

# Memorandum

To: Papio-Missouri River Natural Resources District Programs Projects and Operations Subcommittee  
From: Paul W. Woodward, PE, Groundwater Management Engineer  
Date: June 4, 2021  
Re: Lower Platte River Water Quality and Springfield Drinking Water Management Protection 319 Grant Applications

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The Environmental Protection Agency (EPA) and Nebraska Dept. of Environment and Energy (NDEE) approved the Water Quality Management Plan for the Lower Platte River Corridor in 2019. This plan focuses on limiting bacterial contamination of tributaries in the Lower Platte River watershed while also addressing associated contaminants such as sediment and nutrients. Priority sub-watersheds in this plan are shown in the enclosed Figure 28 and include Buffalo Creek, Turtle Creek, Turkey Creek and Zwiebel Creek in the Papio-Missouri River and Lower Platte South NRDs.

Best management practices identified in the plan that can reduce E. Coli bacteria loadings include CRP grasslands, cover crops, stream buffer strips, grassed waterways, and septic tank replacements. Other practices include information and education and the hiring of a watershed coordinator position. Funding for these water quality improvements can be supported by several agencies and programs, but also by a 319 Nonpoint Source Pollution Management project through NDEE. Maximum grant funds over a 3-year period are \$300,000 for up to 60% maximum cost-share. This would mean local NRD funding less than \$200,000 over 3 years, see attached table of estimated funding.

In the Turtle Creek (Springfield Creek) watershed, the City of Springfield in cooperation with NDEE, EPA and the NRD recently approved a Drinking Water Management Protection Plan. This plan also qualifies conservation practices for 319 Nonpoint Source grant funding which help prevent nitrates from leaching into the groundwater resources of the wellhead protection (WHP) area. This WHP area is shown in the attached figure.

Best management practices to prevent nitrates for this area are very similar to those for surface water and include: CRP grasslands, cover crops, buffer strips, nutrient management reporting, urban stormwater management, residential rain sensors, vadose zone monitoring, and new groundwater monitoring wells. This 319 Grant Application would also include funding for education and the other half of the watershed coordinator. The maximum grant amount for this application would also be \$300,000 over three years, see attached table of estimated funding.

**Management recommends that the Subcommittee recommend to the Board that the General Manager be authorized to execute and submit two 319 Nonpoint Source Pollution Management grant applications; one for Water Quality Management in the Lower Platte River sub-watersheds in Sarpy County; and the second for the Springfield Drinking Water Protection Area, both not to exceed \$300,000 each in grant funding over 3 years and a maximum District contribution of \$400,000 over 3 years, subject to changes deemed necessary by the General Manager and approval as to form by District Legal Counsel.**

**Figure 28. Priority Watersheds**

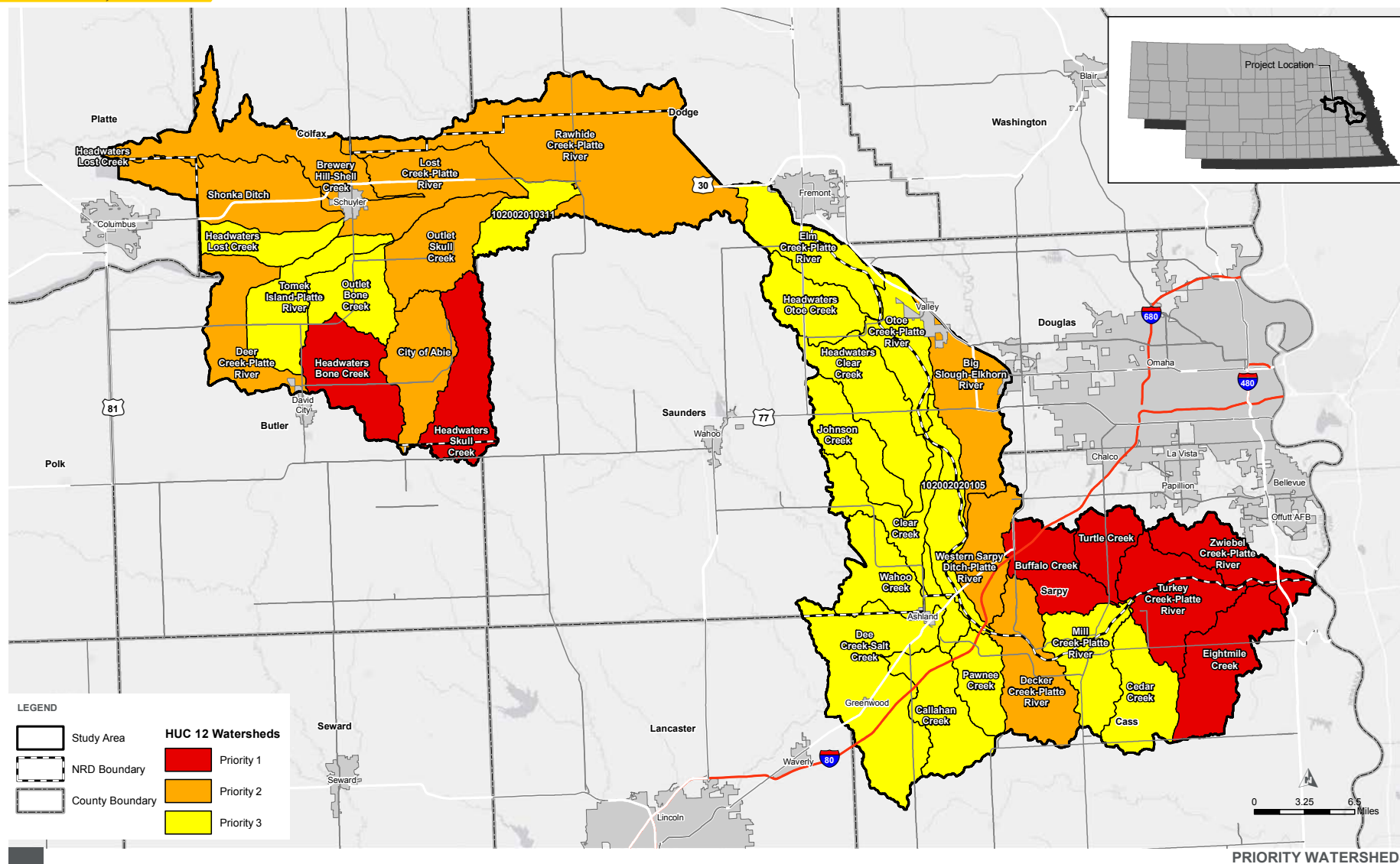


FIGURE 27

WATER QUALITY MANAGEMENT PLAN FOR THE LOWER PLATTE RIVER CORRIDOR

Lower Platte 319 Grant App




| BMP   | Quantity | NRCS          | FSA           | NBS           | NRD           | 319 Grant     | Landowner    | TOTAL           |
|---|----------|---------------|---------------|---------------|---------------|---------------|--------------|-----------------|
| CRP (for 10 years)                          | 120      | \$ 54,000.00  | \$ 252,000.00 | \$ -          | \$ 72,000.00  | \$ 108,000.00 | \$ 6,000.00  | \$ 492,000.00   |
| COVER CROPS - Multi-species for 3 years     | 400      | \$ 40,344.00  | \$ -          | \$ -          | \$ 14,686.08  | \$ 22,029.12  | \$ 8,536.80  | \$ 85,596.00    |
| BUFFER STRIPS - Natives (5 years)           | 115      | \$ 51,750.00  | \$ -          | \$ 138,000.00 | \$ 34,500.00  | \$ 51,750.00  | \$ 5,750.00  | \$ 281,750.00   |
| Grassed Waterways                           | 25       | \$ 66,400.00  | \$ -          | \$ -          | \$ 18,588.18  | \$ 27,882.26  | \$ 19,918.31 | \$ 132,788.75   |
| Septic Tank Replacement                     | 15       | \$ -          | \$ -          | \$ -          | \$ 30,000.00  | \$ 45,000.00  | \$ -         | \$ 75,000.00    |
| Watershed Coordinator - 1/2 FTE for 3 years | 3        | \$ -          | \$ -          | \$ -          | \$ 30,000.00  | \$ 45,000.00  | \$ -         | \$ 75,000.00    |
|   |          |               |               |               |               |               |              |                 |
| SUB-TOTALS                                  |          | \$ 212,494.00 | \$ 252,000.00 | \$ 138,000.00 | \$ 199,774.26 | \$ 299,661.38 | \$ 40,205.11 | \$ 1,142,134.75 |

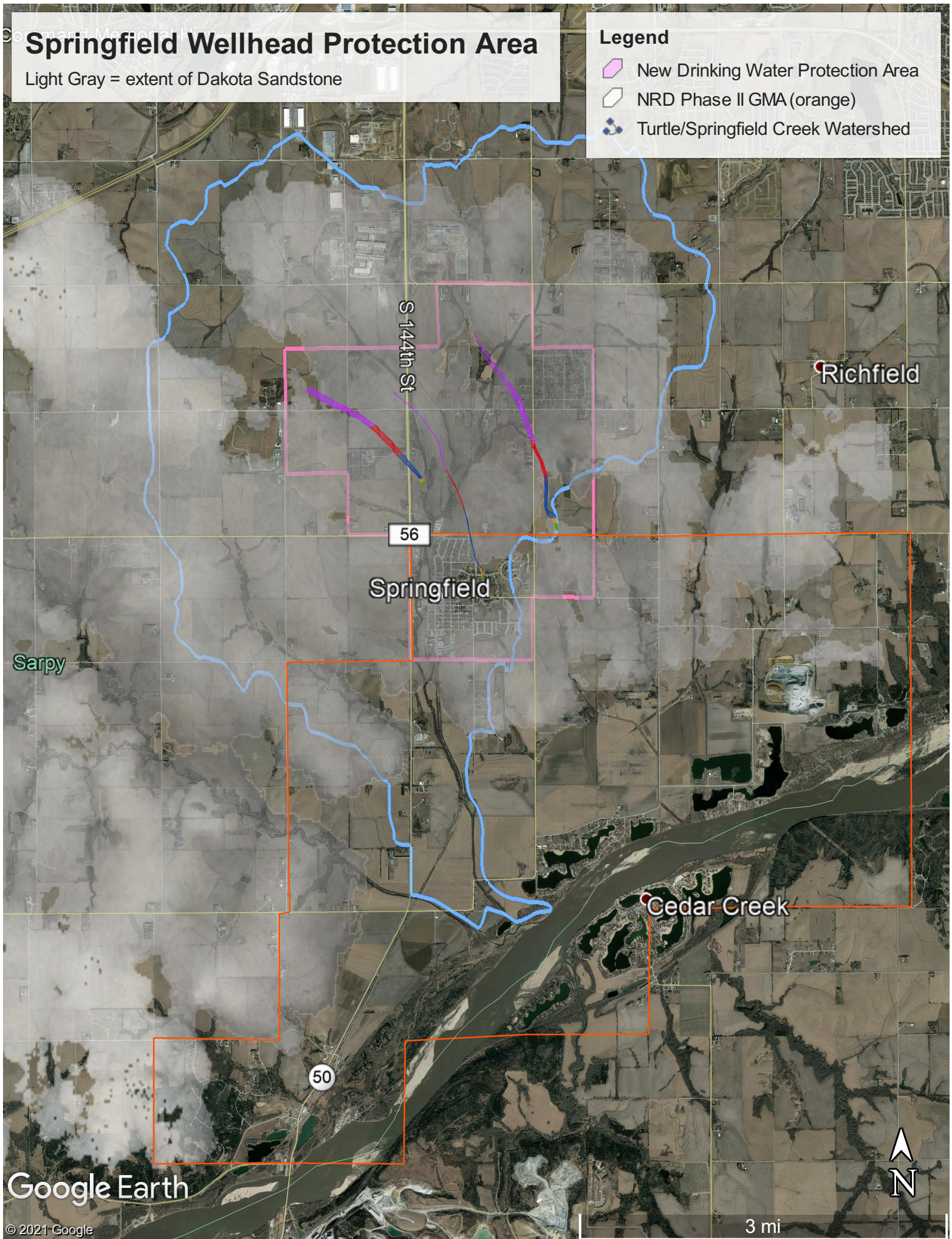


# Springfield Wellhead Protection Area

Light Gray = extent of Dakota Sandstone

## Legend

-  New Drinking Water Protection Area
-  NRD Phase II GMA (orange)
-  Turtle/Springfield Creek Watershed



Google Earth

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3 mi



Springfield 319 Grant App

| BMP                                     | Quantity | NRCS          | FSA           | NBS           | NRD           | 319 Grant     | Springfield  | Landowner   | TOTAL           |
|---|----------|---------------|---------------|---------------|---------------|---------------|--------------|-------------|-----------------|
| CRP                                     | 90       | \$ 45,000.00  | \$ 189,000.00 | \$ -          | \$ 54,000.00  | \$ 81,000.00  | \$ -         | \$ -        | \$ 369,000.00   |
| COVER CROPS - Multi-species for 3 years | 500      | \$ 50,430.00  | \$ -          | \$ -          | \$ 29,880.00  | \$ 16,014.00  | \$ -         | \$ 3,557.00 | \$ 99,881.00    |
| BUFFER STRIPS - Natives + Pollinator    | 120      | \$ 60,000.00  | \$ -          | \$ 144,000.00 | \$ 72,000.00  | \$ 108,000.00 | \$ -         | \$ 6,000.00 | \$ 390,000.00   |
| Nutrient Management - Basic             | 800      | \$ 5,200.00   | \$ -          | \$ -          | \$ 1,040.00   | \$ 1,040.00   | \$ -         | \$ -        | \$ 7,280.00     |
| Stormwater BMPs - Urban                 | 1        | \$ -          | \$ -          | \$ -          | \$ 4,000.00   | \$ 12,000.00  | \$ 4,000.00  | \$ -        | \$ 20,000.00    |
| Vadose Zone Monitoring                  |          | \$ -          | \$ -          | \$ -          | \$ 8,000.00   | \$ 12,000.00  | \$ -         | \$ -        | \$ 20,000.00    |
| Residential Rain Sensors                | 200      | \$ -          | \$ -          | \$ -          | \$ 4,000.00   | \$ 12,000.00  | \$ 4,000.00  | \$ -        | \$ 20,000.00    |
| GW Quality Monitoring Well              | 1        |               |               |               | \$ 4,000.00   | \$ 12,000.00  | \$ 4,000.00  |             | \$ 20,000.00    |
| Watershed Coordinator - 1/2 FTE         | 3        | \$ -          | \$ -          | \$ -          | \$ 15,000.00  | \$ 45,000.00  | \$ 15,000.00 | \$ -        | \$ 75,000.00    |
|   |          |               |               |               |               |               |              |             |                 |
| SUB-TOTALS                              |          | \$ 160,630.00 | \$ 189,000.00 | \$ 144,000.00 | \$ 191,920.00 | \$ 299,054.00 | \$ 27,000.00 | \$ 9,557.00 | \$ 1,021,161.00 |