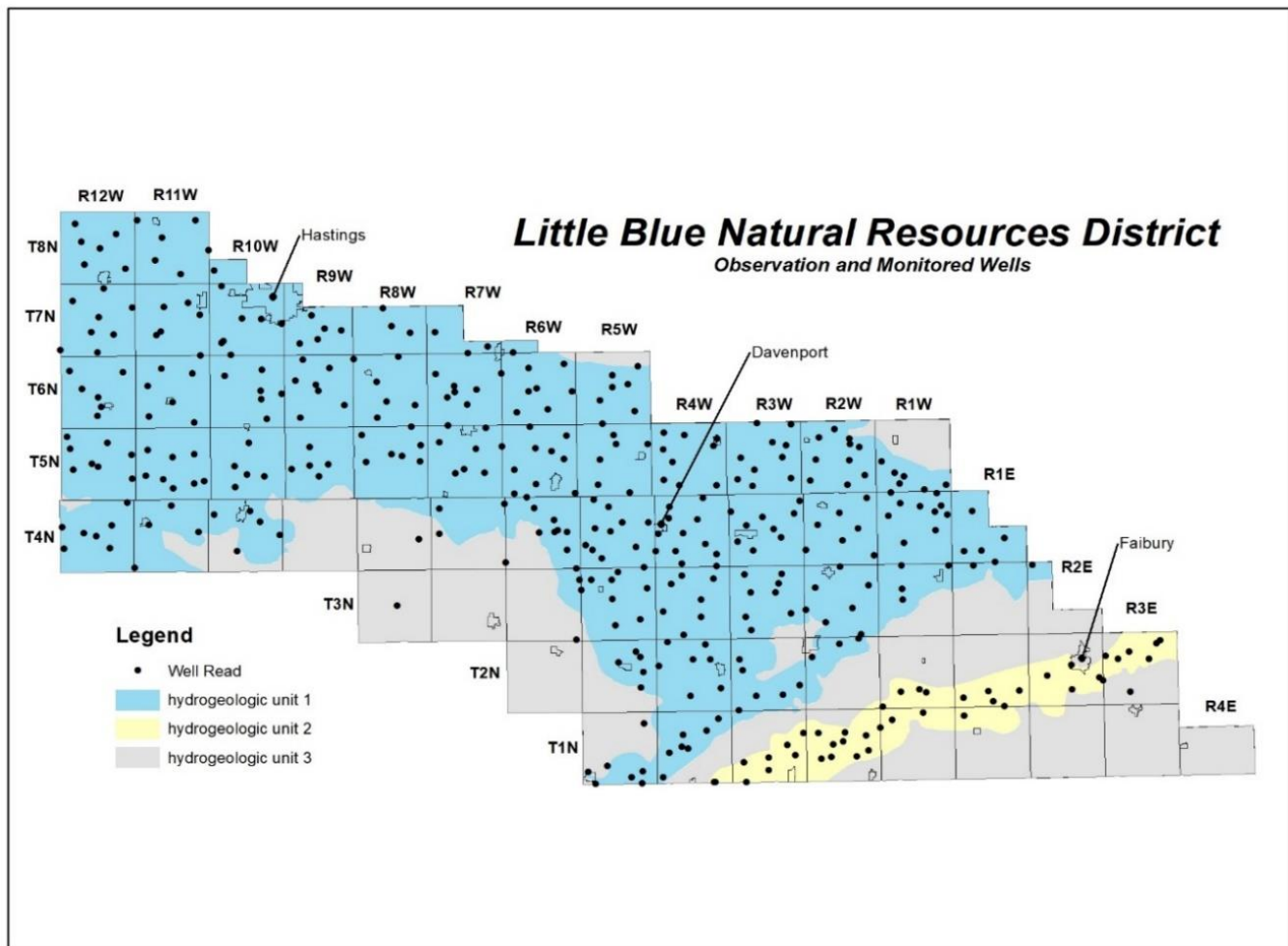


Little Blue Natural Resources District Blue River Basin Compact Meeting Annual Report – May 9, 2023

Spring 2022 to Spring 2023 Ground Water Levels

Spring 2023 water levels were completed during the month of April. The map below shows two geologic areas and observation wells that are monitored twice per year. Geologic Area 1 shown in blue was down -1.43 feet on average. Geologic Area 2 shown in yellow was down -0.58 feet on average. Average District precipitation for 2022 was 19.2 inches with average irrigation use of 9.4 inches per acre.

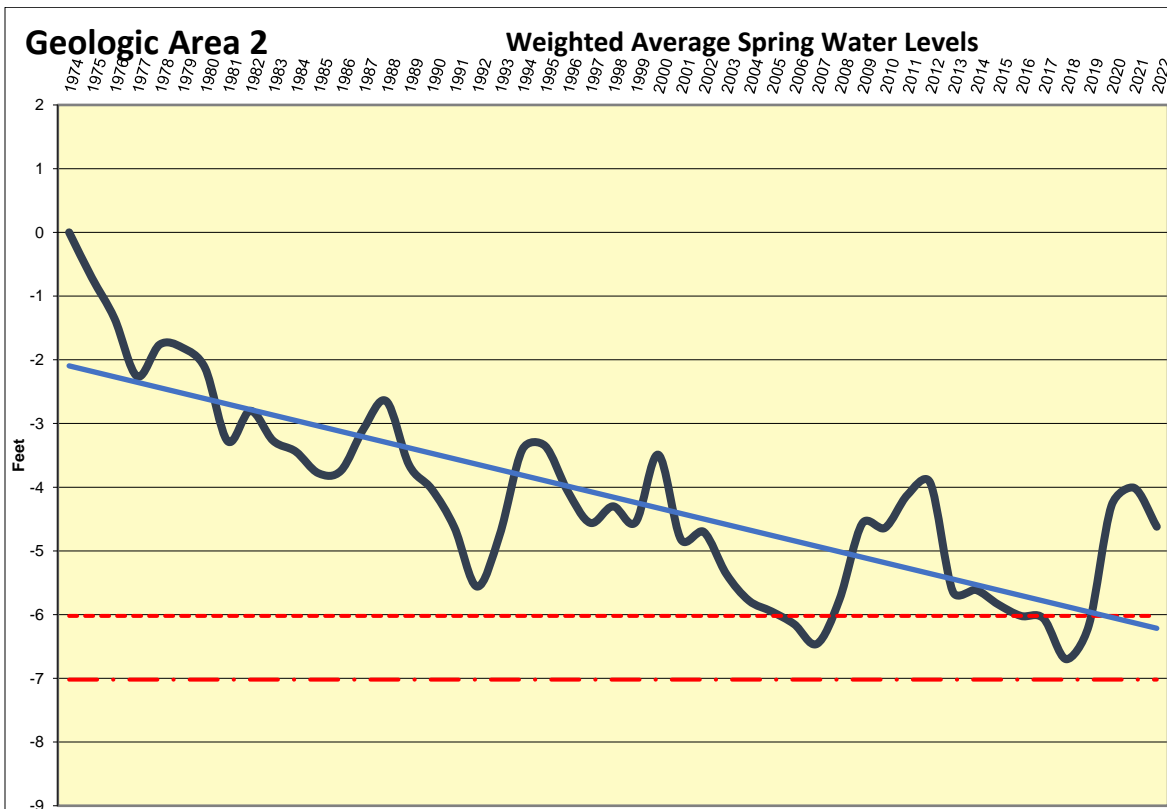
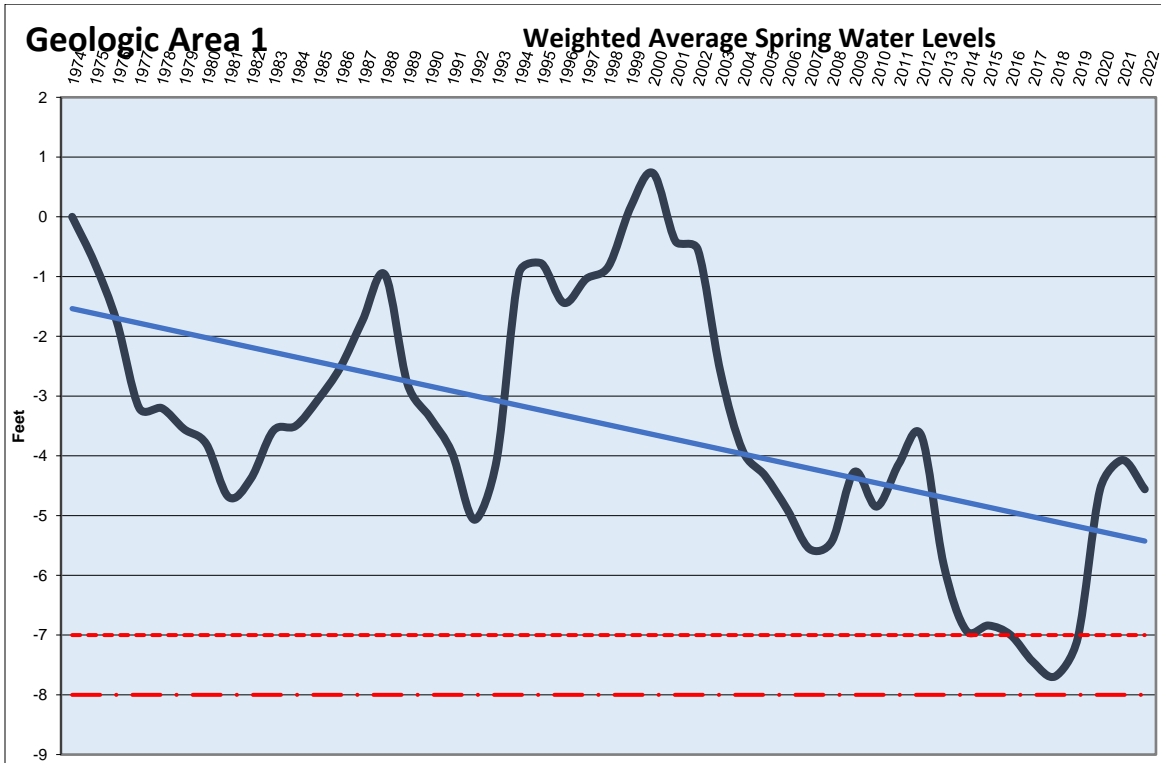


Irrigation Flow Meters

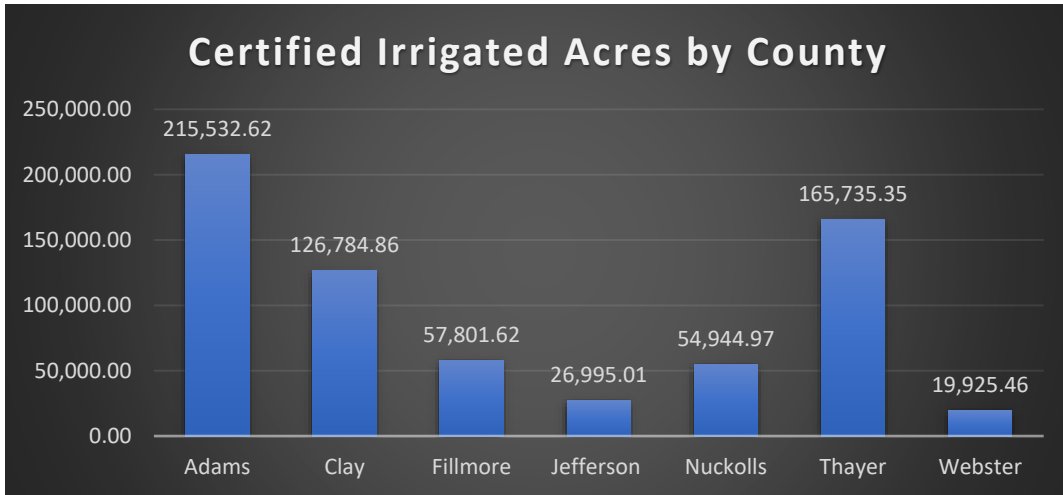
Per our Voluntary Integrated Management Plan (IMP), the District requires that every high capacity well have a working, accurate flow meter. To ensure accuracy and good water use records, each year the District inspects and maintains 800 irrigation flow meters during September, October and November. This schedule allows each meter to be inspected and maintained at least once every seven years. The annual cost for inspecting and maintaining meters is approximately \$60,000.

Irrigation Allocations

The District has adopted an allocation system that uses weighted average graphs for tracking water levels for each aquifer. If levels fall one foot below 2016 baseline levels for one-year, there is a stay on irrigation well drilling and expansion of irrigated acres within the respective area. If levels fall one foot below the 2016 baseline for 2 consecutive years allocations of groundwater for irrigation are implemented. Allocations are set at 5 years and 13 inches per year.



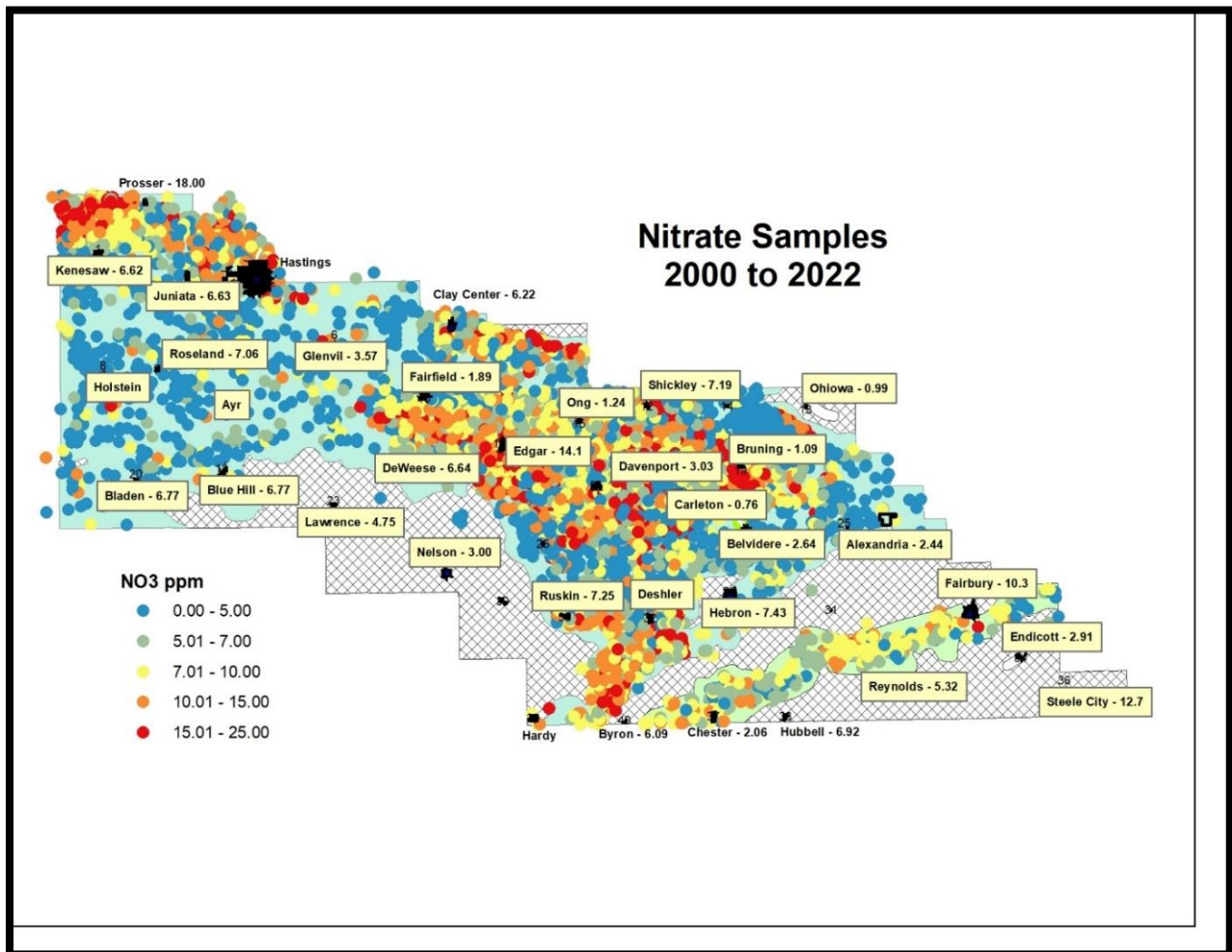
Certified Irrigated Acres – 667,720 Total Acres



Water Quality

The District is committed to protecting both surface and groundwater quality. The District offers many cost share programs to implement BMPs aimed at reducing nitrates in groundwater.

- Crop Rotation
- Continuous No-till
- Nitrogen Management
- Irrigation Scheduling
- Chemigation Incentives
- Nitrification Inhibitors



Watershed Projects

- **32-Mile Creek Watershed WFPO Project** – This project has been approved for federal funding and is currently in a 2-year planning phase. The project involves the construction of eight structures that will provide flood protection to the Villages of Kenesaw and Juniata. The project will also improve surface water quality throughout the watershed. Total construction cost is estimated at \$7.8 million dollars.
- **Big Sandy Creek National Water Quality Initiative (NWQI) Project** – Area of this project includes the Villages of Bruning, Belvidere and Carleton and is aimed at reducing E-Coli and Atrazine in Big Sandy Creek. Due to a recent surge of landowner interest involving precision chemical application and using an alternative herbicide to atrazine, plans are being discussed to possibly extend the project beyond the original 5-year timeframe, which is set to expire in September 2023.
- **Bowman-Springs Ranch Watershed** – This past year, the District completed repairs on three PL-566 watershed flood control structures in this watershed which is located near the Kansas-Nebraska State line. Repairs included adding rip rap to mend face erosion and installing new outlet sections to principal spillway pipes. The total cost of repairs was \$112,000.

Little Blue Valley Water Project

The Little Blue Valley Water Project is a rural water system that includes 400 service locations, of which 89 are located in the State of Kansas and provides potable water to 1,500 people. Due to rising water rates and elevated nitrate levels from the current source (City of Fairbury), an alternative water source was sought out and located. The District secured a 640-acre wellfield site where two 400 gallon per minute wells will be constructed. Nitrate water quality samples collected from 8 test wells on this property ranged from 0.5 to 2.63 parts per million. The cost to construct 2 wells and install 14 miles of pipeline is estimated to be \$10 million dollars.

