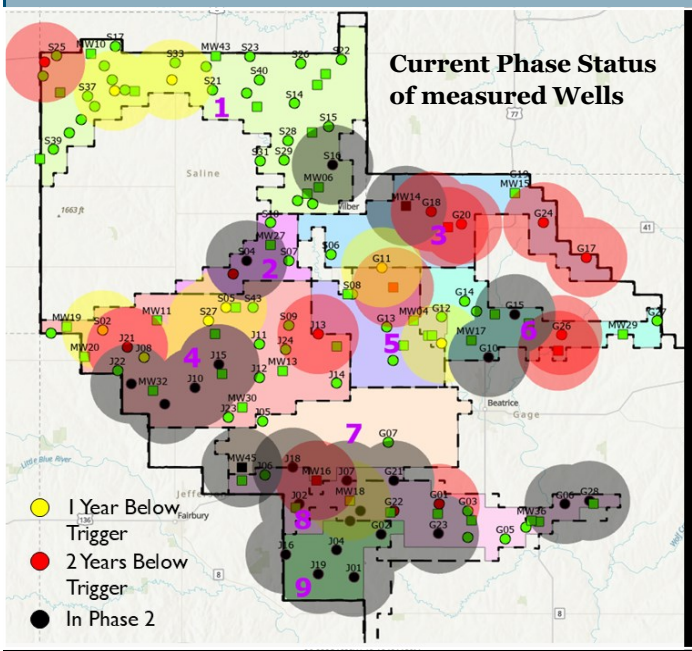
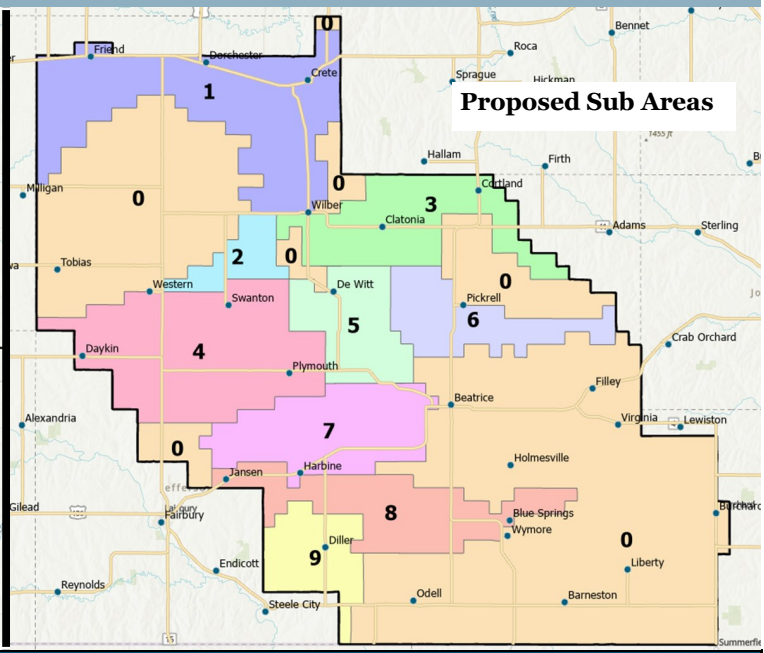
Groundwater Management
Special Edition

The Directors and Staff of the Lower Big Blue Natural Resources District continue working to proactively manage groundwater quality and quantity. Since December 2022, the Board has been working to revise its *Groundwater Quantity Rules and Regulations*. A summary of the proposed revisions is presented on the back of this page. During the comprehensive review of the groundwater controls within the Lower Big Blue, the District contracted with Olsson Inc. to study the hydrogeologic characteristics of the district. A total of 10 areas have been delineated using the best information available. Characteristics and a map of the sub areas are shown below. The District has also undertaken strategic AEM surveys of aquifer bearing material. Ultimately, the NRD intends to collect this data districtwide with the support of WSF funding, as it is incredibly useful for studying aquifer characteristics and extents for groundwater management, and is helpful to determine connectivity for understanding groundwater quality and quantity conflict implications. Over time, the District will develop a hydrogeologic framework for even better understanding and managing groundwater supplies. The map below shows the current phase status of measured wells in the district. A Phase 1 well must show spring static water level declines of 5% or 5 feet of saturated thickness for 3 consecutive years to reach Phase 2 status. **<u>As a reminder, irrigated acres in the District MUST be certified by 12/31/2024.</u>**





Summary of Sub Area Characteristics

1-Alluvial aquifer of the Big Blue River and High Plains aquifer ~174 Square Miles ~111,492 Total Acres ~59,000 Irrigated Acres	**2**-Portions of the alluvial aquifer of the Big Blue River and paleo valley aquifer ~28 square miles ~17,930 total acres ~6,600 irrigated acres	**3**-Pockets of development pump from the Crete-Princeton-Adams aquifer along the northern boundary or from the Big Blue River alluvial aquifer along the southwest boundary ~95 square miles ~60,834 total acres. ~~9,100 Irrigated Acres	**4**-Northern Jefferson and Southern Saline Counties Major paleo valley aquifer ~169 Square Miles ~108,074 total acres ~64,500 Irrigated Acres	**5**-DeWitt to Hoag Area Along Big Blue River-Major paleo valley aquifer ~63 Square Miles ~40,150 Total Acres ~ 23,218 Irrigated Acres
6-North Central Gage County (Pickrell Area) Major paleo valley aquifer ~62 Square Miles ~39,887 Total Acres ~17,238 Irrigated Acres	**7**-North Central Jefferson to Central Gage Counties Dakota bedrock aquifer ~97 Square Miles ~61,933 Total Acres ~10,354 Irrigated Acres	**8**-Jansen to Blue Springs Major paleo valley aquifer ~95 Square Miles ~60,928 Total Acres ~26,439 Irrigated Acres	**9**-Southern Jefferson and Gage Counties (Diller Area) Dakota bedrock aquifer ~53 Square Miles ~33,997 Total Acres ~8,027 Irrigated Acres	**0**-Remaining Area-Discontinuous; low productivity aquifer

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Lower Big Blue Natural Resources District

Rules and Regulations Revision Summary

Chapter 3: Definitions

3.8 **Certified Expanded Acres** means a Groundwater Use Acre certified by the Board for the application of Groundwater, but an Allocation may not be granted.
3.25 **Groundwater Use Period** means a 3-year period for which an allocation is set.
3.27 **Historically Irrigated Acres** means acres irrigated with Groundwater one (1) year out of the previous five (5) years. Exemptions apply for federal programs.

Chapter 5: Well Permitting

Pumping Test

5.17 If permit application fails to meet point score, a pumping test may be used to provide the district with more hydrogeologic information.
5.17.3 24-hour pump test between the August 1st and September 30th.
5.17.7 The well must maintain 500gpm or more throughout the 24-hour period.

Wells using more than 400 acre-feet per year

5.18 reduced usage from 500 acre-feet per year to 400 acre-feet per year.

Chapter 6: Variances

6.2.5.2 Landowners and Water Well owners will have thirty (30) days to submit a written waiver of support or objection to a Variance application.

Chapter 7: Phase 1

7.1.1 Flowmeters will be required to be installed on all high-capacity wells District-wide.
7.1.1.1 All high-capacity wells located within the **northeast quarter** of a section must have a Flowmeter installed by **6/30/2026**.
7.1.1.2All high-capacity wells located within the **northwest quarter** of a section must have a Flowmeter installed by **6/30/2027**.
7.1.1.3All high-capacity wells located within the **southwest quarter** of a section must have a Flowmeter installed by **6/30/2028**.
7.1.1.4All high-capacity wells located within the **southeast quarter** of a section must have a Flowmeter installed by **6/30/2029.**
7.1.4 & Chapters 14, 15, 16 District-wide allocation of a maximum of 48 acre-inches over a 3-year period for agricultural users.
7.1.2 Annual water use reports are required to be submitted to the NRD by February 1st every year. (chapter 12)
7.1.3.1 Groundwater can only be applied to certified irrigated acres. All irrigated acres must be certified by **12/31/2024** (11.1)
7.1.5 Board designates sub-areas within the district– **A short description is included below.**

May adjust boundaries
Well permit ranking system can be adjusted for each sub-area
Sub-areas 3, 6, 7, 8, 9, and remaining area (0) minimum score increased to 225 points for well permit approval.
Each sub-area can have different management options.

7.1.6 - 7.1.10 Description of the District's Static Water Level measuring procedures.

Chapter 8: Phase 2

8.1 A sub-area automatically goes into phase 2 when the median static water level of monitoring wells in that sub-area hit the median phase 2 trigger level for 3 consecutive years.
8.2.1 An immediate moratorium on new irrigation wells and expansion of irrigated acres
8.2.3 Allocation amounts set (chapter 14, 15, 16) initially a maximum of 36 acre-inches over a 3-year period.
8.2.6 Certified Expanded Acres – allows adding acres to be irrigated but the allocation amount does not change from the initial certification.
8.4 Will return to phase 1 when water level is above trigger for 3 consecutive years.

Chapter 9: Phase 3

9.1 A sub-area automatically goes to phase 3 when water level is 30% below phase 2 trigger level for 3 consecutive years.
9.3.1 Allocation amounts are reduced.
9.4 Certified Expanded Acres – allows adding acres to be irrigated but the allocation amount does not change from the initial certification.

Chapter 11: Certification of Acres

11.3.1 Certified acres will be acres that are physically irrigated with groundwater.
11.5 No pooling of certified irrigated acres is allowed.
11.6 No transfers of certified irrigated acres are allowed.

Chapter 12: Groundwater Use Reporting

12.3 Reports due February 1st annually.

Chapter 13: Flowmeters

13.9 District may provide cost-share for purchase, installation, maintenance, or repairs.
13.8 Flowmeters must be maintained by the District, a representative of the District, or anyone else with approval.
13.11.1 The NRD will develop a maintenance schedule for Flowmeters.

Chapters 14-16: Allocations

14.1.1, 16.1.1 Set by the board by January 1st for a 3-year period.
14.2.1.1, 16.1.1 10% allocation carryover maximum
14.2.2, 16.4.2 Overused allocation will be reduced by 2x the amount overused for the next 3 years. (uses 3 inches over, allocation is reduced by 6 inches for the next 3 years)
16.2 Other Users (LFOs, commercial/industrial, manufacturing,) restricted to their water use by the total amount used during the previous 3 years.

Timeline of Events

December 8, 2022

Board enacts 180 day stay on the drilling of new high capacity wells and expansion of irrigated acres in response to groundwater declines.

June 2023

District enacts a permanent moratorium on the drilling of new high capacity wells and expansion of irrigated acres in response to continued drought .

Fall 2023– Spring 2024

The District contracts with Olsson Inc. to delineate sub areas while simultaneously beginning strategic AEM surveys.

Water management controls and rules revisions are developed.

November 6, 2024

A public hearing is scheduled on the rules and regulations revisions a 6 P.M. at the Gage County 4-H Building.