WELCOME!

Please sign in, grab a handout, and work your way around the different display boards to learn about the **Proposed Draft Groundwater Management Plan**.

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PROPOSED PLAN CHANGES

- Keep resevoir life goal, add updated objectives
- Changes to groundwater **quantity** triggers for Phases II and III
- Changes to groundwater **quality** triggers for Phases II, III, and IV
- Incorporate new strategies and actions that address:

Groundwater quality and public health

Soil health

Joint climate and groundwater monitoring

Continued data collection

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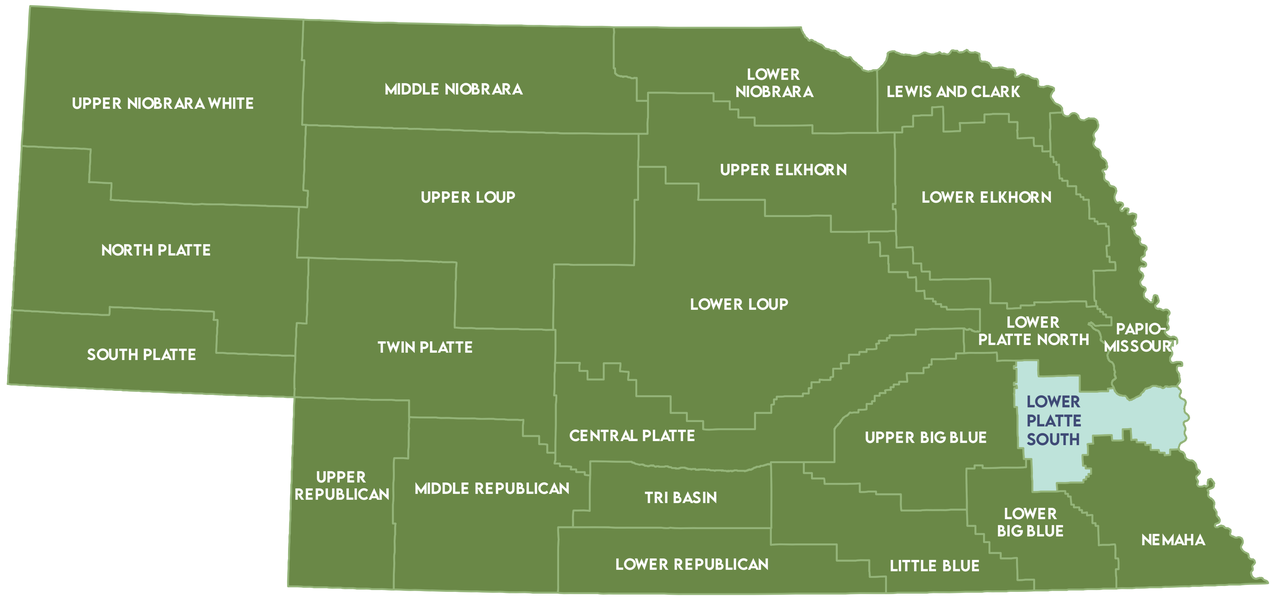
WHAT IS A NATURAL RESOURCES DISTRICT?

- Unique to Nebraska, Natural Resources Districts (NRD) were established in 1972.
- The Lower Platte South NRD (LPSNRD) is one of 23 NRDs across the state.



- Each district is autonomous, governed by a locally elected board of directors.
- NRDs are NOT a state or federal agency.
- NRDs have the broad responsibility to conserve, protect, and manage natural resources using locally governed solutions within defined river basin boundaries.

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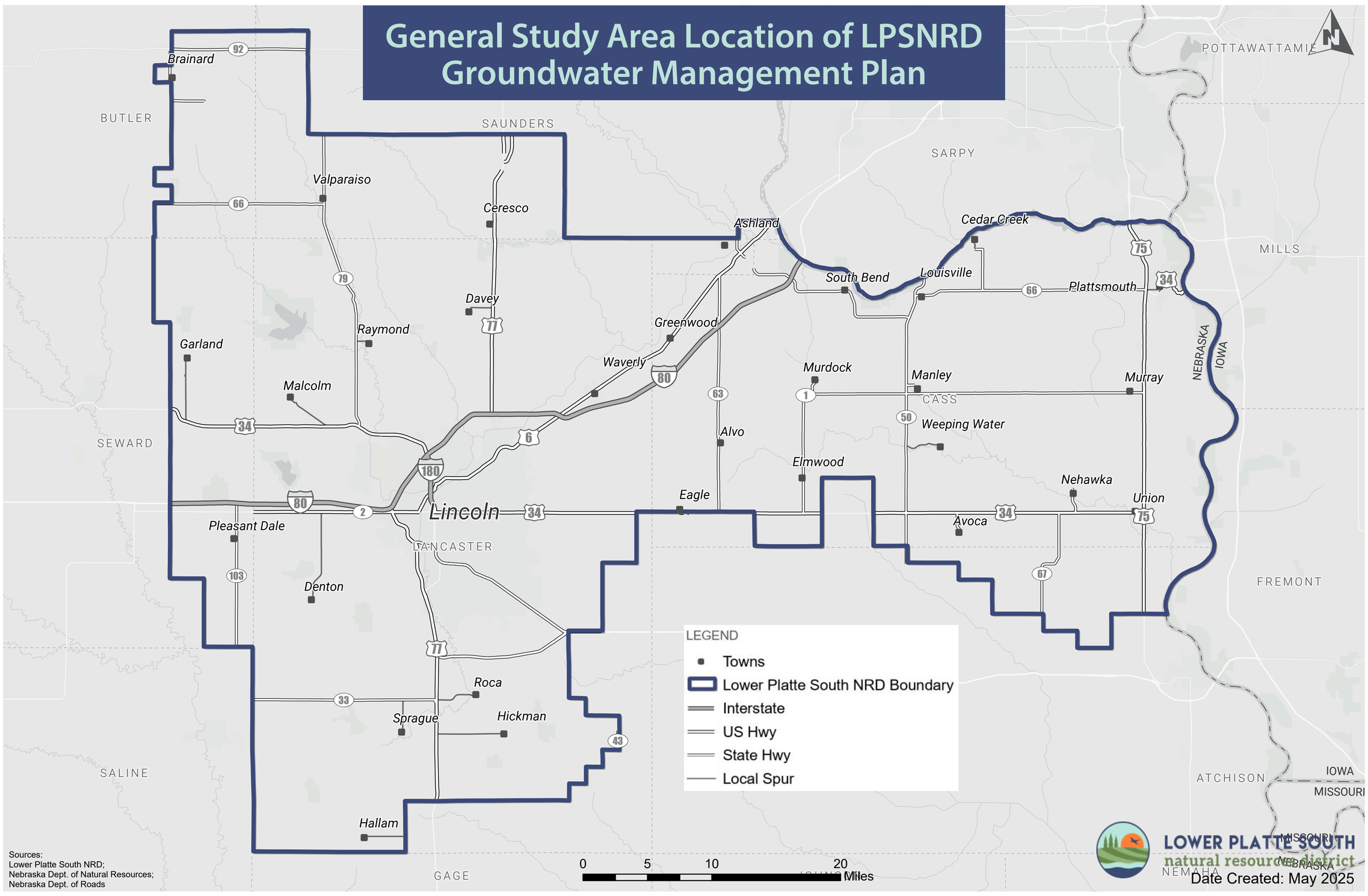
WHAT DOES THE LOWER PLATTE SOUTH NRD DO?

- Serves 350,000 constituents and approximately 1 million acres.
- Coordinates projects to help constituents protect and preserve our natural resources, including programs aimed at enhancing conservation efforts and cost-sharing initiatives to support eligible programs.
- Collaborates with other local agencies (state and federal) and organizations for funding and cost-share.
- More information on NRD resources can be found on the LPSNRD website, **www.lpsnrd.org.**



WHAT IS A GROUNDWATER MANAGEMENT PLAN?

A groundwater management plan (GWMP) is required for each NRD per Nebraska's Groundwater Management and Protection Act.

A strategic document that outlines long-term goals, strategies, and actions to monitor and maintain groundwater quality and quantity in a district.

Based on the most reliable data available on groundwater quantity and quality within the district.

Reflects the unique hydrogeology and characteristics of the water supply in the district.

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WHY DOES THIS MATTER TO ME?

We rely on clean drinking water supplies every day throughout the district.

We rely on the abundance of groundwater for irrigation, personal use, industry, recreation, etc.

Public health concerns over contaminants in the water supply are rising. LPSNRD is committed to preventing contaminants like nitrates from entering the water supply and to monitoring emerging contaminants.

The groundwater management plan will help outline plans to monitor, identify, and implement strategies to minimize contamination and maintain adequate supplies of groundwater.

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NEED FOR AN UPDATED GROUNDWATER MANAGEMENT PLAN

- Incorporate decades of new data (geology, climate, groundwater quantity and quality).
- New insights into hydrogeology and latest groundwater modeling.
- Evaluate the impact of climatic variations on groundwater quantity and quality:
  - Reconsider triggers in relation to groundwater levels.
  - Reconsider triggers in relation to public health and contaminant levels.
- Incorporate new solutions to improve or protect groundwater quality and quantity.

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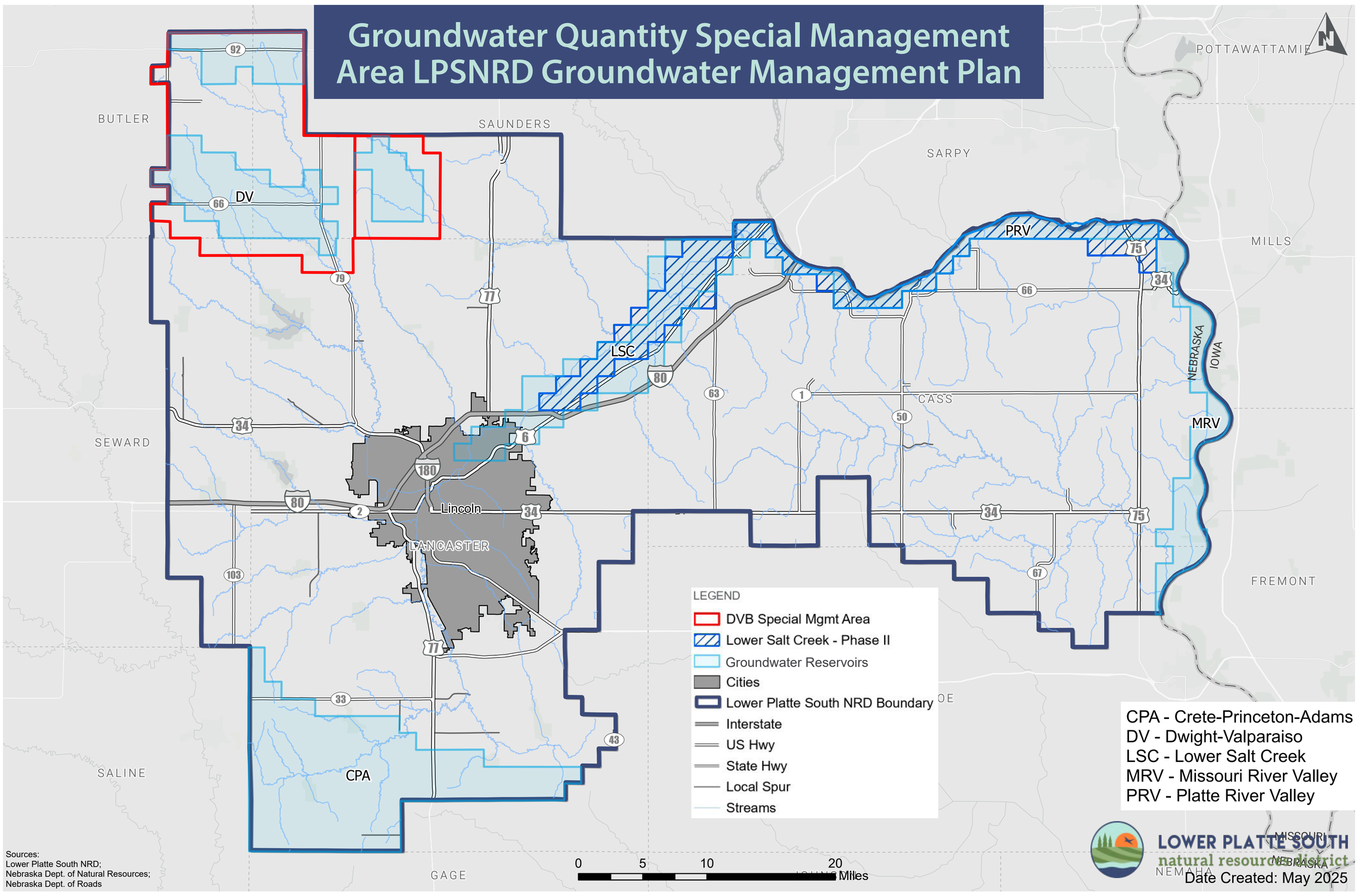
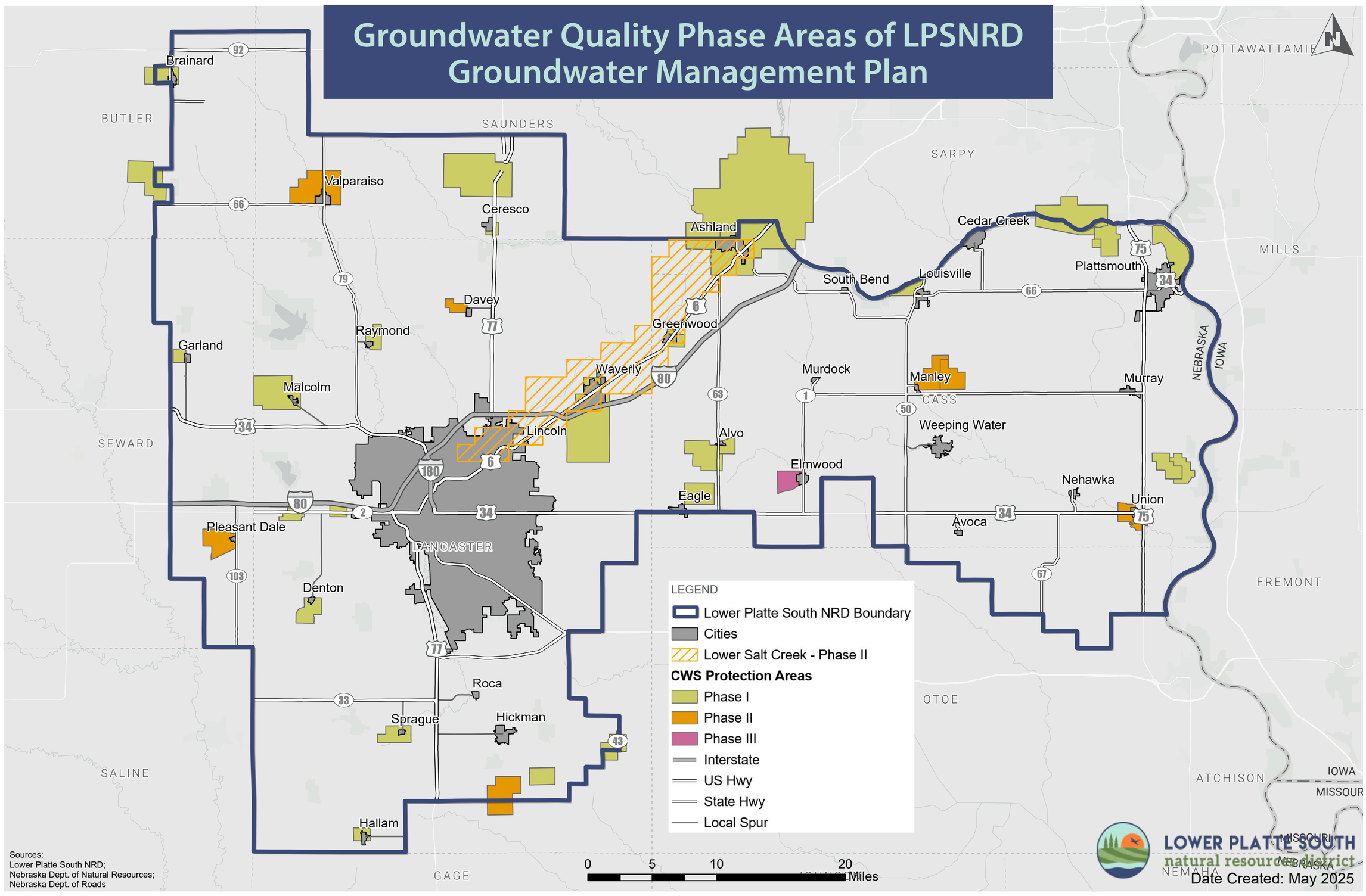
GROUNDWATER QUANTITY AND LIVELIHOOD/ECONOMY

- The amount of groundwater available will affect things like:
  - Drinking water
  - Irrigation
  - Municipality and industrial usage
- Groundwater availability can be affected by both short- and long-term droughts.
- Conflicts between well users can arise when the groundwater level is decreased.



GROUNDWATER QUALITY AND PUBLIC HEALTH

- Nitrates are the most common non-point source pollutant in Nebraska.
- Non-point source pollution is pollution from diffuse sources where no point of release can be identified.
- Nitrate sources include:
  - Chemical fertilizers
  - Breakdown of organic material in soils
  - Manure and biosolids
- The maximum contaminant level (MCL) for nitrate is 10 parts per million (Nebraska's Drinking Water Standards).
- Public health concerns can result from nitrate and other potential groundwater contaminants.
- The groundwater management plan includes guidance for monitoring and addressing pollutants in the district.



CURRENT CONDITIONS

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PROPOSED GROUNDWATER QUANTITY TRIGGERS

- Proposed changes address climate variability and potential groundwater elevation declines during drought.
- During drought, groundwater elevations decline because:
  - There is less groundwater recharge.
  - More groundwater is used for both urban and rural irrigation.
  - Some baseflow to streams still occurs.

GROUNDWATER RESERVOIR	PHASE II (30 % OF MONITORING WELLS DECLINED)	PHASE III (50 % OF MONITORING WELLS DECLINED)
Lower Salt Creek	~~15~~ 10%	~~30~~ 15%
Missouri River	8%	15%
Platte River	8%	15%
Crete-Princeton	~~8~~ 6%	~~15~~ 12%
Dwight-Valparaiso	~~8~~ 6%	~~15~~ 12%
Remaining Areas	8%	15%

For more information on triggers, please see Chapter 7 in the draft GWMP.

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PROPOSED GROUNDWATER QUALITY TRIGGERS

- To address public health risks, groundwater quality triggers are based on the MCL from the latest Safe Drinking Water Standards.
- Proposed updates:
  - Any Groundwater Management Area (GMA) previously designated as Phase II will remain designated as a Phase II area and will never fall below a Phase II designation.
  - GMAs designated as Phase III or Phase IV may be redesignated as Phase III or Phase II once determined to fall below the required triggers.

PHASES	PERCENT OF MCL	MINIMUM PERCENT OF WELLS AT OR ABOVE PERCENT OF MCL
Phase I	<50%	N/A
Phase II	50% - <~~80~~ 75%	50%
Phase III	~~80~~ 75% - <100%	~~80~~ 75%
Phase IV	>100%	75%

For more information on triggers, please see Chapter 7 in the draft GWMP.

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HOW MANAGEMENT PLAN UPDATES ADDRESS KEY ISSUES

KEY ISSUES AND CHALLENGES	PROPOSED GROUNDWATER MANAGEMENT PLAN STRATEGIES TO ADDRESS KEY ISSUES
Climate change might impact groundwater recharge over time and affect groundwater supplies.	• Joint climate and groundwater monitoring • Soil health • Continued hydrogeologic data collection
The future demand for water use is expected to increase for municipal usage, technology industries, and power production.	• Update groundwater quantity triggers • Joint climate and groundwater monitoring
Groundwater contaminants, including nitrates, can impact drinking water and cause public health risks.	• Public health risk education • Soil health • Update groundwater quality triggers • Continued hydrogeologic data collection

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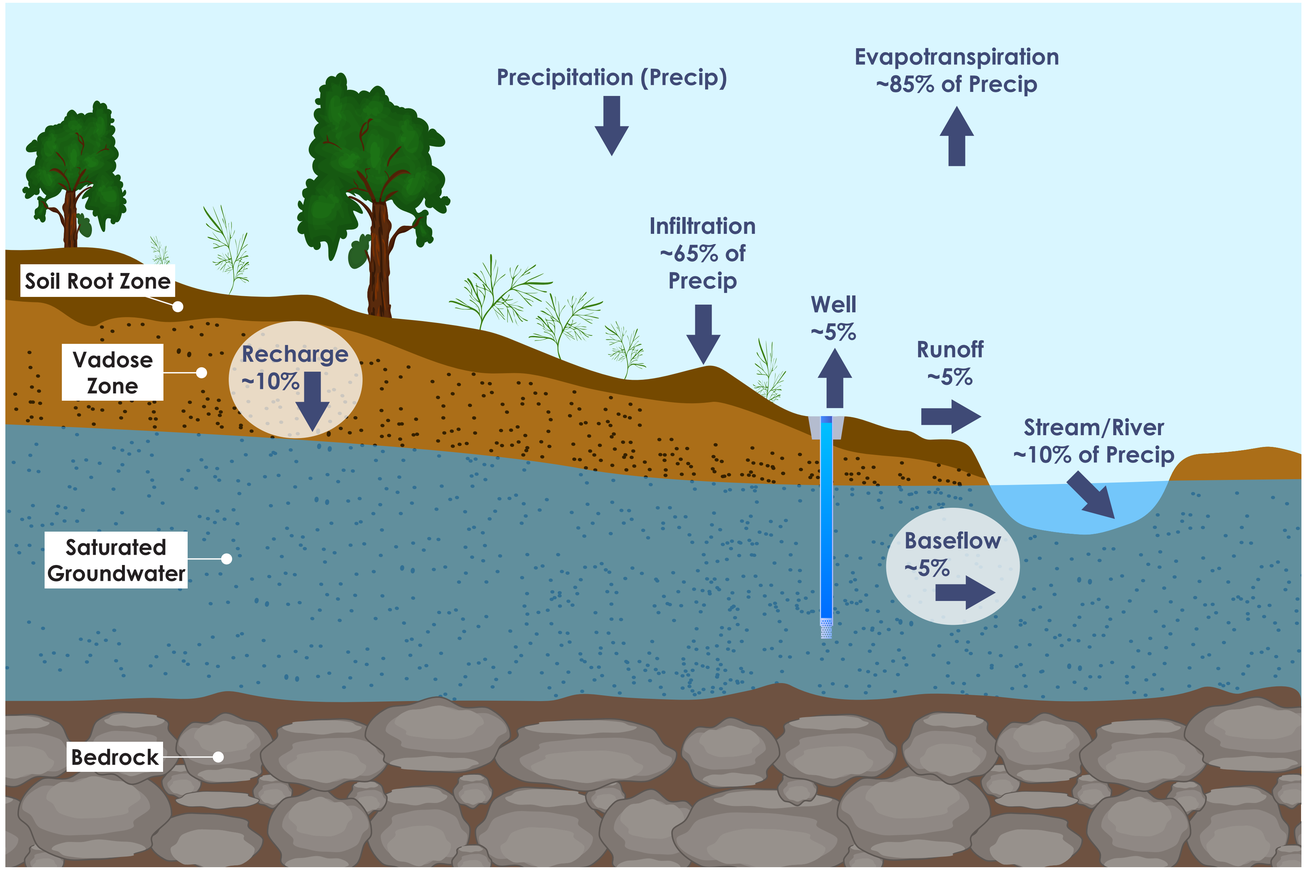
MONITORING FUTURE GROUNDWATER QUANTITY AND QUALITY



- Climate change projections include more precipitation in fall and spring and less in summer, increased summer water use, more intense storms leading to increased runoff, and longer recovery times after droughts.

- Climate variability necessitates more continuous data monitoring and collection to better understand trends, reservoir vulnerabilities, and contaminant transport.
- Precipitation and climatic data can be measured at weather stations at ground level.
- Moisture levels, quantity of nutrients, and organic matter can be measured in the root zone to determine soil health, irrigation demands, and how much water could be leaving the soil as groundwater recharge.
- Levels of nutrients, including nitrate-nitrite, can be measured at various depths in the vadose zone.
- Elevations of groundwater and quantities of nutrients or contaminants in groundwater can be measured from wells.

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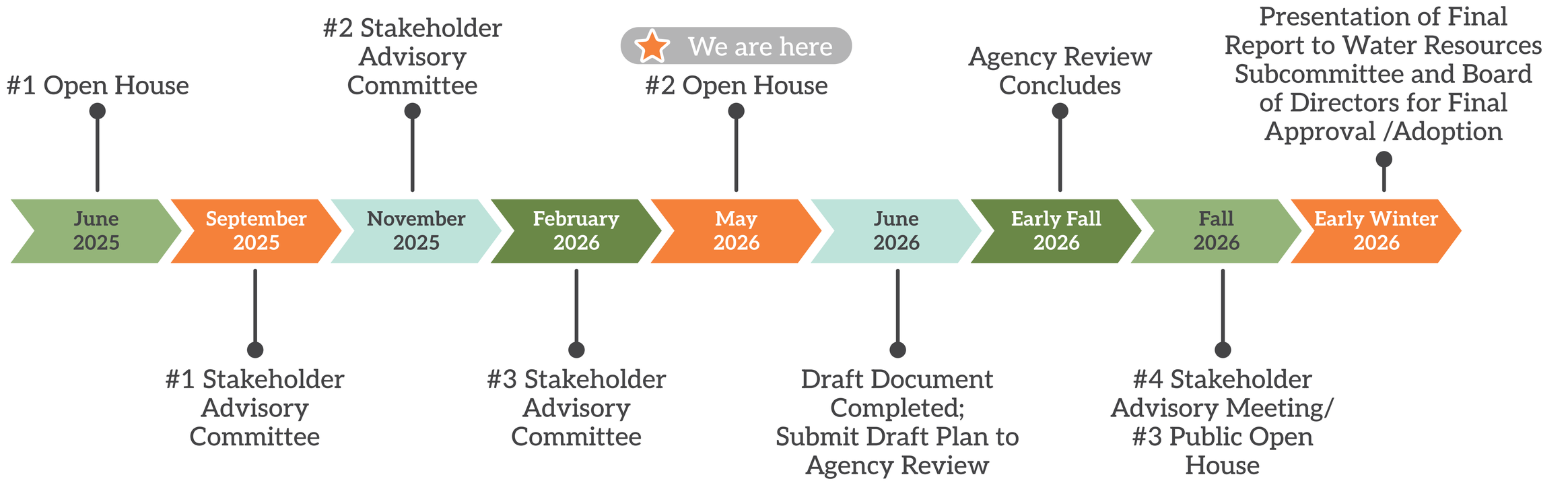
NEXT STEPS



The GWMP will be reviewed and revised regularly.

To view a draft of the GWMP, the Story Map, and to provide online comments, visit: lpsnrd.org/ground-water-management-plan

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