



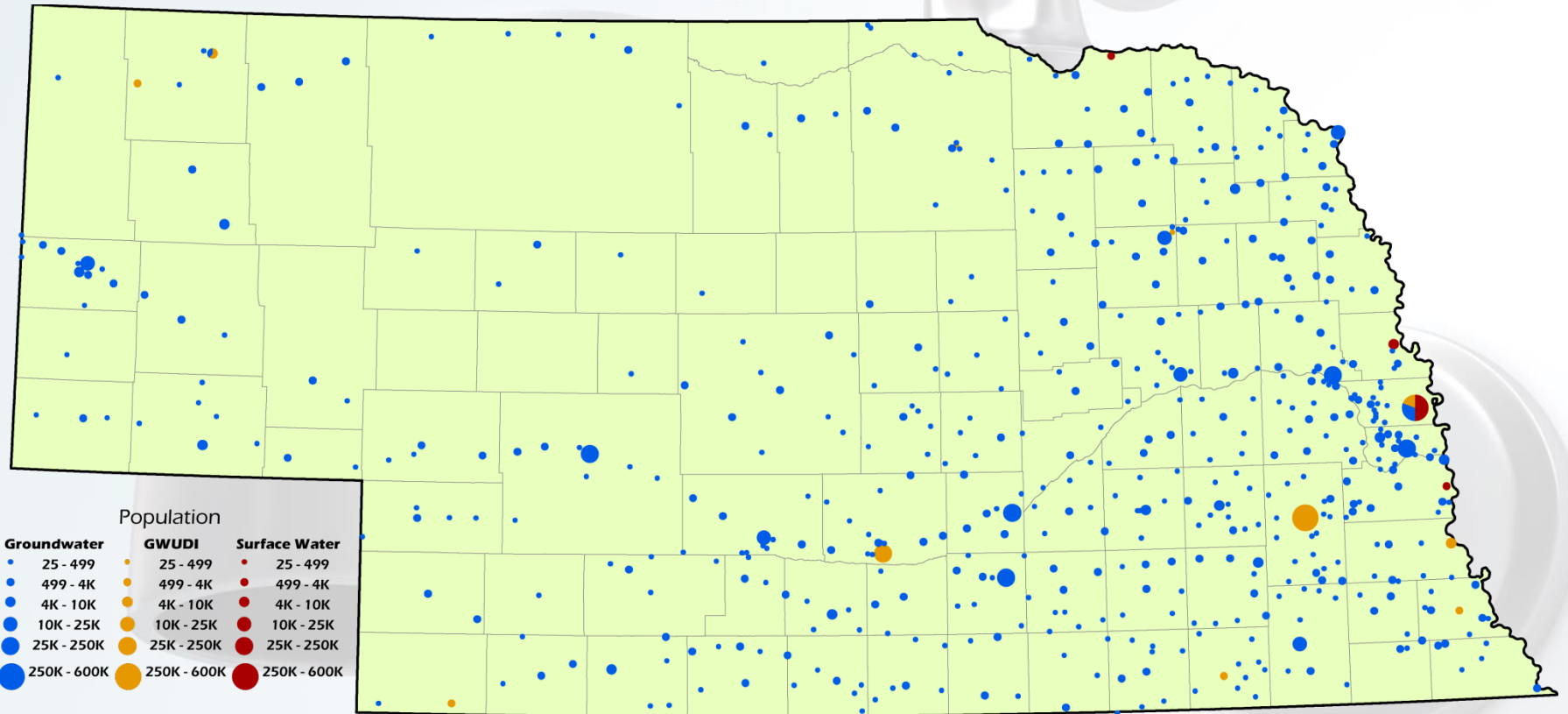
# CWA / SDWA Integration in Nebraska

Ryan Chapman   **Water Quality Assessment Section Supervisor**

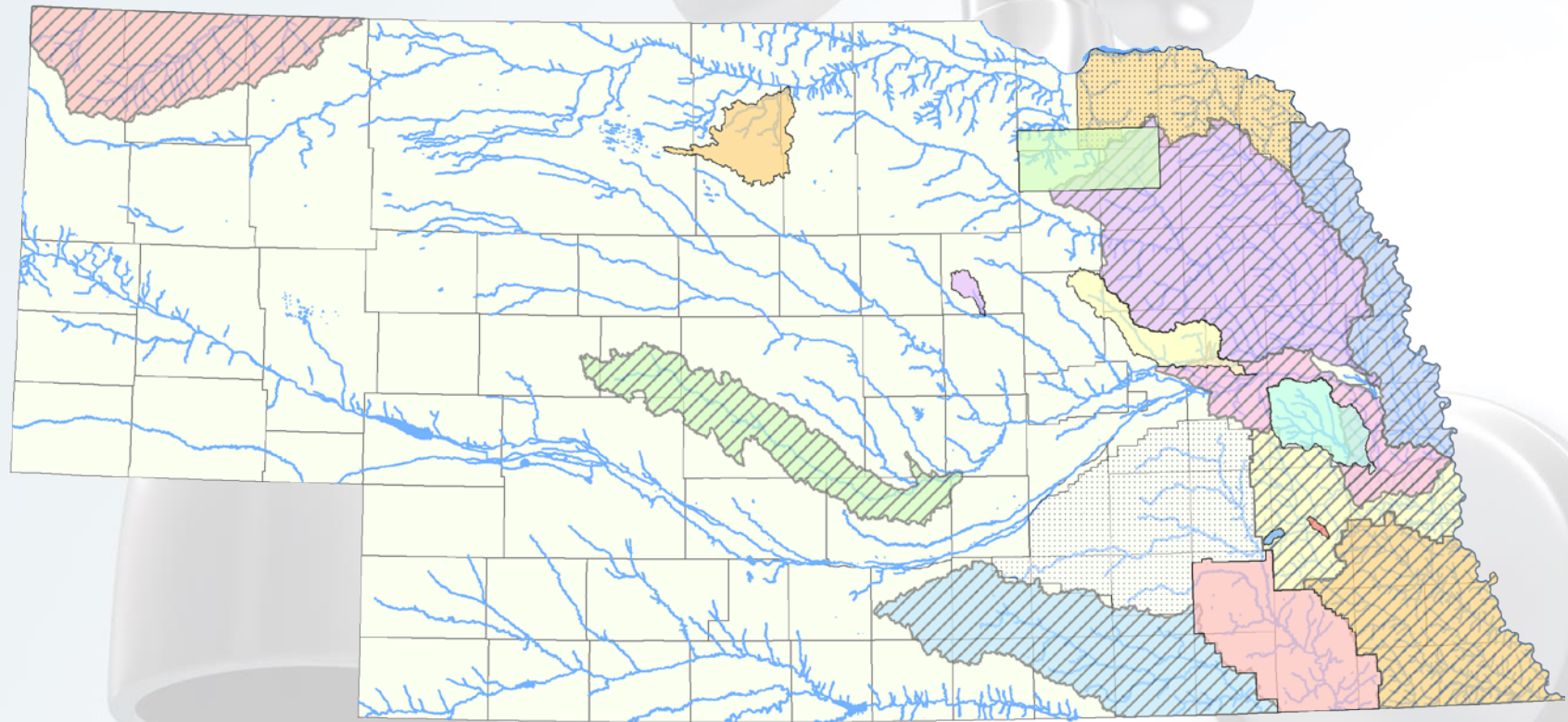
**NEBRASKA**  
DEPT. OF ENVIRONMENTAL QUALITY

# SDWA

## Community Public Water Systems



## Section 319 – 9 Element Watershed Management Plans



### Active Plans

Antelope Creek	Long Pine Creek
Bazile Groundwater Management Area	LBBNRD
Clear Creek/Pibel Lake	Shell Creek
Conestoga Lake	Wahoo Creek

### Planning in Progress

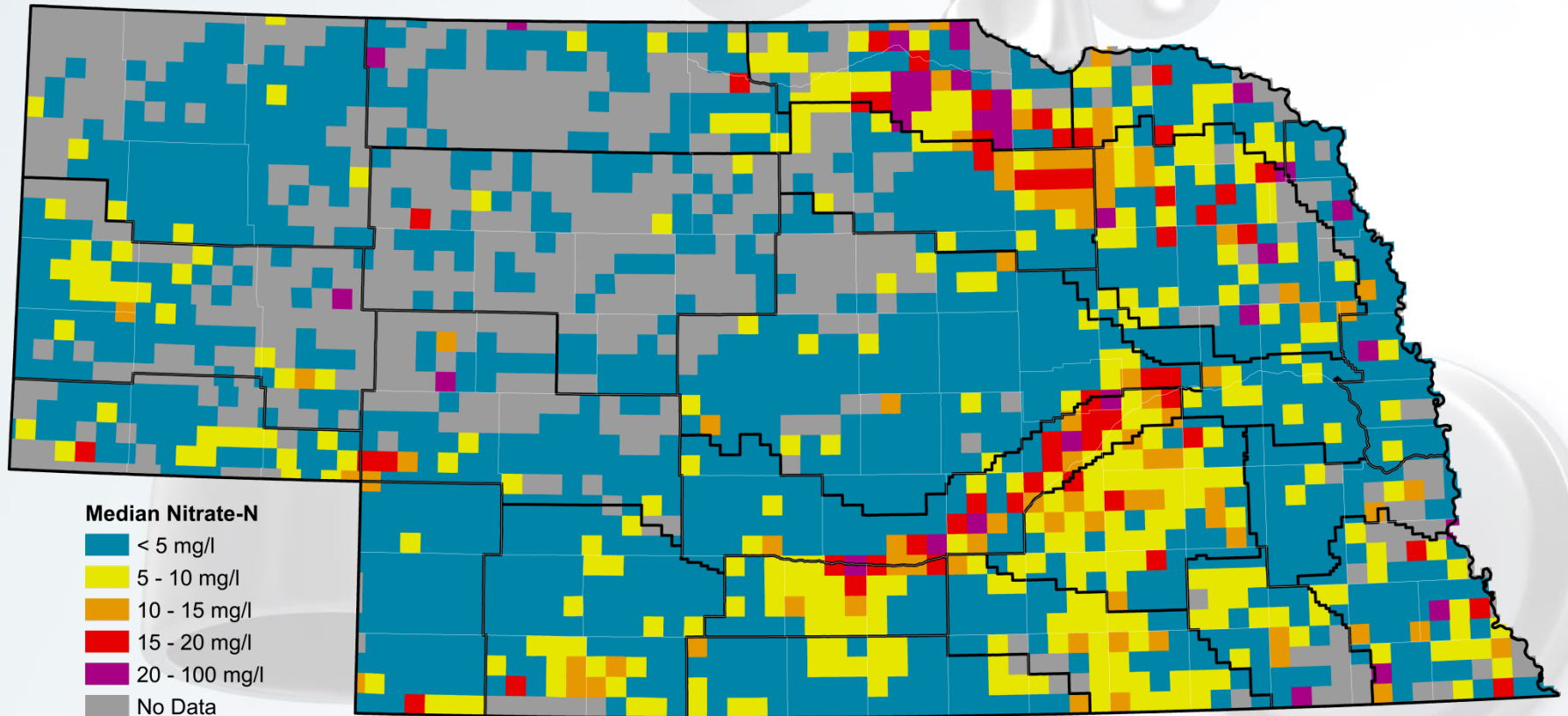
LBNRD	Nemaha River Basin
LENRD	PMRNRD
LPRCA	South Loup River
LPSNRD	White River/Hat Creek

### Potential Plans

L&CNRD
UBBNRD

# SDWA & CWA

## Common Problem - Nitrate



Median of the most recent Nitrate-N concentration by township of 19,743 wells from 1995-2015.

*Gray areas indicate no data reported, not the absence of nitrate in groundwater.*

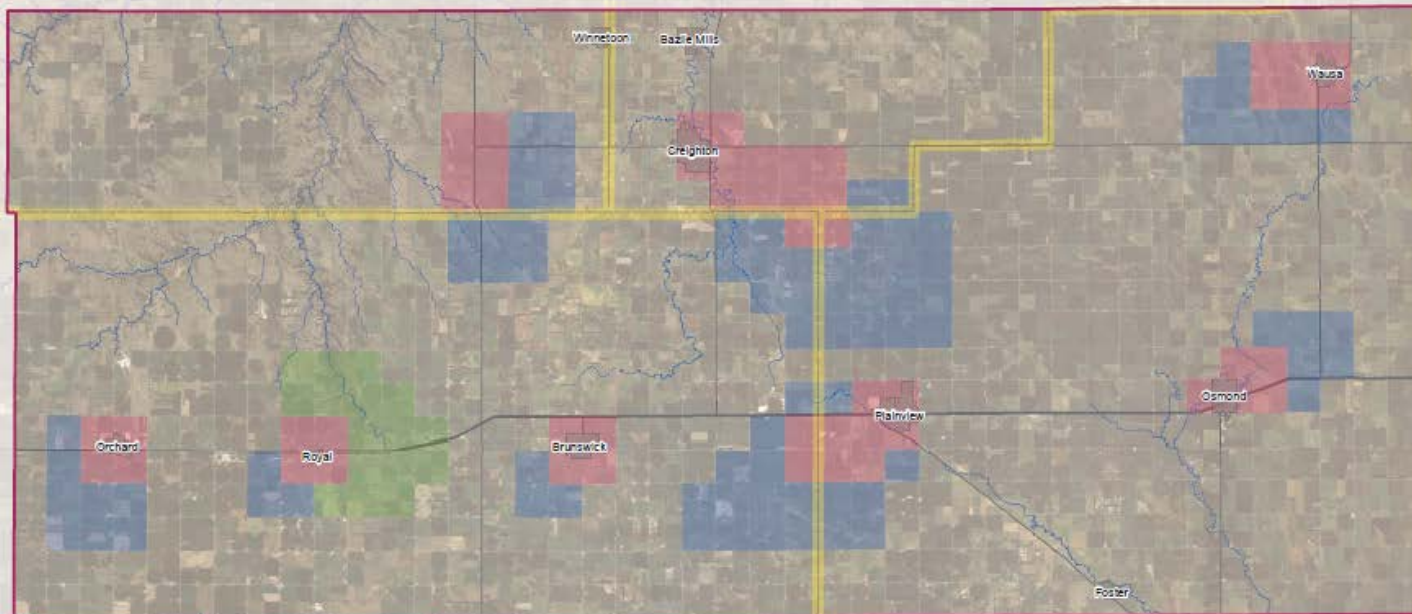
Source. Quality Assessed Agrichemical Database for Nebraska Groundwater, 2016.





## Alternative 9-Element Watershed Management Plan

### Bazile Groundwater Management Area (BGMA)





Priority Areas	Acres	Average NO <sub>3</sub> -N of most recent samples	Reduction % needed	Acres Needing BMPs
Tier 1	31,224	17.6	45%	14,051
Tier 2	53,112	14.2	30%	15,934
Tier 3	10,167	14.9	46%	4,677
Tier 4	389,337	12.6	21%	81,761
Total	483,840			116,422

#### Priority Areas

- Tier 1
- Tier 2
- Tier 3
- Tier 4

# Drinking Water Protection Management Plan

- **Plans** **SDWA** 
  - DWSRF 15% set-a-side
  - Eligible activity in NE Source Water grant
- **Implementation** **CWA** 
  - Section 319 non-point source
  - Alternative to a nine-element watershed management plan
  - Reviewed & approved by EPA Region 319 staff



# Drinking Water Protection Management Plan

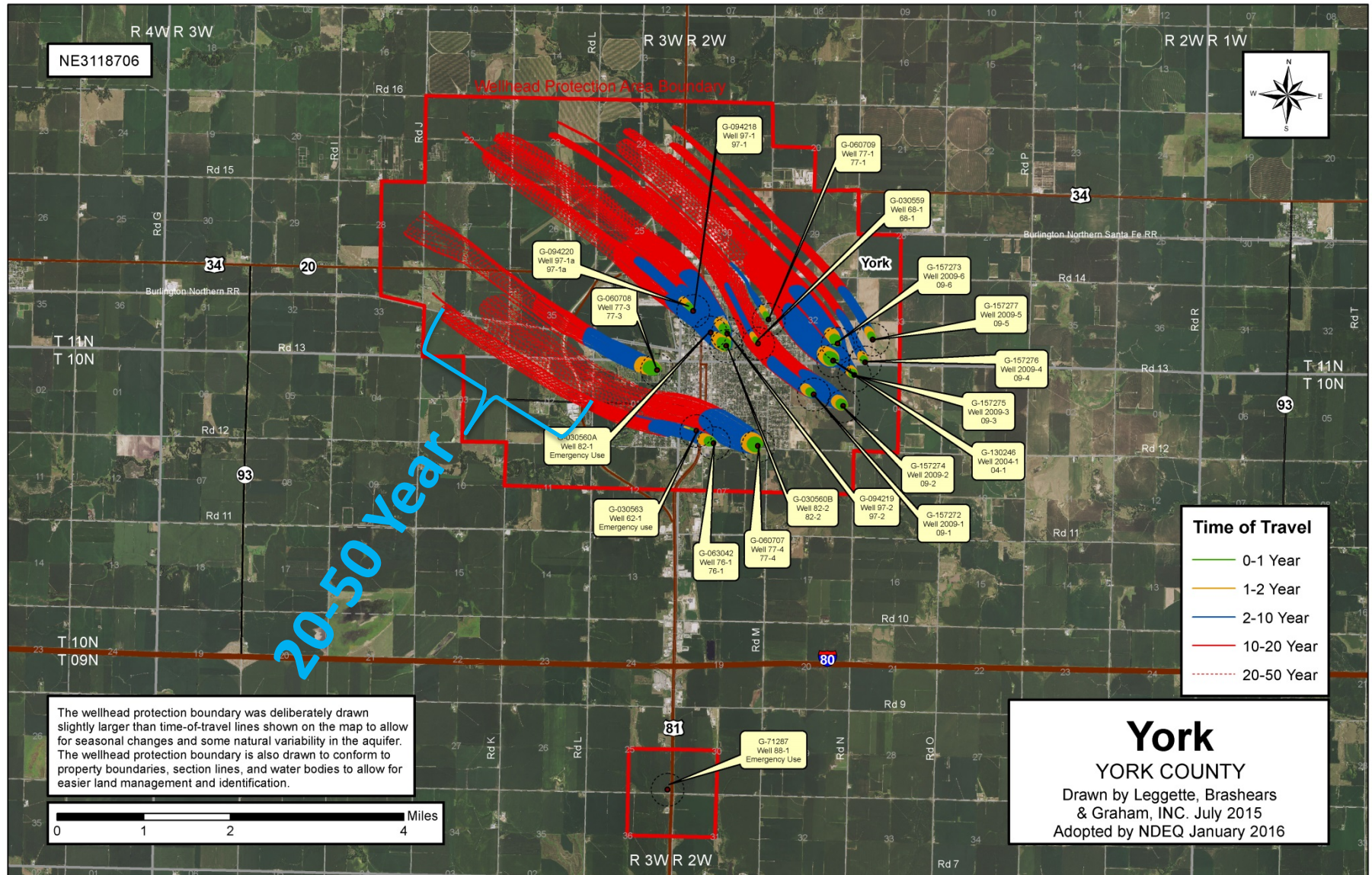
- **Expectations**

- Meet EPA's alternative to a 9-element watershed management plan (319 requirement)
- 50-year TOT based on 3D model
- Community based planning process
- Strong implementable I&E program
- Draft plan with one round of edits





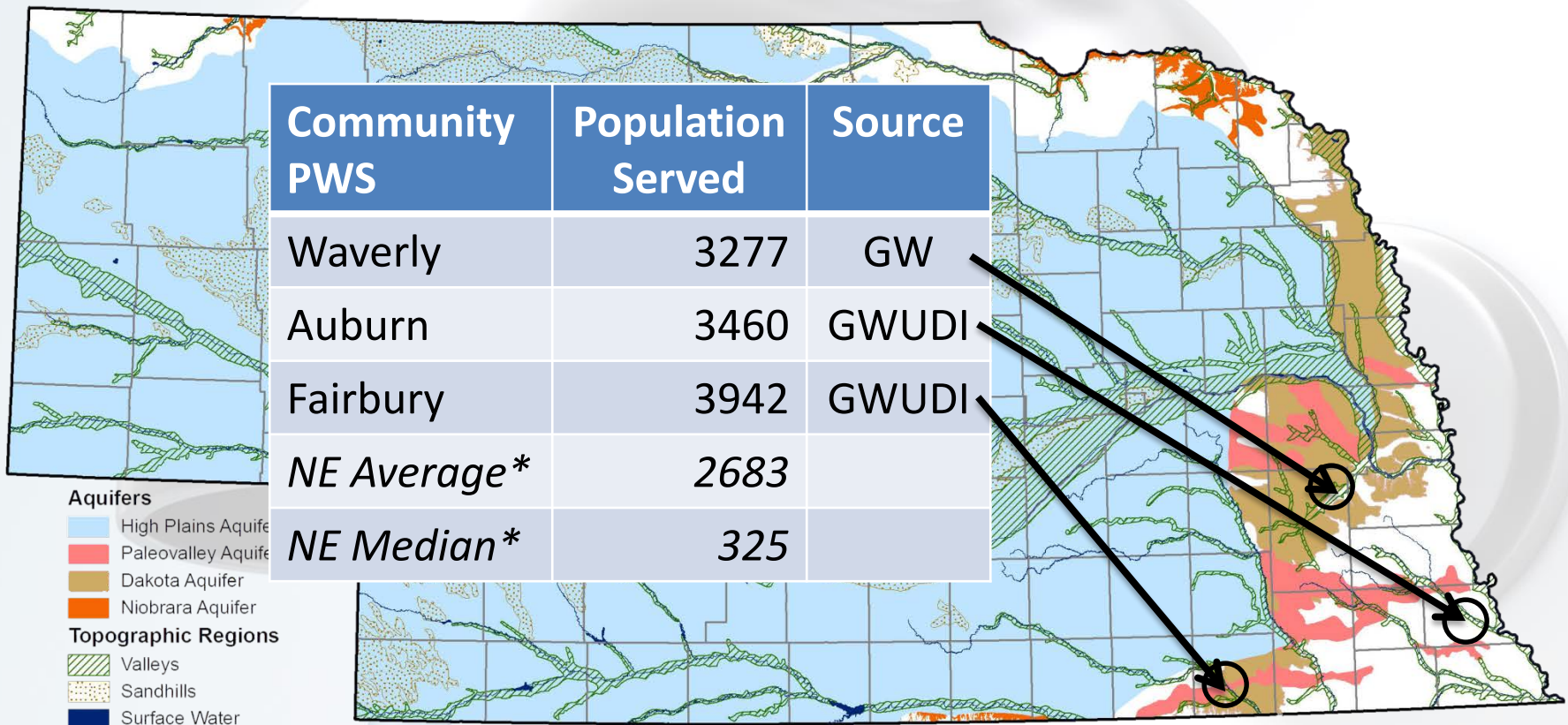
# Example 50 year time-of-travel





# Drinking Water Protection Management Plan

- Pilot on 3 communities




\*Systems with their own source of water

# NE Wellhead Protection Network

(Statewide – Source Water Collaborative)



- Began in 2001
- Coordinated by The Groundwater Foundation
  - \$15k annually **CWA**  Section 319
- Quarterly meetings throughout the state
  - Legislative Breakfast – Lincoln
  - Association of Resources Districts – Kearney
  - (2) rotating field-trip style
- 225 mailing list, 20-40 attendees average
  - County Zoning, NRDs, PWS, State Agencies





# NE Wellhead Protection Network





# NE Wellhead Protection Network

- Education Sub Committee

## Why Wellhead Protection?

**GROUNDWATER IS:**

- A major source of irrigation for agriculture.
- An important component of many industrial processes.
- A source of replenishment for lakes, rivers, and wetlands.

**85% of Nebraskans drink groundwater**

## Protecting Groundwater is EVERYONE'S Responsibility

### PROTECT IT FROM WHAT?

Urban Contaminants

Rural Contaminants

Commercial/Industrial Contaminants

Potential groundwater contaminants can come from a variety of sources: lawns, cemeteries, golf courses, transportation corridors, household chemicals, auto repair shops, dry cleaners, fuel stations, machine shops, manufacturing, landfills, sewage treatment, fuel storage, grain storage, chemigation, livestock operations, septic system failures. Wellhead protection addresses these and more.

### HOW?

**ENTERING DRINKING WATER PROTECTION AREA**

**HUSKER COUNTY**  
NEBRASKA COUNTY  
Wellhead Protection Area

Wellhead protection is an investment in your community's future. It's more than just putting together a plan - it's a roadmap for protecting your community's greatest asset, its drinking water.

Funding opportunities, such as Source Water Protection grants, are available to assist in developing and implementing a wellhead protection plan (and hiring a consultant if needed). If you already have a plan in place, you may be given priority for funding.

## WELLHEAD PROTECTION IS PROACTIVE AND COST-EFFECTIVE

Issue: Drinking Water Contamination  
Population: 500  
Treatment options:

Treatment Option	Cost per person
Proactive Wellhead Protection Efforts - \$50,000	\$100
Water Treatment Plant - \$1.15 million	\$2,300
Establish New Well Field - \$1.34 million	\$2,680
Wetland & Extraction Well - \$1.37 million	\$2,740
Regional Water System - \$1.42 million	\$2,840

*\*Treatment costs vary based on a community's specific situation.*

## WELLHEAD PROTECTION MAKES PARTNERSHIPS

Various entities and parts of a community come together to work on wellhead protection. These partnerships can extend beyond just protecting groundwater!

The Wellhead Protection process helps a community set priorities on drinking water concerns. Involving stakeholders and state/local agencies develops a line of communication that benefits all citizens. Being proactive in protecting drinking water sources through wellhead protection saves money, time, and most importantly, groundwater!

### CONTACT:

Nebraska Department of Environmental Quality  
Wellhead Protection Program  
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P.O. Box 98922  
Lincoln, NE 68509-8922  
402-471-0096  
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ndeq.moreinfo@nebraska.gov  
www.deq.state.ne.us

The Nebraska Wellhead Protection Network brings together organizations and agencies in Nebraska working to support communities as they develop and adopt wellhead protection programs. The Groundwater Foundation serves as facilitator for the Network, which is funded by the Nebraska Department of Environmental Quality.

# NE Wellhead Protection Network



- Two Printings
    - **CWA** 💰 Section 319
    - **SDWA** 💰 DWSRF
- 15% set-a-side



# CWA Other projects

- **Funded with CWA section 319**
  - Funded staff at local level to write WHP plans
  - Decommission PWS wells – explosion abandonment
  - Aquifer Study
  - BMPs: Chemigation, nitrogen stabilizers, split application of N, efficient irrigation

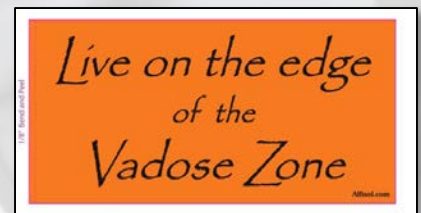
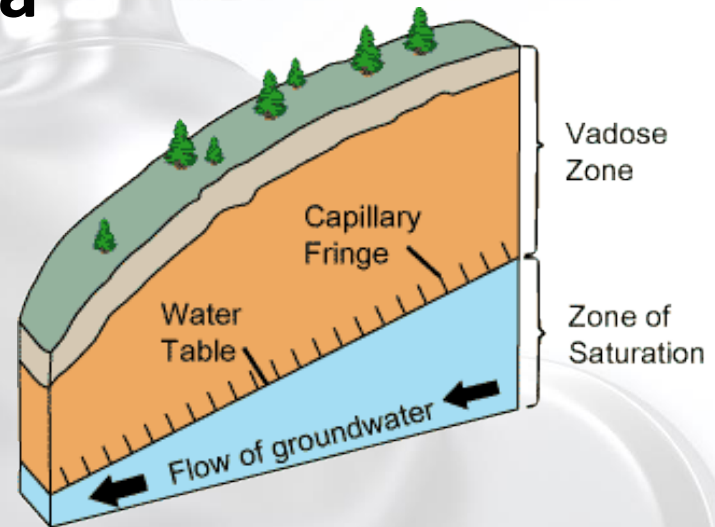




# Other projects

## *Statewide Vadose Zone Project*

- **Collect & share existing data**
  - online database
- **Collect and analyze cores**
  - Chemical/physical
  - Water retention properties
- **Predict transport rates**
- **Standard protocols for WHP scale**
  - Pilot with a community water system
  - SOPs, QAPPs, bidding documents, contracts

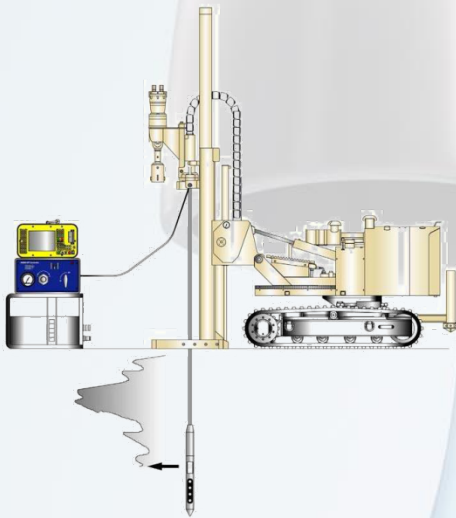


# Other projects

## Statewide Vadose Zone Project

- Funding

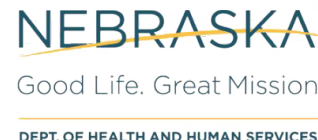
- **SDWA** 💰 DWSRF 15% set-a-side
- **CWA** 💰 Section 106 – supplemental monitoring
- **CWA** 💰 Section 319 – non-point-source
- Local: NET, NRDs, Cities, UNL



# Future Endeavors

? 💰 SDWA & CWA 💰 ?

- **Risk Communication Workshops - Nitrate**
  - Science based approach for effective communication
    - High concern, low trust situations
    - Sensitive or controversial situations
  - Improve participation in voluntary projects/BMPs
- **Statewide Outreach Campaign - Nitrate**
  - Plan to: educate, inform, and coordinate local contacts
  - Improve participation in voluntary projects/BMPs





An aerial map of Nebraska, color-coded with green, yellow, and blue regions. The word "Questions?" is overlaid in the top left.

# Questions?

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