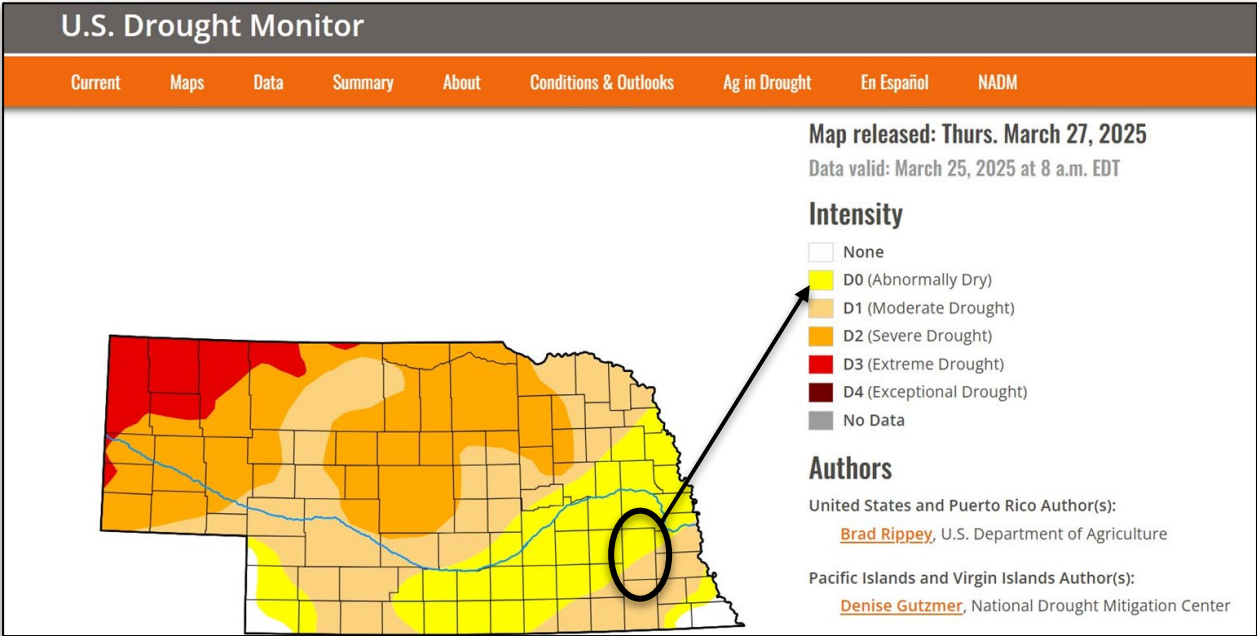
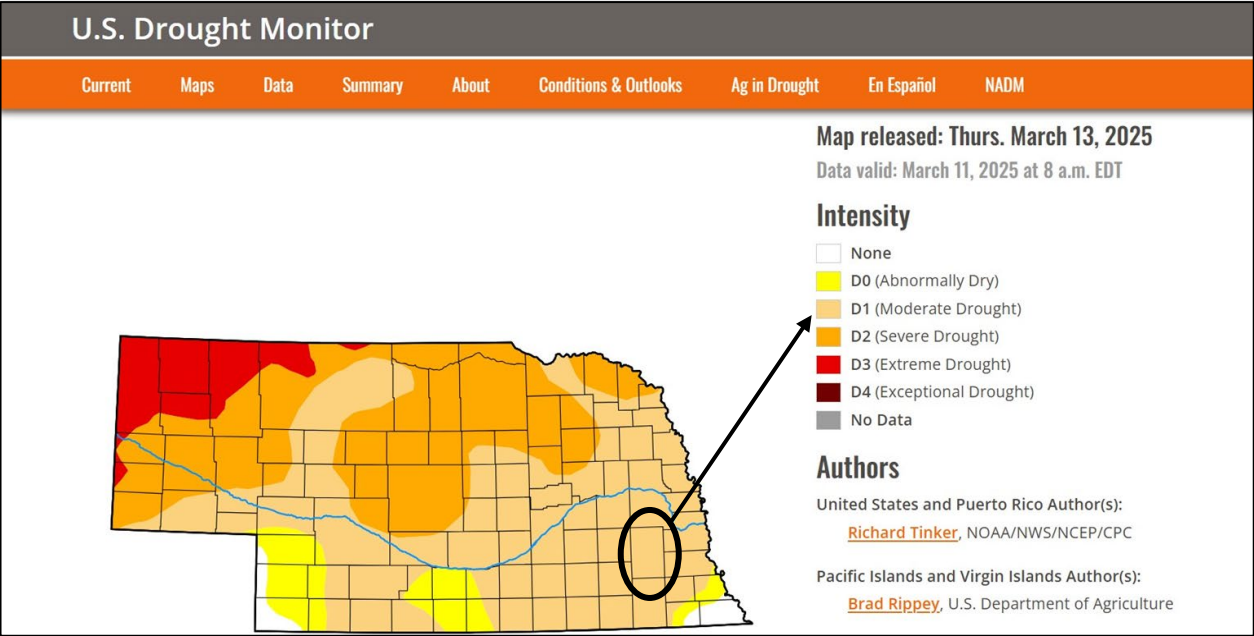


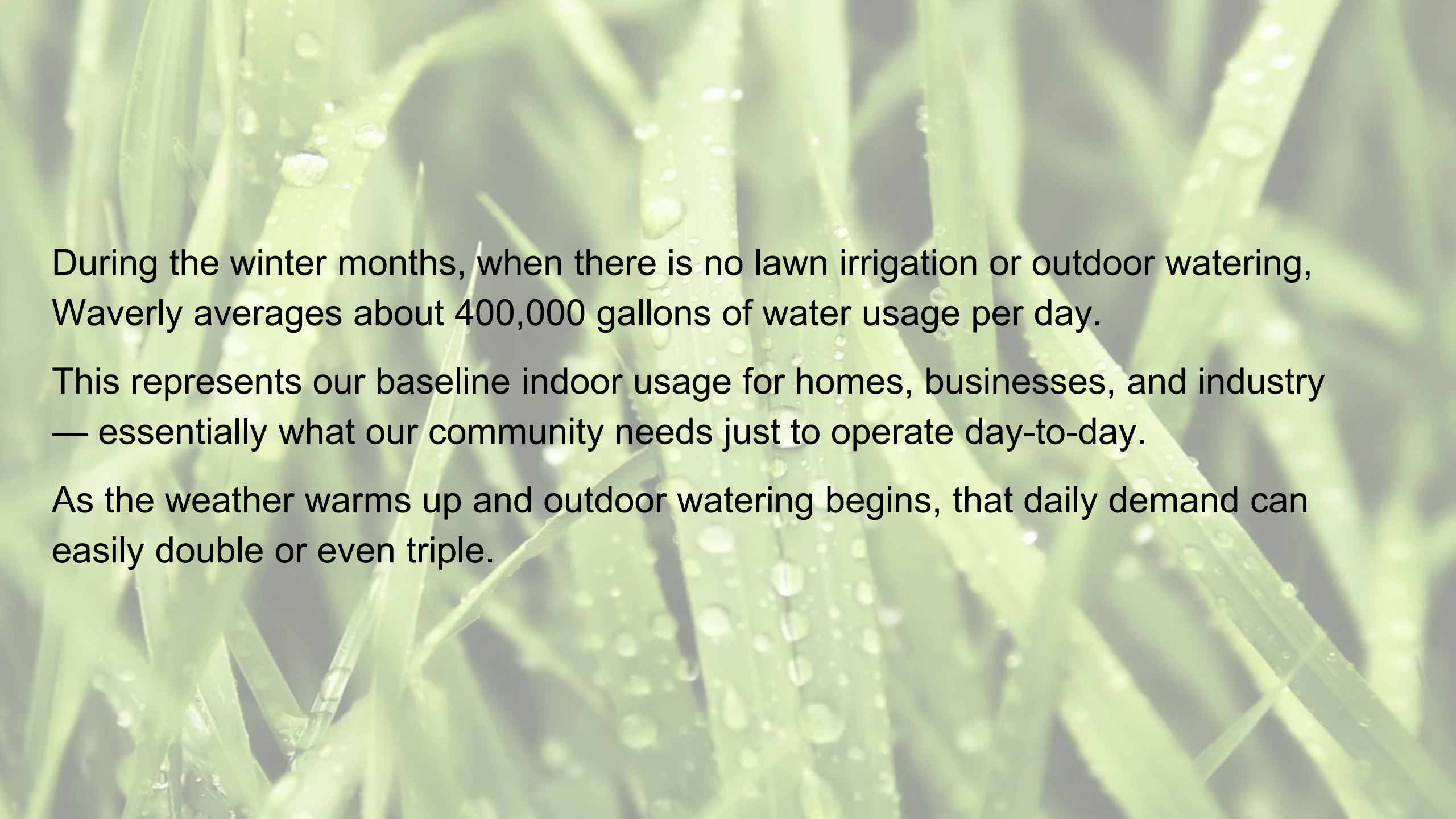


Understanding Waverly's Water Supply

April 2025

In the Waverly area, two snow events in March helped improve drought conditions, shifting the classification from a moderate drought to an abnormally dry intensity. While this is a positive development, it's important to note that the region is still experiencing below-average moisture levels. Continued monitoring and conservation efforts remain essential as we move into the summer season.

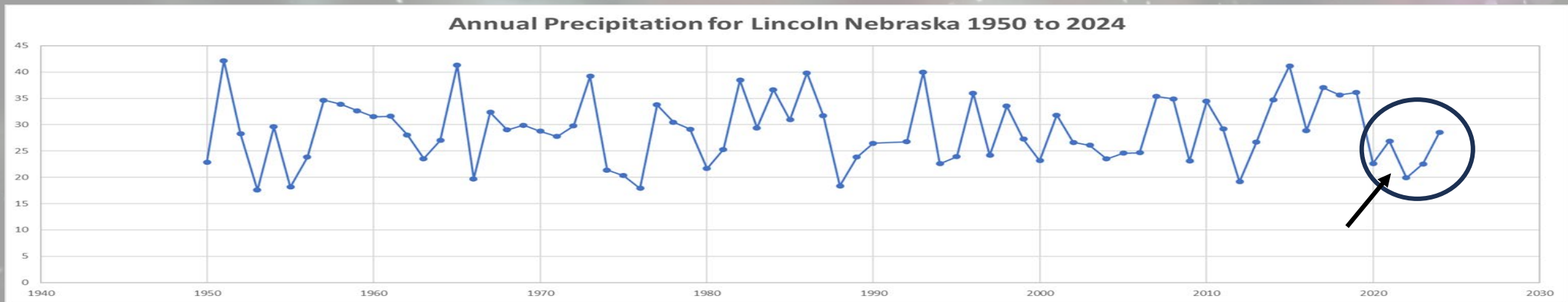




During the winter months, when there is no lawn irrigation or outdoor watering, Waverly averages about 400,000 gallons of water usage per day.

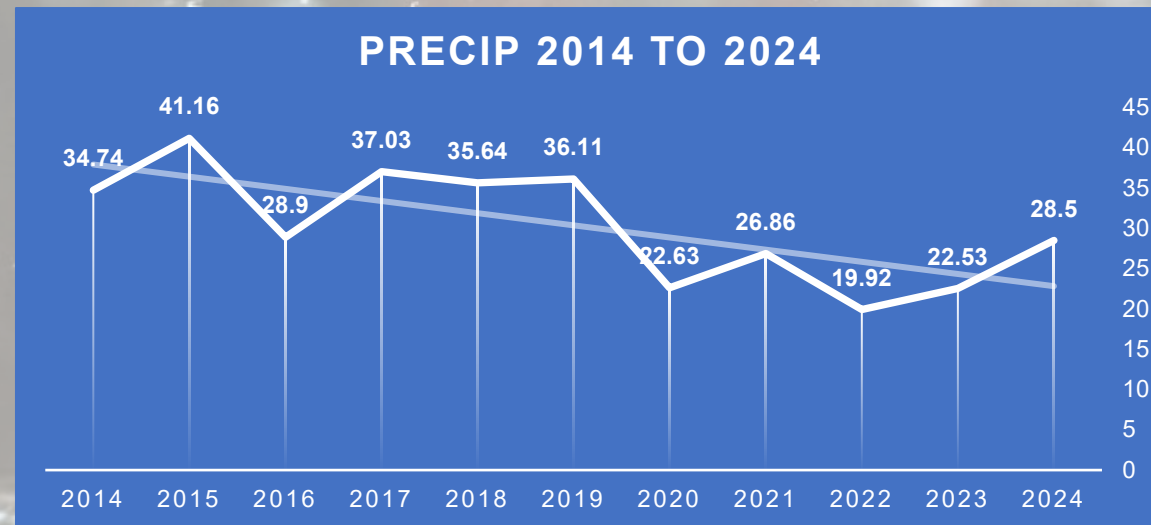
This represents our baseline indoor usage for homes, businesses, and industry — essentially what our community needs just to operate day-to-day.

As the weather warms up and outdoor watering begins, that daily demand can easily double or even triple.



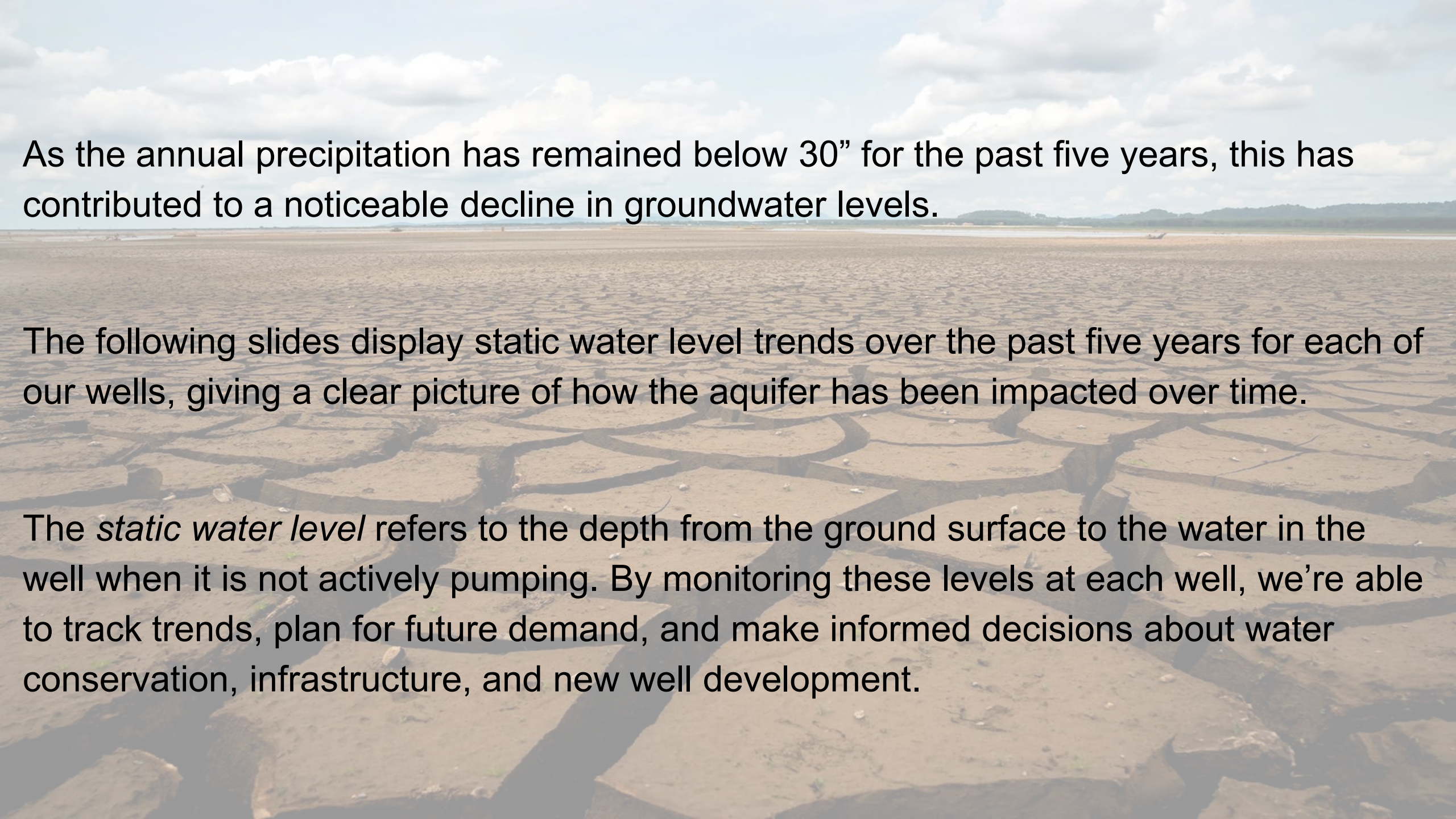
Since 1950, precipitation in our region has followed a pattern of natural variability—marked by cycles of wetter and drier years. **In the past five years, we have seen less than 30" of precipitation each year.**

2024 - 28.5"
 2023 - 22.53"
 2022 - 19.92"
 2021 - 26.8"
 2020 - 22.63"



Over the past decade, precipitation in our area has steadily declined, with **2022** marking the driest year at just **19.92"**.

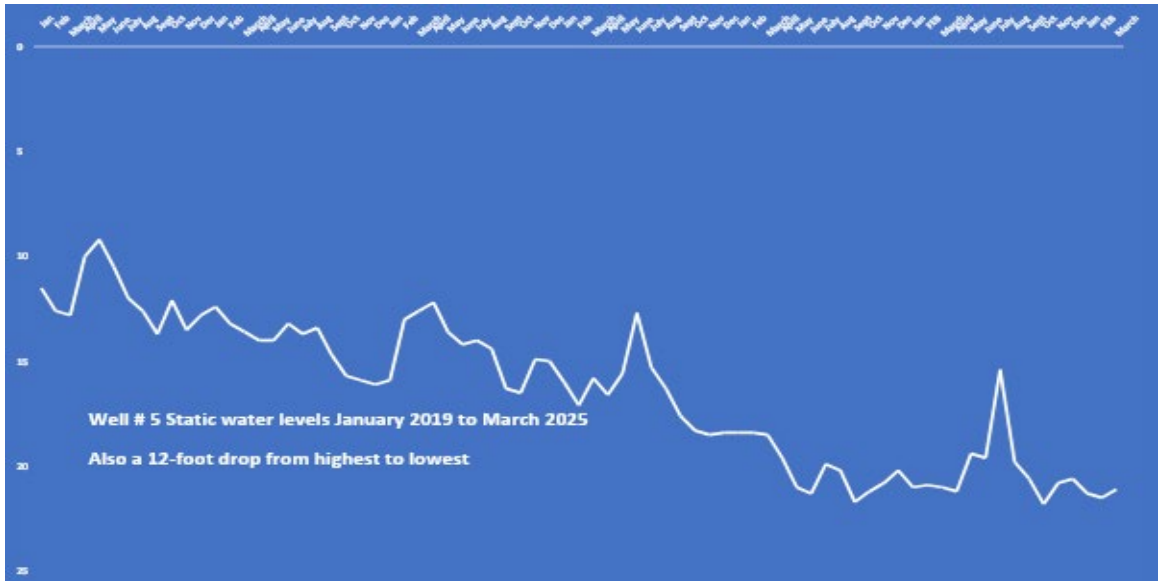
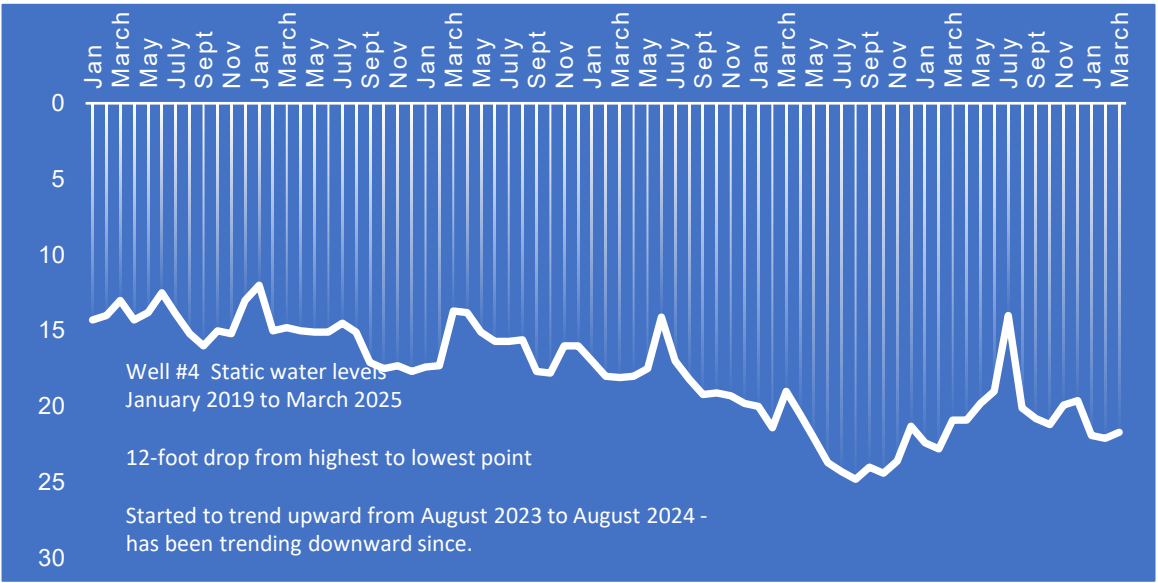
This long-term trend of reduced rainfall puts additional stress on our water supply, especially during high-demand periods and drought conditions.



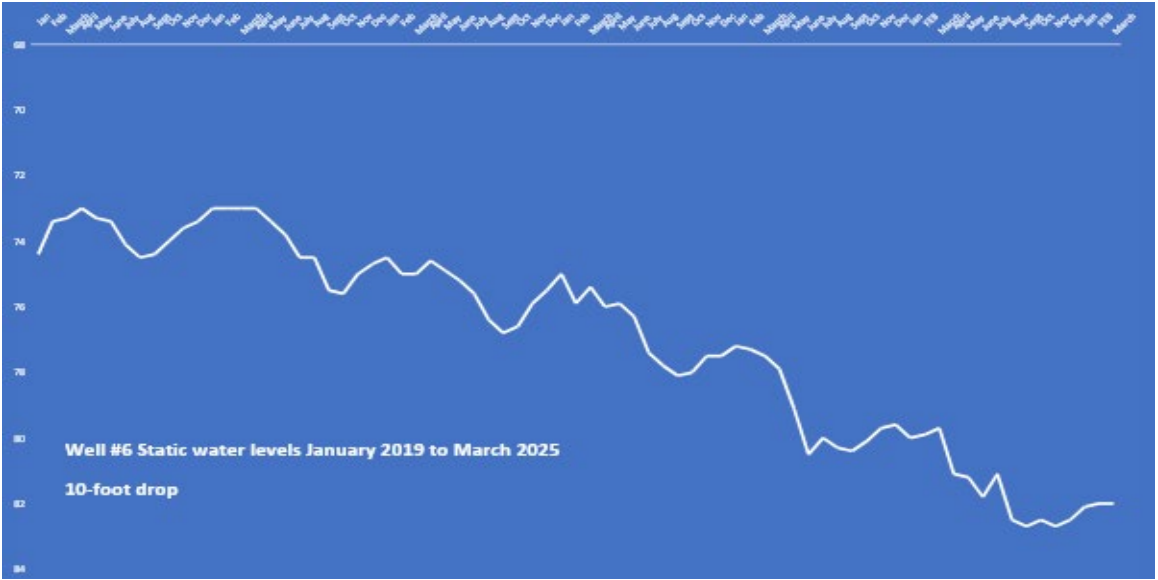
As the annual precipitation has remained below 30” for the past five years, this has contributed to a noticeable decline in groundwater levels.

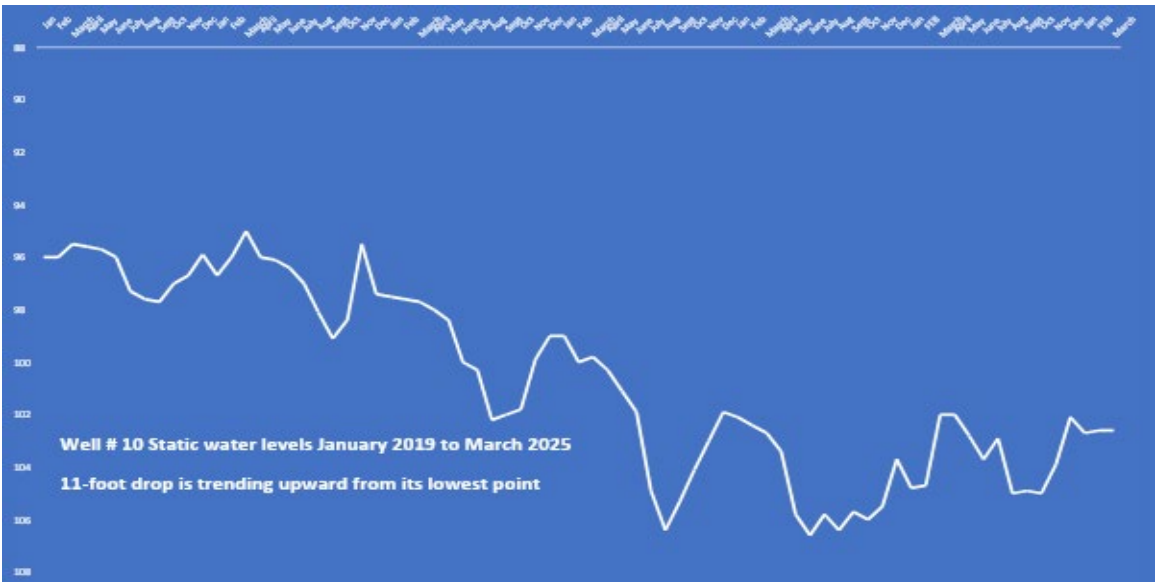
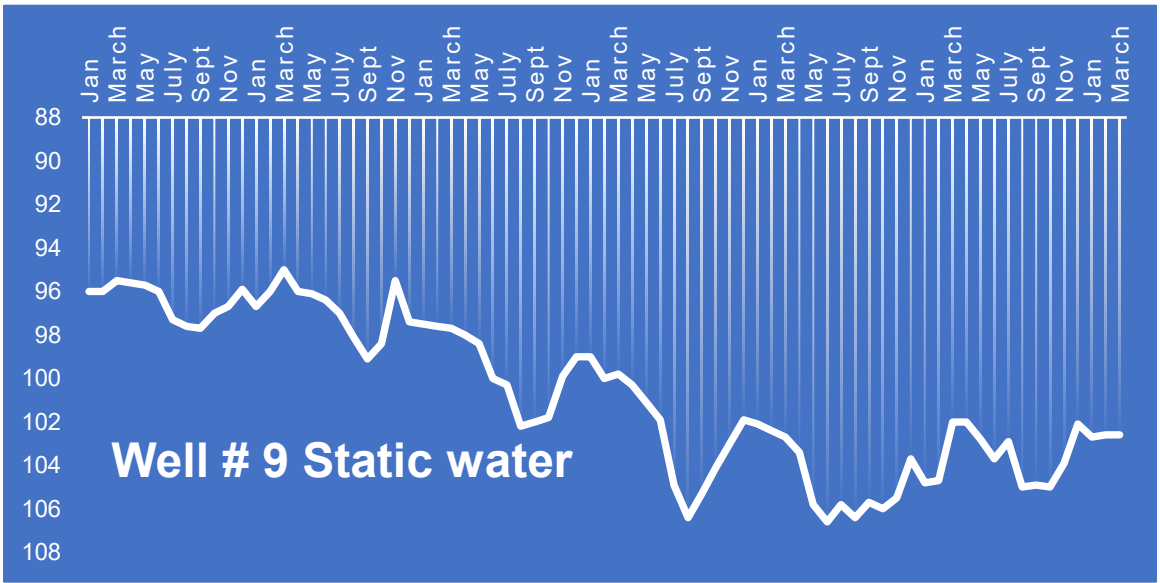
The following slides display static water level trends over the past five years for each of our wells, giving a clear picture of how the aquifer has been impacted over time.

The *static water level* refers to the depth from the ground surface to the water in the well when it is not actively pumping. By monitoring these levels at each well, we’re able to track trends, plan for future demand, and make informed decisions about water conservation, infrastructure, and new well development.

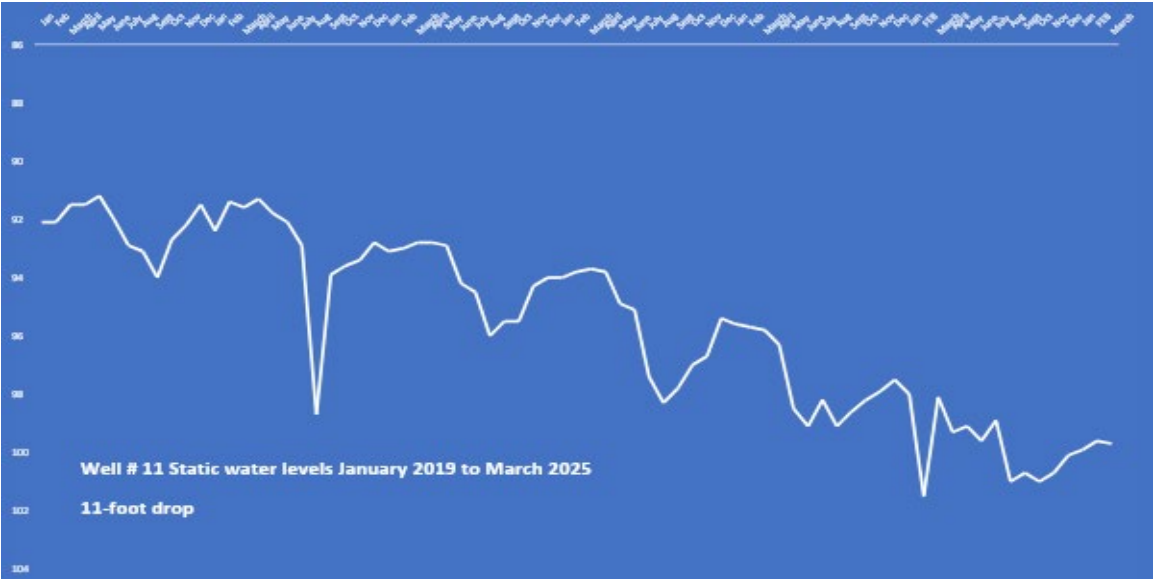


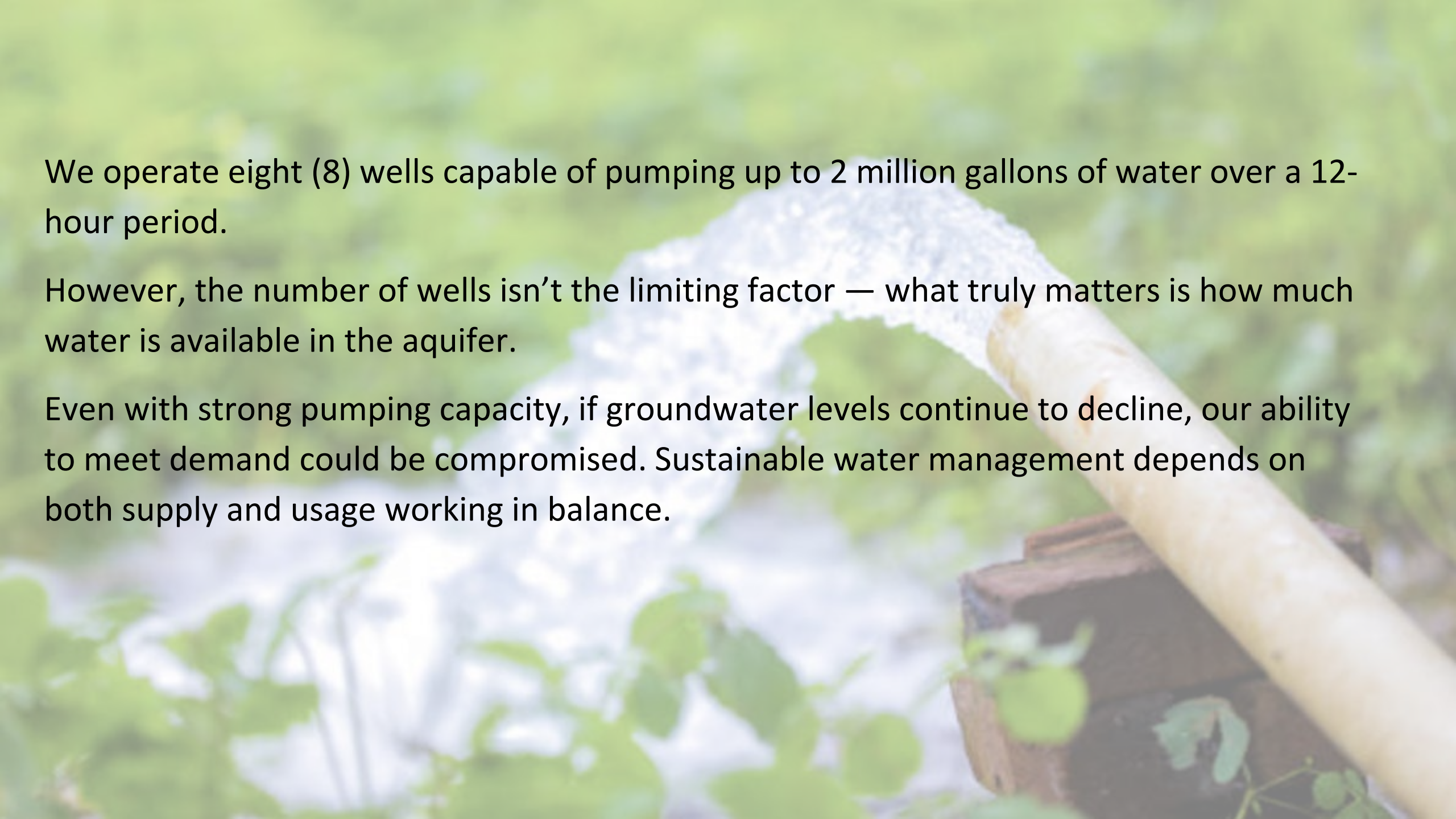
STATIC WATER LEVELS





STATIC WATER LEVELS





We operate eight (8) wells capable of pumping up to 2 million gallons of water over a 12-hour period.

However, the number of wells isn't the limiting factor — what truly matters is how much water is available in the aquifer.

Even with strong pumping capacity, if groundwater levels continue to decline, our ability to meet demand could be compromised. Sustainable water management depends on both supply and usage working in balance.

We're not the only ones relying on groundwater — each dot represents a registered well across the state.

During dry conditions, groundwater use increases everywhere.

As a result, static water levels decline statewide.

This isn't an issue unique to Waverly—it's a challenge shared across the region.

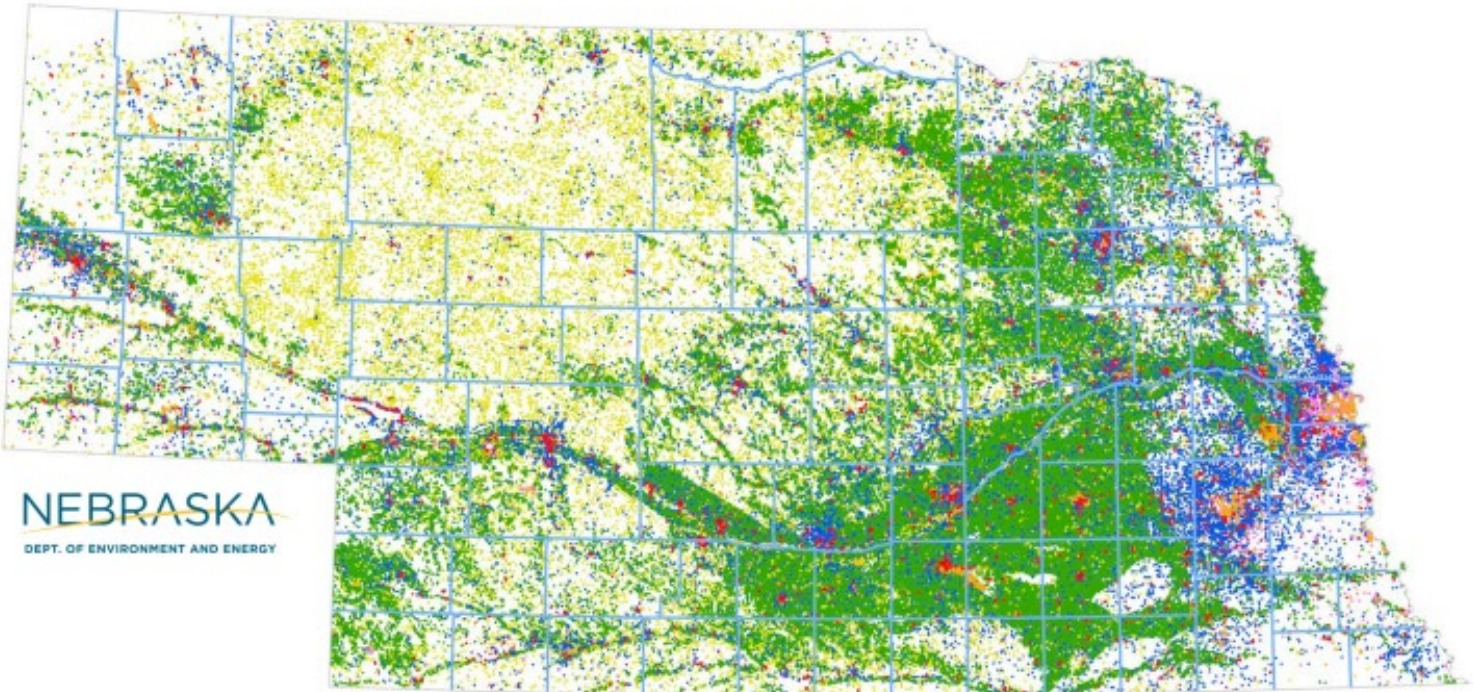
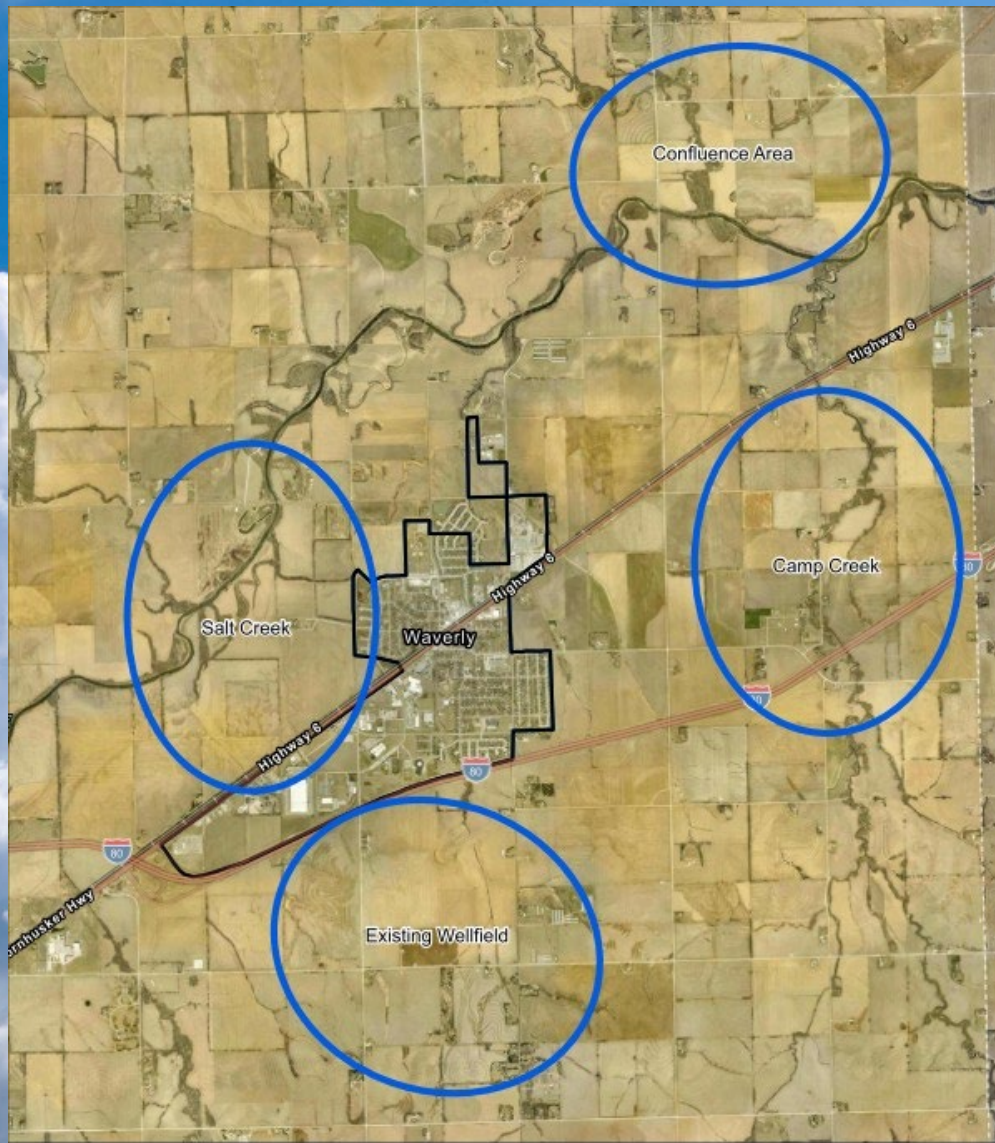


Figure 7. Active registered water wells as of November 2024 (Nebraska Department of Natural Resources Registered Well Database, 2024).

Table 1. Active registered water wells and use as of November 2024 (Nebraska Department of Natural Resources Registered Well Database, 2024).

	WATER USE	ACTIVE
	Irrigation	96,846
	Domestic	35,575
	Livestock	25,508
	Monitoring (Groundwater Quality)	18,117
	Public Water Supply	5,200
	Commercial/Industrial	1,851
	Other	7,332
	Total	190,429

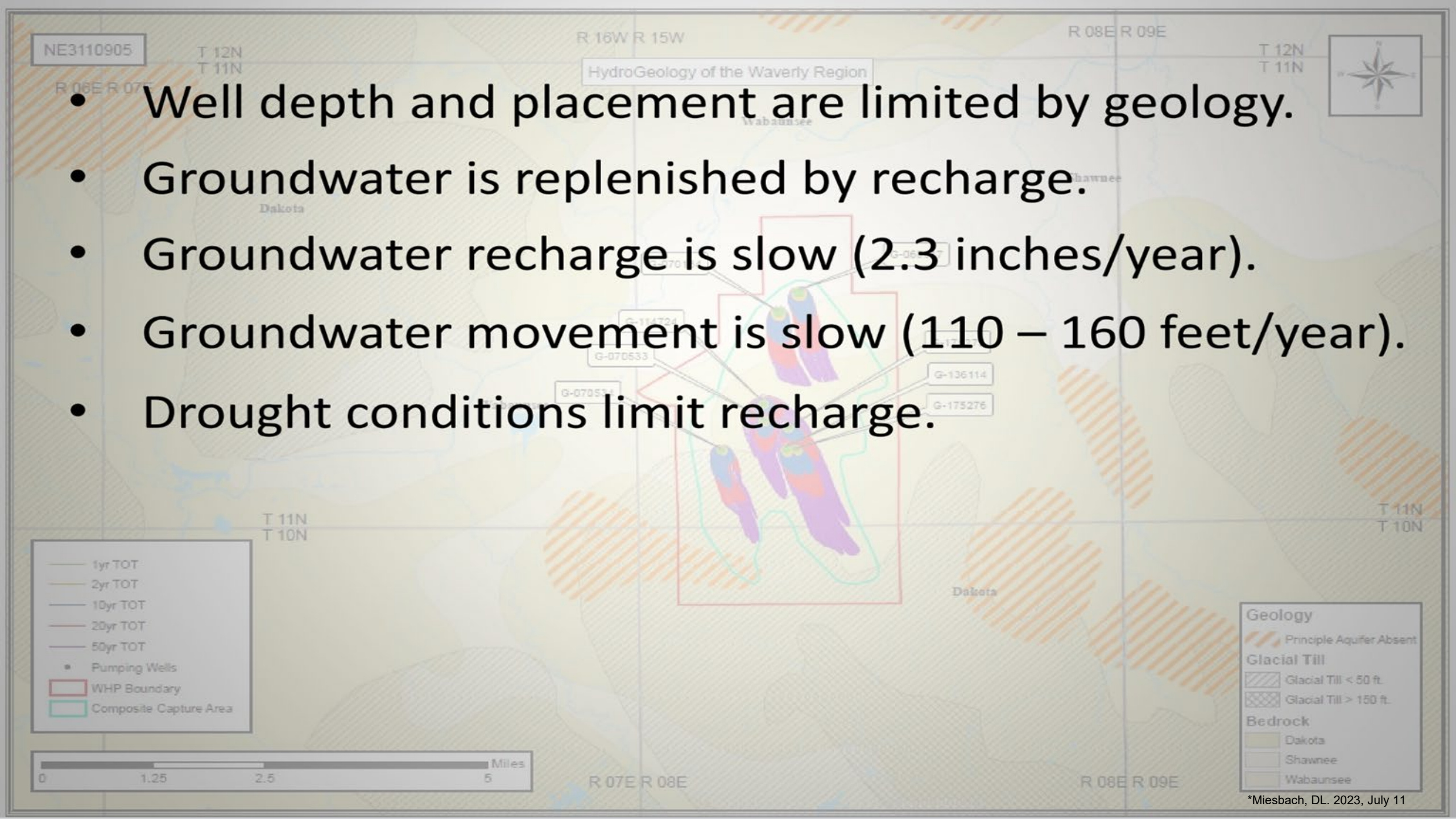


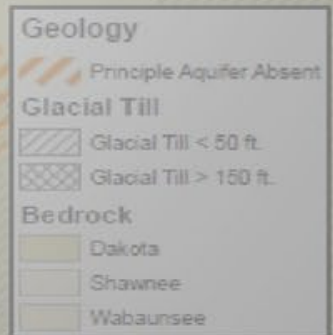
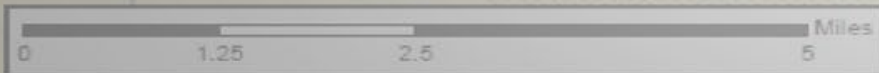
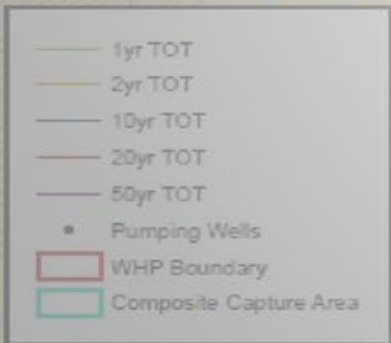
Later this year, we will begin exploratory drilling in these targeted areas to evaluate future groundwater availability and potential pumping capacities within the Waverly area.

This project will assess up to 13 possible sites for the development of a new well, testing both water quality and site suitability to determine the most viable location.

Based on the results of these test wells, we may move forward with the process of adding a new production well as early as next year.

All related study documents are available on our website for public review.

- 
- The map displays the Waverly Region, including parts of Wabaunsee, Shawnee, and Dakota counties. It features a grid of townships (T 10N to T 12N) and ranges (R 07E to R 09E). A red outline indicates the WHP Boundary, and a green outline shows the Composite Capture Area. Various pumping wells are marked with dots and labeled with IDs such as G-114724, G-070533, G-070534, G-136114, and G-175276. The map also shows geological features like glacial till and bedrock, and hydrogeological features like total organic carbon (TOT) contours for 1, 2, 10, 20, and 50 years.
- Well depth and placement are limited by geology.
 - Groundwater is replenished by recharge.
 - Groundwater recharge is slow (2.3 inches/year).
 - Groundwater movement is slow (110 – 160 feet/year).
 - Drought conditions limit recharge.



Water to the Bottom of the Roots

➤ Spring & Fall 1" water / week

➤ Summer

- Heavy soils- 1.5" water / week
- Sandy soils- 2" water / week

➤ Allow Kentucky bluegrass to go dormant

- Greater susceptibility to wear damage
- Disease & insect injury may go undetected



N EXTENSION

The City has moisture meters available for anyone who wants to use this method for their lawn.



Watering Tips

- Water deeply and infrequently
- "Soak & cycle"
- Look for wilting symptoms
- Color change
 - Leaf blades don't spring back after foot traffic
- Measure soil moisture level to determine need to water
- Screwdriver



N EXTENSION

Water conservation remains the most powerful and effective tool for managing usage, especially as drought conditions continue.

While infrastructure improvements and new wells can support supply, reducing demand through smart water use has the greatest **immediate** impact.

Every drop we save helps preserve our aquifer and ensures a more resilient water system for the entire community.

Watering

Effective 5-1-24
Year-Round

SCHEDULE

SUNDAY	Addresses ending in EVEN numbers (0, 2, 4, 6, 8)
MONDAY	No Watering
TUESDAY	Addresses ending in ODD numbers (1, 3, 5, 7, 9)
WEDNESDAY	Addresses ending in EVEN numbers (0, 2, 4, 6, 8)
THURSDAY	No Watering
FRIDAY	No Watering
SATURDAY	Addresses ending in ODD numbers (1, 3, 5, 7, 9)
<i>No lawn watering or irrigation is permitted between the hours of 10:00 a.m. and 4:00 p.m. on any day.</i>	

VIOLATIONS: Per Calendar Year

1st: Warning notice attached to front door of residence
2nd: Warning notice attached to front door of residence
3RD: \$200 reconnect fee + notice attached to front door
4TH & up: \$400 reconnect fee + notice attached to front door

This schedule only applies to lawn irrigation (watering of your yard).

You are still able to:

- Water gardens
- Water bushes/shrubs
- Water trees
- Wash vehicles
- Fill pools/hot tubs



What we need most is
consistent precipitation.

Thank you all for doing your
part to help us with our
conservation efforts.