well not in compliance with any other applicable laws of the State of Nebraska or with rules and regulations adopted and promulgated pursuant to such laws.

Improper groundwater irrigation runoff means the occurrence of surface runoff of water derived from groundwater for irrigation within the boundaries of the District.

Inactive status water well means a water well that is in a good state of repair and for which the owner has provided evidence of intent for future use by maintaining the water well in a manner that meets the following requirements: (a) The water well does not allow impairment of the water quality in the water well or of the groundwater encountered by the water well; (b) The top of the water well or water well casing has a water-tight welded or threaded cover or some other water-tight means to prevent its removal without the use of equipment or tools to prevent unauthorized access, to prevent a safety hazard to humans and animals, and to prevent illegal disposal of wastes or contaminants into the water well; (c) All entrances and discharge piping to the water well are effectively sealed to prevent the entrance of contaminants; and (d) The water well is marked so as to be easily visible and located and is labeled or otherwise marked so as to be easily identified as a water well and the area surrounding the water well is kept clear of brush, debris, and waste material.

Irrigation well means any well constructed for the purpose of irrigating more than two acres of crops or other plants.

Management area means any area so designated by a district pursuant to Neb. Rev. Stat. § 2-3203, 46-712 or 46-718, by the Director of Environmental Quality pursuant to Neb. Rev. Stat. § 2-3203, 46-725, or by the Interrelated Water Review Board pursuant to Neb. Rev. Stat. § 2-3246-719. Management area includes a control area or a special groundwater quality protection area designated prior to July 19, 1996.

Management plan means a groundwater management plan developed by the District and submitted to the Director of Natural Resources for review pursuant to Neb. Rev. Stat. § 46-711.

Maximum Contaminant Levels or MCLs are standards that are set by the United States Environmental Protection Agency (EPA) for drinking water quality. An MCL is the legal threshold limit on the amount of a substance that is allowed in public water systems under the Safe Drinking Water Act.

Monitoring well means a water well that is designed and constructed for the purpose of monitoring hydrologic or water quality information and is not intended for consumptive use.

Order, except as otherwise specifically provided, includes any order required by the Nebraska Ground Water Management and Protection Act, by rule or regulation, or by a decision adopted by the District by vote of the Board taken at any regularly scheduled or specially scheduled meeting of the Board.

Operator means a person, partnership, association, corporation, municipality or other entity that operates irrigated or dryland properties for the production of agricultural, horticultural, silvicultural, nursery products or aquaculture.

Permit means a document obtained, in accordance with the Nebraska Ground Water Management and Protection Act and these rules and regulations, authorizing the construction or modification of a water supply well or its use.

Person means a natural person, a partnership, a limited liability company, an association, a corporation, a municipality, an irrigation district, an agency or a political subdivision of the state, or a department, an agency, or a bureau of the United States.

Point source means any discernible, confined, and discrete conveyance, including, but not limited to, any pipe, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, vessel, other floating craft, or other conveyance, over which the Nebraska Department of Environmental Quality has regulatory authority and from which a substance which can cause or contribute to contamination of groundwater is or may be discharged.

Replacement well means a well constructed for the purposes of replacing an existing well that has been properly de-commissioned and extracts groundwater for the same beneficial use or for irrigating Historically Irrigated Acres in the District.

Saturated Thickness means the vertical height of a hydrogeologically defined aquifer unit in which the pore spaces are 100 percent saturated with water. For unconfined, unconsolidated aquifers, the saturated thickness is equal to the difference in elevation between the bedrock surface and the water table.

Static Water Level (SWL) means the level at which water stands in a water well when no water is being removed from the aquifer. SWL is expressed as the distance from the ground surface or measuring point near the ground surface to the water level in the well.

Test hole means a hole designed solely for the purposes of obtaining information on hydrologic or geologic conditions.

Totalizers means a device of type and design approved by the District and installed in connection with the use of a groundwater well that, when properly installed, measures the total quantity and rate of groundwater withdrawn. Totalizers measure the amount of water that flows through a pipe. By recording the results of the totalizer and dividing the amount over a quantity of time, the average flow rate can be determined.

Variance means (a) an approval to deviate from a restriction imposed under subsection (1), (2), (8), or (9) of Neb. Rev. Stat. § 46-714 or (b) the approval to act in a manner contrary to existing rules or regulations from a governing body whose rule or regulation is otherwise applicable.

Water supply well means a well constructed and used to produce water.

Water well means any excavation that is drilled, cored, bored, washed, driven, dug, jetted, or otherwise constructed for the purpose of exploring for groundwater, monitoring groundwater, utilizing the geothermal properties of the ground, obtaining hydrogeologic information, or extracting water from or injecting fluid into the groundwater reservoir.

Wellhead protection area (WHPA) means the surface and subsurface area surrounding a water well or well field, supplying a public water system, through which contaminants are reasonably likely to move toward and reach such water well or well field.

3. GROUNDWATER RESERVOIRS

As described by the United States Geologic Survey (USGS) (McGuire et al 2012) and adopted in the District Groundwater Management Plan (GMP) (Olsson 2017), the District has designated two alluvial aquifer reservoirs: the Missouri River Reservoir and the Platte/Elkhorn Reservoir. The Missouri River Reservoir encompasses the Missouri River alluvial aquifer that is located within the floodplain of the Missouri River. The USGS combined the Elkhorn River and Platte River stream valley aquifers into one; therefore, to remain consistent, the two were combined into the Platte/Elkhorn Reservoir in the GMP and for the Groundwater Rules and Regulations. The Missouri River and Platte/Elkhorn reservoirs are the most productive aquifers within the District.

For the rest of the District, outside the Missouri, Platte and Elkhorn alluvial aquifers, wells are completed in either isolated alluvial aquifers or within deeper bedrock formations. The upland alluvial aquifer area is delineated as an area instead of as a reservoir because the alluvial aquifers that occur in the upland area are isolated and discontinuous. In areas where the alluvial aquifers are not productive, wells are completed in the underlying bedrock formations. Most of these bedrock wells are completed in the sandstone units of the Dakota Formation and a limited number are completed in Carlile Shale, Greenhorn Limestone, and Graneros Shale. Even fewer still within the Shawnee, Douglas, Lansing, Kansas City, and Marmaton Groups. The bedrock aquifers are collectively referred to as secondary aquifers.

The location of the two reservoirs and the upland area are illustrated in Figure 1. The secondary aquifers underlie the entire District.

4. WATER SUPPLY WELL PERMITS

4.1 Permit Application to Construct a Water Supply Well

- 4.1.1 Any person who intends to construct a water supply well in a management area in the District on land which he or she owns or controls shall, before commencing construction, apply to the District for a permit on forms provided by the District, except that no permit shall be required for test holes or dewatering wells with an intended use of ninety days or less. A permit is required everywhere in the District for water supply wells designed and constructed to pump greater than fifty gallons per minute. A permit is required for water wells defined by the District to be replacement water wells. A

- permit is required for a water supply well designed and constructed to pump fifty gallons per minute or less if such water well is commingled, combined, clustered, or joined with any other water well or wells or other water source, other than a water source used to water range livestock. Such wells shall be considered one water supply well and the combined capacity shall be used as the rated capacity. A permit is not required for water supply wells designed and constructed to pump fifty gallons per minute or less. Forms are available at the District's office and at such other places as the District may deem appropriate. The District shall review such application and issue or deny the permit, with or without well permit conditions, within thirty (30) days after the application is filed.
- 4.1.2 A person shall apply for a permit under Section 4.1.1 before he or she modifies a water well for which a permit was not required under Section 4.1.1 into one for which a permit would otherwise be required under such subsection.
 - 4.1.3 Applications for water supply well permits for domestic, livestock, irrigation, municipal and/or industrial use must have an operator listed on the application form. The operator will be the person who shall control the operation of the domestic, livestock, irrigation, municipal and/or industrial well for which the application is being made.
 - 4.1.4 The application shall be completed online or submitted via mail by the operator or well driller and shall contain (a) the name and post office address of the applicant or applicants, (b) the nature of the proposed use, (c) the intended location of the proposed water well or other means of obtaining groundwater, (d) the intended size, type, and description of the proposed water supply well and the estimated depth, if known, (e) the estimated capacity in gallons per minute, (f) the acreage and location by legal description of the land involved if the water is to be used for irrigation, (g) a description of the proposed use if other than for irrigation purposes, (h) the registration number of the water well being replaced if applicable, (i) such other information as the District requires.
 - 4.1.5 The District hereby designates different classes of water supply well permits based on the well pumping capacity in gallons per minute or expected total annual water use.
 - a) Any person who intends to construct a water supply well, which pumps fifty gallons per minute or less, is encouraged to submit all available information about the proposed well to the District on a Class One Water Supply Well Permit application form(s) online or as provided by the District. The District will review the information submitted by the owner or installer within one week and provide feedback regarding any concerns related to well spacing, well depth, well construction, geology, or groundwater quality. Class One Water Supply Well Permit applications cannot be denied by the District for any reason and no approved permit is required to construct and operate the well.
 - b) Class Two Water Supply Well Permits are required on all water supply wells that pump greater than fifty gallons per minute and have an expected total annual water use of less than or equal to three hundred acre-feet per year.
 - c) Class Three Water Supply Well Permits are required on all water supply wells that pump greater than fifty gallons per minute and have an expected total

annual water use greater than three hundred acre-feet per year. The applicant must submit additional information on all registered wells, test holes, and all surface water rights in a five-mile radius of the proposed water use, perform a District-approved aquifer pump test, and demonstrate the impacts from the proposed pumping on existing water users through the use of a groundwater flow model such as MODFLOW software or a similar software program approved by the District and as specified on the water supply well permit application form, and must submit a five-hundred dollar fee for District review.

- d) If proposed changes in operation, based on the well pumping capacity in gallons per minute, number of acres being irrigated, or expected total annual water use would place the existing class of well permit into a different class, the owner and/or operator will need to apply for a new well permit prior to commencement of new operations.
- e) If changes in the beneficial use of water as listed on the original water supply well permit are proposed (such as changes from an industrial use to agricultural irrigation use) the owner and/or operator shall apply for a new water supply well permit to the District prior to commencement of those new water uses. District review fees for Class Three Water Supply Well Permits may be waived, but will be determined on a case-by- case basis.

- 4.1.6 Any person who has failed or in the future fails to obtain a water supply well permit required by section 4.1.1 or 4.1.2, shall make application for a late permit on forms provided by the District.
- 4.1.7 The application for a late permit shall be accompanied by a two-hundred-fifty-dollar fee payable to the District, and shall contain the same information required in 4.1.4.
- 4.1.8 The District may place conditions on approval of a water supply well permit such as installing a District approved flow meter, time totalizer, monitoring equipment to measure groundwater levels, requiring water quality sampling, specify reporting requirements to the District, or that new or replacement water wells to be used for domestic or other purposes shall be constructed to such a depth that they are less likely to be affected by seasonal water level declines caused by other water wells in the same area. For new water uses on all Class Two or Class Three water supply well permits approved in hydrologically connected areas and issued by the District on or after five years following adoption of these rules and regulations, or March 1, 2023, the District shall impose a well permit condition that a District-approved flow meter be properly installed and recalibrated every four years to provide an accurate flow measurement on each permitted water supply well in the District, and to report to the District by January 31 the total gallons or total acre inches pumped by that well in the previous year. If water is commingled from more than one water source, the flow meter may alternatively be placed at a central location thru which all water will pass before delivery to the prescribed water use location as stated in the water supply well permit application. The well owner will allow access to the well when it is running by District personnel to take a flow measurement.

- 4.1.9 The District may close all or a portion of a management area to the issuance of additional water supply well permits or may condition the issuance of additional water supply well permits on compliance with other rules and regulation adopted and promulgated by the District to achieve the purpose or purposes for which the management area was designated.
- 4.1.10 A permit issued shall specify all regulations and controls adopted by the District relevant to the construction or utilization of the proposed water supply well. No refund of any application fees shall be made regardless of whether the permit is issued, cancelled, or denied. The District shall transmit one copy of each permit issued to the Director of Natural Resources.

4.2 Denial of Water Supply Well Permit

- 4.2.1 An application for a permit or late permit for a water supply well in a management area shall be denied only if the District finds (a) that the location or operation of the proposed water supply well would conflict with any regulations or controls adopted by the District, (b) that the proposed use would not be a beneficial use of water, or (c) in the case of a late permit only, that the applicant did not act in good faith in failing to obtain a timely permit. The District will not issue a permit for any water supply well to be located within fifty feet of the bank of a channel of any natural stream, as such groundwater withdraw may have a direct effect on the surface flow of such stream, unless it has been reviewed and approved by the Nebraska Department of Natural Resources, pursuant to Neb. Rev. Stat. § 46-636 and 46-637.
- 4.2.2 If the District finds that the application is incomplete, defective, or additional information is required to process the application, it shall return the application for correction. The District may return the application for additional information if the District determines that adverse impacts to the environment or to existing users may occur if the application is granted. If the correction is not made within sixty (60) days, the application shall be cancelled. All permits shall be issued with or without conditions attached or denied not later than thirty (30) days after receipt by the District of a complete and properly prepared application.

4.3 Issuance of Water Supply Well Permit

The issuance by the District of a water supply well permit pursuant to Section 4.1 of these rules and regulations or registration of a water well by the Director of Natural Resources pursuant to Neb. Rev. Stat. § 46-602 shall not vest in any person the right to violate any District rule, regulation, or control in effect on the date of issuance of the permit or the registration of the water supply well or to violate any rule, regulation, or control properly adopted after such date.

4.4 Construction of Water Supply Well After Issuance of Permit

When any permit is approved by the District, the applicant shall commence construction as soon as possible after the date of approval and shall complete the construction and equip the water supply well prior to the date specified in the conditions of approval, which

date shall be not more than one year after the date of approval, unless it is clearly demonstrated in the application that one year is an insufficient period of time for such construction. If the applicant fails to complete the project under the terms of the permit, the District may withdraw the permit.

- 4.5 Time Limit on Full Water Utilization from Water Supply Well as listed in Approved Permit
After completion of the water supply well, the owner and/or operator has until the end of the following calendar year to purchase and install all equipment necessary to irrigate all land listed in the water supply well permit. If the owner or operator fails to purchase and install equipment by December 31st of the following year, then the permit shall be modified to list the acres actually irrigated. The District may grant an exception for good cause shown.

4.6 Replacement Water Wells

Replacement wells as defined in Section 2 will require a permit application to the District before the well is constructed.

4.7 Decommission of Water Wells

The District shall require decommissioning of water wells that are not properly classified as active status or inactive status water wells, or are considered an illegal water well, as defined in Section 2.

5. GROUNDWATER IRRIGATION RUNOFF

5.1 Groundwater Irrigation Runoff

- 5.1.1 Each person within the District who withdraws groundwater for irrigation purposes from any well shall take such measures and implement such procedures as needed to prevent the water from such well from inefficiently and improperly flowing as runoff from the tract of land being irrigated.
- 5.1.2 Runoff of groundwater used in irrigation shall be deemed to be inefficient and improper when any quantity of water shall flow from the field being irrigated while the well withdrawing such groundwater shall be in operation.
- 5.1.3 Procedures to prevent, control and abate inefficient and improper runoff may include self-imposed limitations on groundwater withdrawals.
- 5.1.4 Measures for the construction, modification, extension, or operation of remedial measures to prevent, control, or abate runoff of groundwater used in irrigation may include:
- 5.1.4.1 Construction of a runoff collection and/or retention system such as a sump or dugout, together with a reuse pump and/or ditch to return the water to the same or other field, and,
- 5.1.4.2 Blocking of rows or field borders to contain irrigation water within the tract of land being irrigated.

- 5.1.5 The District shall enforce these rules and regulations by the issuance of cease and desist orders as required in Section 1.3, and by the utilization of such other remedies for enforcement as may be provided by law.

5.2 Agreements Between Groundwater Users for Irrigation Runoff Water

Groundwater users whose irrigation runoff water is capable of being captured and utilized by another groundwater user or other person in a manner which will prevent waste and provide practical and efficient use of such water, to prevent deterioration of surface water quality, and to prevent accumulation of water upon the land of any other person without their consent may have such water excluded from the definition of improper groundwater irrigation runoff water by submitting to the District an agreement providing for such capture and utilization signed by all affected parties, on forms provided by the District. When such agreement is approved by the District, it will indicate the District's concurrence that the groundwater user's irrigation runoff water is under adequate control. Such agreement may be terminated at any time by either party or by the District whenever it determines that such agreement no longer prevents or controls improper groundwater irrigation runoff water. If the District terminates the agreement, written notice shall be provided to both parties. If either of the parties to the agreement causes termination of the agreement, written notice shall be provided to the other party and to the District.

6. PHASE ONE GROUNDWATER QUALITY MANAGEMENT AREA DESIGNATION AND RULES

A Phase One Groundwater Quality Management Area is hereby established for the entire District. The following rules and regulations apply:

- 6.1 Applications of non-organic nitrogen (N) fertilizer with less than forty pounds per acre of nitrogen will be allowed in non-hydrologically connected areas after harvest and before November 1. Non-organic nitrogen-fertilizer applications with greater than forty pounds per acre of nitrogen, such as anhydrous ammonia, will only be allowed on non-hydrologically connected areas after November 1. The use of an approved inhibitor is encouraged on all non-organic nitrogen fertilizer applications.
- 6.2 Applications of non-organic nitrogen (N) fertilizer with less than forty pounds per acre of nitrogen will be allowed in hydrologically connected areas after harvest and before December 1. No non-organic nitrogen-fertilizer applications will be allowed in hydrologically connected areas between December 1 and March 1.
- 6.3 All operators in Phase One Groundwater Quality Management Areas within the District, who use any type of fertilizer, either commercial or organic, are encouraged to attend Nutrient Management education classes that are taught by a qualified instructor from the District or other state agency once every four (4) years. Education classes will be consistent with the District's chemigation program and applicable to the training

requirement under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) program.

6.4 All operators are encouraged to submit a Fertilizer Application Report which indicates the pounds per acre of non-organic and organic nitrogen (N) fertilizer applied to each field greater than 20 acres in size under their control, to the District on a form provided by the District at least once every four years. Reporting the quantity (in pounds per acre) of pesticides applied for each field will also be encouraged. Such reports will incorporate, if applicable, those reports required under the District's chemigation program and such reporting requirements resulting from the implementation of FIFRA.

6.4.1 All operators are encouraged to test for nitrogen (nitrate-nitrogen) content in irrigation, municipal, domestic and industrial wells at least once every four years using the District's approved analysis methods. Results should be submitted by the operator to the District by December 31 of the year tested.

6.4.2 All operators are encouraged to obtain a soil analysis (3 feet in depth) for nitrogen (nitrate-nitrogen) content for each field greater than 20 acres in size, prior to the planting of corn, potatoes, or grain sorghum, at least once every four years. District approved analysis methods should be used, and results are encouraged to be submitted to the District by December 31 of the year tested.

6.5 Every municipality or public water supplier is encouraged to prepare and implement a Wellhead Protection Area (WHPA) plan(s) with technical assistance provided by the District.

6.6 Drinking water well owners are encouraged to test their well for contaminants once a year as per EPA recommendations.

7. PHASE TWO GROUNDWATER QUALITY MANAGEMENT AREA DESIGNATION AND RULES

A Phase Two Groundwater Quality Management Area is established when the concentration of greater than 5 parts per million (ppm) of nitrate (or greater than 50 percent of any maximum contaminant level (MCL)) is documented as described in this section. Phase Two Groundwater Quality Management Areas are hereby designated for the area(s) illustrated in Figure 2 and described in Exhibit B.

Specifically, within the same groundwater reservoir, boundary setting for Phase Two Groundwater Quality Management Areas will be initiated when water quality analytical results, within a minimum 9-square mile area, are at identified contaminant trigger levels for a minimum of 3 consecutive sampling events. The 9-square mile area must contain a minimum of 10 registered wells and contaminant trigger levels must be exceeded in over 50 percent of the samples. When registered wells are not available, other wells may be used. Initial investigation by the District will be to determine if the contamination is a result of point-source or non-point source pollution. If a wellhead protection area should be established due to non-point source pollution, the District may set boundaries that are less than 9-square miles. After the establishment of a Phase Two Groundwater Quality Management Area, if non-point source contamination levels should decline, three consecutive sampling events below the trigger

levels are needed before the area can be designated as a Phase One Groundwater Quality Management Area.

For Phase Two Groundwater Quality Management areas, all Phase One Groundwater Quality Management Area rules apply in addition to the following rules and regulations:

- 7.1 Applications of non-organic nitrogen (N) fertilizer with less than forty pounds per acre of nitrogen will be allowed in non-hydrologically connected areas after harvest and before November 1. Non-organic nitrogen-fertilizer applications with greater than forty pounds per acre of nitrogen, such as anhydrous ammonia, will only be allowed on non-hydrologically connected areas after November 1, provided that an approved inhibitor is used and applied as recommended prior to March 1. Applications of N fertilizer in Phase Two Groundwater Quality Management Areas after November 1 must be a split application with 80 percent or less applied before March 1 and the remaining 20 percent or more applied after March 1. After March 1, an inhibitor is not required. In order to assure use of an approved inhibitor, the operator will be required to furnish the District with the record from a fertilizer dealer that a District-approved inhibitor was used and applied at recommended rates. This record shall accompany the Annual Fertilizer Application Report made to the District by December 31 of each year.
- 7.2 Applications of non-organic nitrogen (N) fertilizer with less than forty pounds per acre of nitrogen will be allowed in hydrologically connected areas after harvest until December 1. No non-organic nitrogen-fertilizer applications will be allowed in hydrologically connected areas between December 1 and March 1.
- 7.3 Require fertilizer and irrigation management certification
 - 7.3.1 All operators in Phase Two Groundwater Quality Management Areas within the District, who use any type of fertilizer, either commercial or organic, are required to attend Nutrient Management education classes and satisfactorily complete a written exam, administered by a qualified instructor from the District or other state agency, to become Nutrient Management Certified once every four (4) years. The Nutrient Management Certification program will be consistent with the District's chemigation program and applicable to the training requirement under FIFRA.
- 7.4 Require annual nitrogen management plan, groundwater nitrate testing, soil sampling in root zone, and fertilizer application report
 - 7.4.1 A groundwater analysis for nitrogen (nitrate-nitrogen) content for all irrigation, municipal, and industrial wells must be made annually and reported by the operator to the District by December 31 of each year. This rule is waived for wells that are on inactive status as defined in Nebraska State Statutes.
 - 7.4.2 Prior to the planting of corn, potatoes, or grain sorghum, annual soil samples in the root zone, 3 feet in depth, for nitrogen (nitrate-nitrogen) content on each field at least 20 acres in size are required for Phase Two Groundwater Quality Management Areas. The results of the soil samples will accompany the annual report made to the District by December 31 of each year.
 - 7.4.3 All operators will submit an Annual Fertilizer Application Report to the District for each field 20 acres in size or larger in a Phase Two Groundwater Quality Management Area,

- by December 31 following each crop year. A nitrogen management plan for the following calendar year will be submitted at the same time as the Annual Fertilizer Application Report for each field greater than 20 acres in size in a Phase Two Groundwater Quality Management Area. Submittal will be on a form(s) developed by the District. Reporting of the application of pesticides will be encouraged on this form.
- 7.4.4 Operators are required to submit an Annual Fertilizer Application Report, on a form provided by the District, to document the pounds per acre of organic nitrogen (N) fertilizer applied on each field greater than 20 acres in size by December 31 of each year organic fertilizer is applied. Application of organic fertilizer (liquid manure, dried manure, sludge or composted organic waste) is very diversified and poses management problems relative to the size of the operation. Not all organic waste contains the same amount of N per unit of measurement, as such the amount/acre/year allowed to be applied in Phase Two Groundwater Quality Management Areas will be based on the operator's method of collection and storage, land application method, types of crops or cover crop, soil types, landscape features, source of manure, and previous manure application rates.
- 7.5 Each municipality or public water supplier in a Phase Two Groundwater Quality Management Area with an existing wellhead protection area is encouraged to prepare and implement a wellhead protection area plan(s) in accordance with Nebraska Department of Environmental Quality (NDEQ) requirements.

8. PHASE THREE GROUNDWATER QUALITY MANAGEMENT AREA DESIGNATION AND RULES

A Phase Three Groundwater Quality Management Area is established if a concentration of greater than 8 ppm of nitrate (or greater than 80 percent of any maximum contaminant level (MCL)) is documented as described in this section. Phase Three Groundwater Quality Management Areas are hereby designated for the area(s) described in Exhibit C.

Specifically, within the same groundwater reservoir, boundary setting for Phase Three Groundwater Quality Management Areas will be initiated when water quality analytical results within a minimum 9-square mile area are at identified contaminant trigger levels for a minimum of 3 consecutive sampling events. The 9-square mile area must contain a minimum of 10 registered wells and contaminant trigger levels must be exceeded in over 50 percent of the samples. When registered wells are not available, other wells may be used. Initial investigation by the District will be to determine if the contamination is a result of point-source or non-point source pollution. If non-point source pollution is found to be the reason, more intensive investigation for boundary setting will ensue. If a wellhead protection area (WHPA) should be established due to non-point source pollution, the District may set boundaries that are less than 9-square miles. After the establishment of a Phase Three Groundwater Quality Management Area, if non-point source contamination levels should decline, two consecutive sampling events below the trigger levels are needed before the area can be designated as a Phase Two or Phase One Groundwater Quality Management Area.

For Phase Three Groundwater Quality Management areas, all Phase One and Phase Two Groundwater Quality Management Area rules apply in addition to the following rules and regulations:

- 8.1 If a municipality or public water supplier with an existing WHPA in a Phase Three Groundwater Quality Management Area does not have an NDEQ approved WHPA plan, the District may at its discretion conduct an analysis and evaluation to prepare a WHPA plan to recommend implementable actions within the WHPA to reduce the level of contamination. Specific recommended actions may be adopted and enforced by the District as new Phase Three Groundwater Quality Management Area rules and regulations.
- 8.2 No application of non-organic fertilizer will be allowed without split application and/or inhibitor.
- 8.2.1 The application of non-organic nitrogen fertilizer is prohibited after harvest until March 1 in all Phase Three Groundwater Quality Management Areas. Spring applications of non-organic nitrogen fertilizer will require split applications (pre-plant and side-dress). If a split application is used and 50 percent or more of nitrogen fertilizer is applied as a pre-plant, the use of an approved inhibitor, applied as recommended, is required. If 50 percent or more of commercial nitrogen fertilizer is applied at pre-plant, then operators are required to furnish the District a record from the fertilizer dealer that a District inhibitor was used at recommended rates. This record shall accompany the Annual Fertilizer Application report made to the District by December 31 of each year.

9. LEVEL ONE GROUNDWATER QUANTITY MANAGEMENT AREA DESIGNATION AND RULES

A Level One Groundwater Quantity Management Area is hereby established for the entire District. The following rules and regulations apply:

As more information becomes available, subareas shall be further defined.

- 9.1 Required minimum well spacing of 600 feet from any registered well
 - 9.1.1 Any new high capacity well must be located a distance of 600 feet from any existing registered water supply well in order to be permitted by the District. Replacement wells within 600 feet of an existing registered water supply well shall be allowed provided that the replacement well is equal distance or greater away than the original high capacity well was from the existing registered water supply well. Exceptions to these spacing requirements will also be considered if both parties agree to allow drilling of the new supply well without regard to minimum well spacing with submittal and approval by the Board (Application for a Special Permit to Drill a Water Well Without Regard to Minimum Spacing). Neb. Rev. Stat. § 46-608 through 46-611, 46-651, 46-653 and 46-655.01 regarding well spacing requirements shall also apply.
- 9.2 All land owners or operators of water supply wells used for irrigation or who apply irrigation on greater than two acres of land are encouraged to attend Irrigation Management

education classes that are taught by a qualified instructor from the District or other state agency once every four (4) years.

9.3 All operators are encouraged the install flow meters on all existing high capacity wells.

Operators are also encouraged to submit annual water use reporting for all existing high capacity wells to the District by January 31 of each following year.

9.4 All operators are encouraged to implement water conservation practices and measures.

10. LEVEL TWO GROUNDWATER QUANTITY MANAGEMENT AREA DESIGNATION AND RULES

A Level Two Groundwater Quantity Management Area is established if an average 10 percent decline in the saturated thickness of an unconfined aquifer in 50 percent of the wells occurs for three consecutive years. Level Two Groundwater Quantity Management Areas are hereby designated for the area(s) described in Exhibit D.

Specifically, Level Two Groundwater Quantity Management Areas are designated within the District when conditions indicate a 10 percent drop in the saturated thickness of the aquifer. Assessment of percentage drop will be calculated utilizing the spring static water level readings of District monitoring wells over a consecutive three (3) year period assessed against the running average of groundwater levels over the entire available period of record.

For Level Two Groundwater Quantity Management areas, all Level One Groundwater Quantity Management Area rules apply in addition to the following rules and regulations:

10.1 Require water meters and annual water use report

10.1.1 Flow meters or time totalizers will be required on all irrigation wells in a Level Two Groundwater Quantity Management Area to monitor water applications. If time totalizers are used, then water supply well output must be certified by the District.

10.1.2 All operators are required to submit an Annual Irrigation Application Report to the District for each field with 10 acres or more of certified irrigated acres in a Level Two Groundwater Quantity Management Area by December 31 following each crop year. Submittal will be on a form(s) developed by the District.

10.2 Require irrigation management certification

10.2.1 All land owners or operators in Level Two Groundwater Quantity Management Areas within the District who operate water supply wells used for irrigation or apply irrigation on greater than two acres of land are required to attend Irrigation Management education classes and satisfactorily complete a written exam administered by a qualified instructor from the District or other state agency once every four (4) years. The Irrigation Management Certification program will be consistent with the District's chemigation program and applicable to the State Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) program.

11. LEVEL THREE GROUNDWATER QUANTITY MANAGEMENT AREA DESIGNATION AND RULES

A Level Three Groundwater Quantity Management Area is established if an average 15 percent decline in the saturated thickness of an unconfined aquifer in 50 percent of the wells occurs for three consecutive years. Level Three Groundwater Quantity Management Areas are hereby designated for the area(s) described in Exhibit E.

Specifically, Level Three Groundwater Quantity Management Areas are designated within the District when conditions indicate a 15 percent drop or greater in the saturated thickness of the aquifer. Assessment of percentage drop will be calculated utilizing the spring static water level readings of District monitoring wells over a consecutive three (3) year period assessed against the running average of groundwater levels over the entire available period of record. When greater than 50 percent of the groundwater levels within a subarea has reached or exceeded the trigger level, then a Level Three Groundwater Quantity Management Area can be established.

For Phase Three Groundwater Quantity Management areas, all Level One and Two Groundwater Quantity Management Area rules apply in addition to the following rules and regulations:

11.1 Require acre-inch allocations

11.1.1 The District will require irrigation allocations. Allocations will be set by the Board annually.

11.2 Require reduction of irrigated acres in selected areas

11.2.1 Eliminate the use of end guns on pivots

11.3 Require implementation of two water conservation Best Management Practices.

12. GROUNDWATER TRANSFERS

12.1 Transfer Off Overlaying Land

12.1.1 A permit is required for the transfer of groundwater off overlaying land for the limited purposes set forth in 12.1.2. Upon receipt of an application for the transfer of groundwater off overlaying land, the District shall provide notice of the application by publishing it on the agenda for the next regularly scheduled Board meeting. Any affected party may object to the transfer of groundwater by filing written objections, specifically stating the grounds for such objection, in the office of the District on or before the second regularly scheduled Board meeting following publication the notice. Late objections will not be considered. Upon the filing of such objections or on its own initiative, the District shall conduct a preliminary investigation to determine if the withdrawal, transfer, and use of groundwater is consistent with the requirements of 12.1.2 and all rules and regulations of the District. Following the preliminary investigation, if the District has reason to believe that the withdrawal, transfer, and use is consistent with all rules and regulations of the District, but may not comply with one

or more other requirements of 12.1.2, the District shall request that the Nebraska Department of Natural Resources hold a hearing on such transfer.

- 12.1.2 Any person who withdraws groundwater for agricultural purposes, or for any purpose pursuant to a groundwater remediation plan as required by the Environmental Protection Agency, including the providing of water for domestic purposes, from aquifers located within the District may transfer the use of the groundwater off the overlying land if the groundwater is put to a reasonable and beneficial use within the State of Nebraska and is used for an agricultural purpose, or for any purpose pursuant to a groundwater remediation plan are required by the Environmental Protection Agency, including the providing of water for domestic purposes, after transfer, and if such withdrawal, transfer, and use (a) will not significantly adversely affect any other water user, (b) is consistent with all applicable statutes and District rules and regulations, and (c) is in the public interest.

12.2 Transfer Off Overlying Land for Domestic Use

Any person other than a public water supplier as defined in Neb. Rev. Stat. § 46-638 may transfer groundwater off the overlying land for the purpose of domestic use of groundwater required for human needs as it relates to health, fire control, sanitation, and irrigation on less than one acre of land if:

(1) the location and use of the water well and any pipeline or other means of conveyance are authorized by easement or other adequate property interest on all land on which such water well and pipeline or other means of conveyance are located and

(2) the capacity of the water well or series of water wells connected together for such purposes does not exceed fifty gallons per minute. Such person may be liable for damages for interference with the use of groundwater by another person only if the withdrawal of groundwater for such domestic use unreasonably causes harm to another person through the lowering of the water table or by reducing artesian pressure.

12.3 Transfer Off Overlying Land for Environmental or Recreational Benefits

- 12.3.1 Any person intending to withdraw groundwater from any water well located in the State of Nebraska, transport that water off the overlying land, and use it to augment water supplies in any Nebraska wetland or natural stream for the purpose of benefitting fish or wildlife or producing other environmental or recreational benefits may do so only if the District in which the water well is or would be located allows withdrawals and transport for such purposes and only after applying for and obtaining a permit from the District. An application for any such permit shall be accompanied by a non-refundable fee of fifty dollars payable to the District. Such permit shall be in addition to any permit required pursuant to Neb. Rev. Stat. § 46-252 or 46-735 or subdivision (1)(k) of Neb. Rev. Stat. § 46-739.

- 12.3.2 Prior to taking action on an application pursuant to this section, the District shall provide an opportunity for public comment on such application at a regular or special board meeting for which advance published notice of the meeting and the agenda therefore have been given consistent with the Open Meetings Act.

- 12.3.3 In determining whether to grant a permit under this section, the Board shall consider:
- (a) Whether the proposed use is a beneficial use of groundwater; (b) The availability to the applicant of alternative sources of surface water or groundwater for the proposed withdrawal, transport, and use; (c) Any negative effect of the proposed withdrawal, transport, and use on groundwater supplies needed to meet present or reasonable future demands for water in the area of the proposed withdrawal, transport, and use, to comply with any interstate compact or decree, or to fulfill the provisions of any other formal state contract or agreement; (d) Any negative effect of the proposed withdrawal, transport, and use on surface water supplies needed to meet present or reasonable future demands for water within the state, to comply with any interstate compact or decree, or to fulfill the provisions of any other formal state contract or agreement; (e) Any adverse environmental effect of the proposed withdrawal, transport, and use of the groundwater; (f) The cumulative effects of the proposed withdrawal, transport, and use relative to the matters listed in 12.3.3 (c) through (e) when considered in conjunction with all other withdrawals, transports, and uses subject to this section; (g) Whether the proposed withdrawal, transport, and use is consistent with the District's groundwater quantity and quality management plan and with any integrated management plan previously adopted or being considered for adoption in accordance with Neb. Rev. Stat. § 46-713 to 46-719; and (h) Any other factors consistent with the purposes of this section which the Board deems relevant to protect the interests of the state and its citizens.
- 12.3.4 Issuance of a permit shall be conditioned on the applicant's compliance with the rules and regulations of the District from which the water is to be withdrawn and, if the location where the water is to be used to produce the intended benefits is in a different District, with the rules and regulations of that natural resources district. The Board shall include such reasonable conditions on the proposed withdrawal, transport, and use as it deems necessary to carry out the purposes of this section.
- 12.3.5 The applicant shall be required to provide access to his or her property at reasonable times for purposes of inspection by officials of any district where the water is to be withdrawn or to be used.

13. SPECIAL STUDIES AND INVESTIGATIONS

The District shall have the authority to conduct investigations and cooperate or contract with agencies of the United States, agencies or political subdivisions of this state, public or private corporations, or any association or individual on any matter relevant to the administration of the Nebraska Ground Water Management and Protection Act. This authority will be exercised in the sole discretion of the Board.

14. CONTROLS IN THE HYDROLOGICALLY CONNECTED AREAS INDICATED BY IMP AREA

Hydrologically Connected Areas are the area designated by the Nebraska Department of Natural Resources as hydrologically connected groundwater and surface water along the Lower Platte and Lower Elkhorn River. Hydrologically Connected Areas within the District are illustrated in Figure 3 and described in Exhibit F and on file in the District office.

14.1 Require water meters in Hydrologically Connected Areas

- 14.1.1 Five years following adoption of these rules and regulations, or March 1, 2023, flow meters or time totalizers will be required on all high capacity wells in hydrologically connected areas to monitor water applications.
- 14.1.2 Five years following adoption of these rules and regulations, or March 1, 2023, all high capacity well operators will submit an Annual Water Use Report to the District by December 31. Submittal will be on a form(s) developed by the District.

14.2 Certification of Historically Irrigated Acres

- 14.2.1 The District will certify historically irrigated acres within the District and will base its initial determination using records from the County Assessor, Nebraska Department of Natural Resources registered well database, Farm Service Agency, and other records the District deems pertinent. Landowners may be required to provide Farm Service Agency (FSA) records if they disagree with the District's information.
- 14.2.2 For fields that have been certified by the District, any changes such as number of acres irrigated, location of the irrigated acres, changes in water source, or change of landowner shall be reviewed and approved by the District before those changes can take effect.

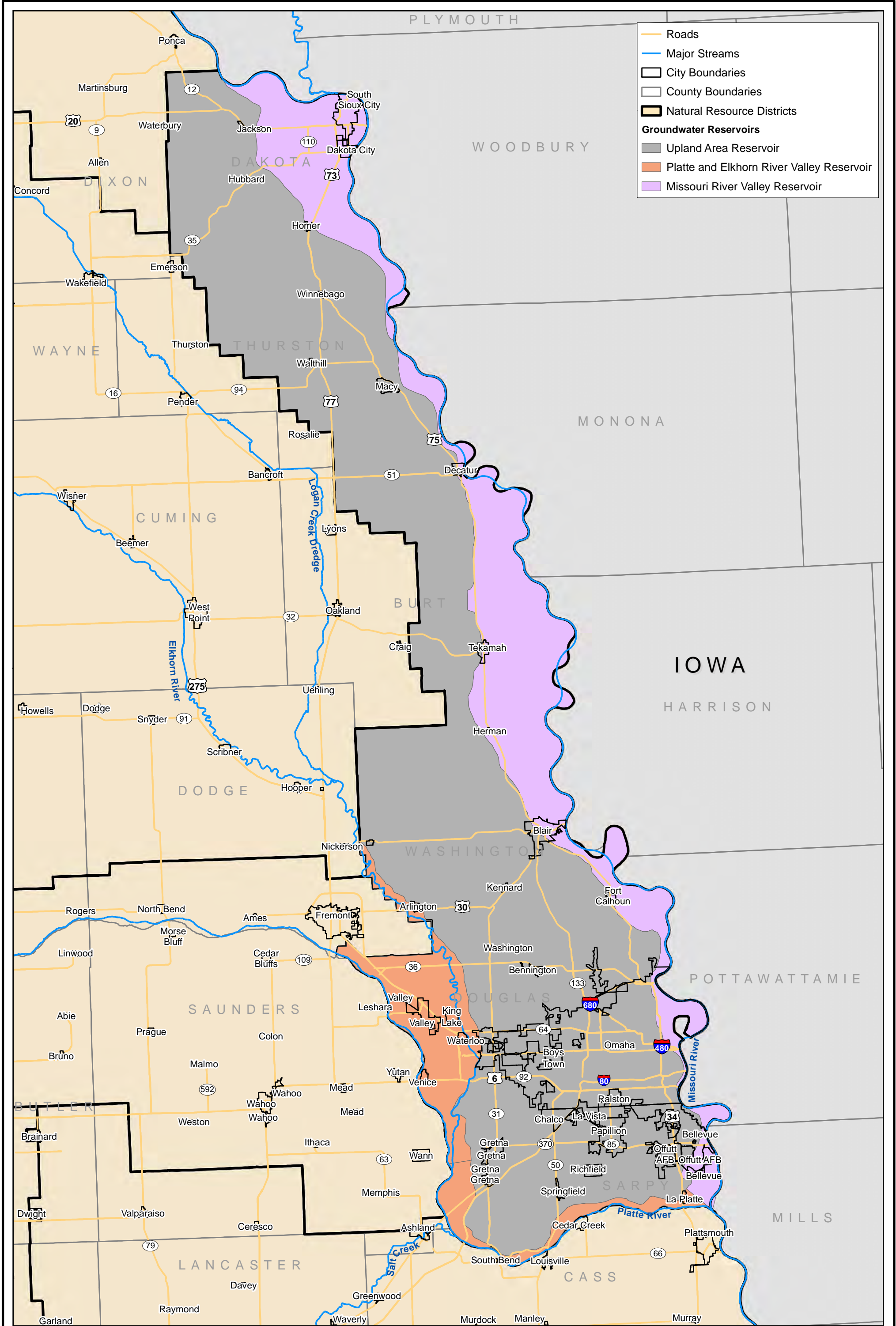
14.3 Limit on the Expansion of Groundwater Irrigated Acres and the Construction of New Irrigation Wells

- 14.3.1 Variance from the Limit on the Expansion of Groundwater Irrigated Acres and Construction of New Irrigation Wells. These rules and regulations are authorized by Neb. Rev. Stat. § 46-718 and 46-739. The purpose of these rules and regulations is to limit the expansion of irrigated acres that utilize groundwater sources within the Hydrologically Connected Area to 2,500 additional acres per year.
- 14.3.2 There shall be no additional groundwater irrigated acres, beyond those considered to be Historically Irrigated Acres, within the Hydrologically Connected Area without a variance being granted by the District.
- 14.3.3 There shall be no additional irrigation wells, not considered as Replacement Wells, constructed in the Hydrologically Connected Area without a variance being granted by the District for the expansion of groundwater irrigated acres.
- 14.3.4 Expansion of groundwater irrigation shall be done through application to the District for a variance to the imposed limit on the expansion of irrigated acres and the construction of new irrigation wells. District management shall determine the variances to be granted so as to limit expansion of irrigated acres to approximately 2,500 additional acres per year, according to time of filing.

- 14.3.5 Certification shall be completed upon submittal to the District, by the applicant, of a state well registration number for new well construction or by submittal, by the applicant, of appropriate documentation of modification to the existing irrigation well. District management shall make the determination of Certified Irrigated Acres and notify the applicant.
- 14.3.6 A variance shall be voided if the completion of the new irrigation well or other required piping and appurtenances to the existing Irrigation Well are not completed within one year of the granting of the variance. District management shall make the determination of voided application and notify the applicant.

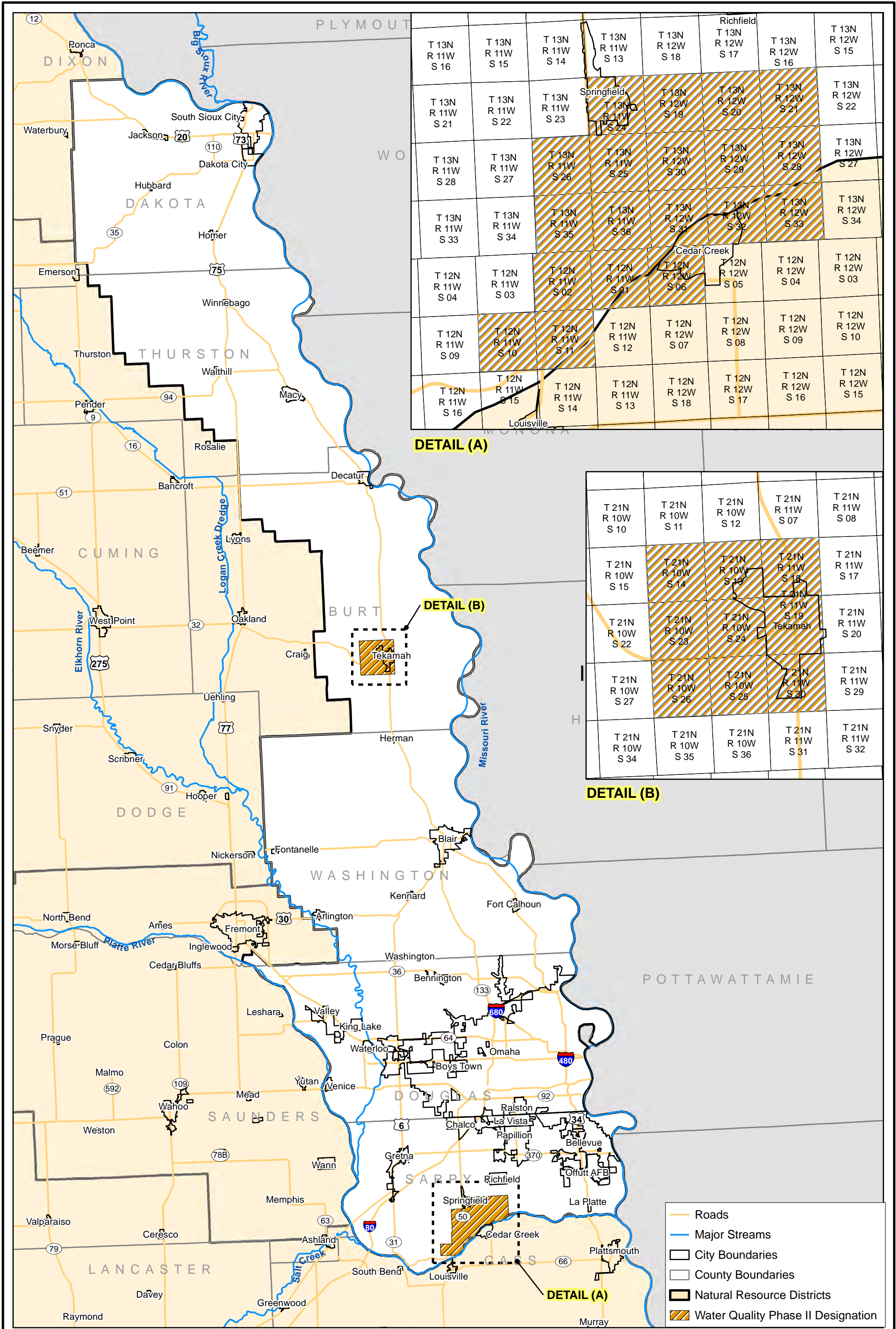
FIGURES

Figure 1 Map of Groundwater Reservoirs



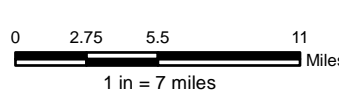
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Figure 2 Map of Phase II Areas



PROJECT: 015-3424 DATE: August 23, 2017 DRAWN BY: MKM

Sources:
NDNR: NRD Boundaries, Registered Wells
USGS: National Hydrography Dataset
U.S. Census Bureau: Roads, County Boundaries, Municipal Boundaries
HPRCC: Weather Stations; NCDC: Weather Stations



**PHASE II
GROUNDWATER MANAGEMENT AREAS
Pappio-Missouri River NRD**



FIGURE

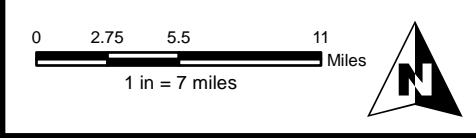
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Figure 3 Map of Hydrologically Connected Areas



PROJECT: 015-3424 DATE: August 23, 2017 DRAWN BY: MKM

Sources:
NDNR: NRD Boundaries, Registered Wells
USGS: National Hydrography Dataset
U.S. Census Bureau: Roads, County Boundaries, Municipal Boundaries
HPRCC: Weather Stations; NCDC: Weather Stations



Hydrologically Connected Area
Papio-Missouri River NRD



OLSSON
ASSOCIATES

FIGURE

3

Exhibit A

Order of Designation

To be added when designation is authorized.

Exhibit B

Description of Phase Two Groundwater Quality Management Area(s)

The Phase Two Groundwater Quality Management Area(s) is designated as the sections or portions of sections, as listed below, within the District:

Sarpy County: Township 12 North, Range 12 East, Sections 06; Township 12 North, Range 11 East, Sections 01, 02, 10; Township 13 North, Range 12 East, Sections 19, 20, 21, 28, 29, 30, 31, 32, 33; Township 13 North, Range 11 East, Sections 25, 26, 35, 36

Burt County: Township 21 North, Range 10 East, Sections 13, 14, 23, 24, 25, 26; Township 21 North, Range 11 East, Sections 18, 19, 30

Exhibit C

Description of Phase Three Groundwater Quality Management Area(s)

No area within the District is designated as a Phase Three Groundwater Quality Management Area(s).

Exhibit D

Description of Level Two Groundwater Quantity Management Area(s)

No area within the District is designated as a Level Two Groundwater Quantity Management Area(s).

Exhibit E

Description of Level Three Groundwater Quantity Management Area(s)

No area within the District is designated as a Level Three Groundwater Quantity Management Area(s).

Exhibit F

Hydrologically Connected Area Description for Certified Irrigated Acres and Construction of New Irrigation Wells

The Hydrologically Connected Area is comprised of those sections that the Nebraska Department of Natural Resources has determined to have hydrologically connected surface water and groundwater in the Annual Evaluation. The Hydrologically Connected Area is designated as the sections or portions of sections, as listed below, within the District:

Dodge County: Township 17 North, Range 08 East, Sections 25, 35, 36; Township 17 North, Range 09 East, Section 31

Douglas County: Township 14 North , Range 09 East, Section 01; Township 14 North, Range 10 East, Sections 03, 04, 05, 06, 07, 08, 09; Township 15 North, Range 09 East, Sections 01, 02, 03, 11, 12, 13, 24, 25, 36; Township 15 North, Range 10 East, Sections 02 ,03,04, 05, 06,07, 08, 09, 10, 11, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 26, 27, 28, 29,30, 31, 32, 33, 34; Township 16 North, Range 08 East, Section 01; Township 16 North, Range 09 East, Sections 01, 02, 03, 04, 05, 06, 07, 08, 09, 10, 11, 12, 13, 14, 15, 16, 21, 22, 23, 24, 25, 26, 27, 28, 33,34, 35, 36; Township 16 North, Range 10 East, Sections 04, 05, 06, 07, 08, 09, 10, 15, 16, 17, 18, 19, 20, 21, 22, 27, 28, 29, 30, 31, 32, 33,34

Sarpy County: Township 12 North, Range 10 East, Sections 03, 04, 05, 09, 10, 11, 12, 13; Township 12 North, Range 11 East, Sections 01, 02, 10, 11, 12, 14, 15, 16, 17, 18, 19, 20, 21; Township 12 North, Range 12 East, Sections 06; Township 13 North, Range 10 East, Sections 04, 05, 08, 09, 16, 17, 18, 19, 20, 21, 22, 27, 28, 29, 30, 32,33 and the West half of Sections 03, 10, 15; Township 13 North, Range 11 East, Sections 25, 36; Township 13 North, Range 12 East, Sections 25, 26, 27, 28, 29, 30, 31, 32, 33; Township 13 North, Range 13 East, Sections 03, 10, 13, 14, 15, 16, 21, 22, 23, 24,25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36; Township 13 North, Range 14 East, Sections 30, 31; Township 14 North, Range 10 East, Sections 16, 17, 20, 21, 28, 29, 32, 33;

Washington County: Township 17 North, Range 09 East, Sections 02, 03, 11, 12, 13; Township 17 North, Range 10 East, Sections 18, 20, 29, 32, 33; Township 18 North, Range 09 East, 05, 08, 17, 20, 28, 29, 33, 34.