

Nemaha Natural Resources District

Insight

**ANNUAL
REPORT
2019**

Groundwater Rules are Topic of February 3rd Hearing

Nemaha NRD officials will provide information and accept testimony about the proposed revisions to the District's Groundwater Management Area Rules and Regulations for Groundwater Quantity Management Areas. An informal question-and-answer session will be held from 5:00-6:00 p.m. on Monday, February 3, 2020. At 6:00 p.m. a formal public hearing will begin to accept official testimony from hearing attendees on the revisions. Both sessions will take place at the Nemaha NRD's office located at 62161 US Hwy 136 just east of Tecumseh. The changes and additions to the rules will address well spacing, well permit application requirements, agricultural irrigation water transfers, and the identification of five principle aquifer regions.

This is a general description of the proposed changes. A complete copy of the rules and revisions is available on the NRD's website (nemahanrd.org) or by contacting the office in Tecumseh (402-335-3325) Monday-Friday from 8:00 a.m. to 4:30 p.m.

Anyone unable to attend or with lengthy testimony is encouraged to submit such testimony in writing by 4:30 p.m. Wednesday, February 12. The NNRD board of directors will consider all testimony and decide whether to adopt or rescind the changes/additions during their February 13, 2020, regular meeting which begins at 7:00 p.m.



11 Seats Up for Election on NRD Board

Just over half the seats on the Nemaha NRD board are up for election this year. Filing deadlines are coming up with the incumbent deadline on February 18, and non-incumbents must file by March 2. Filing forms are due in the Secretary of State's office by these dates.

Ten of the positions are for 4-year terms, and one will run for a 2-year term since a vacancy was filled in this spot within the first 19 months of the term. Directors are elected from within their subdistrict boundaries. Incumbents whose seats are up this year include the following:

Subdistrict

1. Robert Lassen, Firth
2. Mike McDonald, Palmyra
3. Orval Gigstad, Syracuse
4. Dan Hodges, Julian
- 4* Jessica Donnelly, Nebraska City
5. Randy Fox, Nebraska City
6. Robbie Bohling, Johnson
7. Mike Speece, Auburn
8. Eldon Snoke, Humboldt
9. Jon Keithley, Falls City
10. Jim Gerweck, Falls City

*Two-year term

The Nemaha NRD has 21 directors, and they serve a four-year term with half the board's membership up for election each even numbered year. Board meetings are the second Thursday each month in Tecumseh. Directors receive per diem and reimbursement of expenses. Maps and descriptions of each subdistrict are available at county election offices, on the NRD's website, or by contacting the Nemaha NRD. Directors are elected at the May primary and/or the November general election.

Blue Green Algae Alert Level Changing

Blue green algae in water bodies is becoming a greater problem nationwide, so EPA has dropped the health alert level from 20 to 8 parts-per-billion (ppb) of the microcystin toxin. This change will be used statewide when evaluating whether body contact activities such as swimming and wading should be allowed in lakes. It will likely impact beach areas of the parks in the Nemaha NRD. Health alerts could occur more frequently, particularly at Kirkman's Cove and Iron Horse Trail Lake which have had a history of high toxin levels. NRD lakes fared well in 2019 as Kirkman's Cove was never on alert level, and Iron Horse

exceeded the 20 ppb level one time.

District operated lakes are sampled every Monday during the recreation season with results posted on Friday of the same week. It should be noted that algae conditions can change rapidly, and a visual inspection should always be used by swimmers. If the algae appear to be present, it is best to be cautious and stay out of the water even if a health alert has not been posted. Pets are very susceptible to health issues since they often drink the water. Blue green algae is a naturally occurring bacteria; and large water bodies, particularly reservoirs, are not feasible to treat.

Lakes are also tested weekly for fecal coliform bacteria which is present in all animals including humans and tends to increase dramatically following rainfall events. Levels usually return to baseline within a few days, so it makes it difficult to test for. Unlike blue green algae, there are no visual signs of coliform bacteria. While swimming, wading, and skiing are part of the summer outdoor experience, always remember lakes are not treated swimming pools; and there some potential health risks to consider.

The District posts the latest status of our lakes on our website and Facebook page.

Annual Park Permits ON SALE NOW

Nemaha NRD park permits, required at Iron Horse Trail Lake, Kirkman's Cove, Wirth Brothers Lake, and Duck Creek recreation areas are now on sale. Permits cost \$15 for the first and \$8 for a second permit; both vehicles must be titled to the same owner(s). They are valid through December 31, and you may purchase them in a variety of ways. The quickest is either through the NRD's website with your major credit card or by stopping in our office in Tecumseh. You may also print an application from our website and mail it with your check or money order and self-addressed, stamped envelope. Permits are often mailed same-day if ordered through the website but could take up to 14 days if you mail your application.



FEBRUARY

- 3 Groundwater Rules & Regulations Public Hearing, NRD Office, Tecumseh Informal Info Session-5:00 p.m.; Hearing-6:00 p.m.
- 13 NNRD Board Meeting, Tecumseh (7:00 p.m.)
- 17 Presidents Day Holiday, NNRD Office Closed
- 18 Incumbent Filing Deadline

MARCH

- 2 Non-Incumbent Filing Deadline
- 3 Southeast Region Envirothon, Beatrice
- 10-11 Water Celebration, Peru State College
- 12 NRD Board Meeting, Tecumseh (7:00 p.m.)
- 14-18 NARD Washington, DC, Conference
- 17 Chemigator Certification Training, NNRD Office (Contact Nathan Mueller 402-821-2151 for details)

APRIL

- 9 NNRD Board Meeting, Tecumseh (8:00 p.m.)
- 22 Earth Day
- 24 Arbor Day (NNRD Office is open)
- 29 Nebraska Envirothon, Lake Wanahoo (Wahoo)

Annual Report:-----

2019 Highlights

Watershed Repair:

The District is responsible for operating and maintaining over 350 watershed dams. Annually about \$250,000 is budgeted for various repairs. In FY19 just over \$175,000 went toward major repairs on 11 dams and general maintenance on others. One of the repairs addressed erosion of the plunge pool area at the Wilson Creek 12-T structure northwest of Syracuse. (Photo)



Rehabilitation of Upper Big Nemaha 25-C:

Also known as Doctor's Lake, this 12-month project near Adams involves upgrading a large, concrete chute through the center of the dam. Dixon Construction from Correctionville, Iowa, was hired to complete the project at a cost of \$2.5 million. Federal funds will pick up 65% of the cost, and the project should reach completion early next fall.

Small Dams Program:

In October a private flood control structure was built with cost-share funds on property owned by Galen & Mary Ann Haug near Steinauer. One of the dam's many benefits is flood control to Highway 50 about ½ mile downstream. FYRA Engineering of LaVista and Tim Sisco Construction from Sterling provided engineering and construction services.

Recreation:

Annual Park Permits Issued: 2,134

Total Park Permit Revenue from both annual and two-day permits: \$33,781.50

Annual permit sales remained close to 2018 numbers, though permit sales climbed almost 70% since Duck Creek Recreation Area opened in spring, 2018. Duck Creek remains popular with day-users who enjoy fishing, kayaking, and using the playgrounds and picnic areas. Electric RV camping is always high at Iron Horse Trail Lake due to the limited number of sites. Unfortunately, power limitations do not allow for adding pads. Camping at Kirkman's Cove appears to have decreased, possibly due to the wet summer weather.

Here are some of the 2019 recreation area highlights:

- New additions to the NRD recreation areas included two concrete restrooms at Kirkman's Cove which both replaced aging wood facilities. The new restrooms were installed in the day use area and near the boat ramp. Only a few of the original, wood restrooms remain at Kirkman's Cove and Iron Horse; it is hoped that all those can be replaced in the next 2 to 3 years.
- Park users at Iron Horse might notice that rock rip rap was installed on the round island below the electric RV camping area. It was originally designed as a boat mooring area; however, extensive erosion was occurring and needed to be addressed. The District is also planning to replace the playground set near the beach at Iron Horse this spring.
- In recent years the NRD has received numerous inquiries about RV camping areas at Wirth Brothers Lake near Tecumseh. A single, primitive RV pad was installed in the park in 2019; and depending on use, a few more may be considered in the future.
- A maintenance building was completed at Duck Creek to house equipment and supplies used both at the park and on nearby projects.
- Visitors to Kirkman's Cove, Iron Horse Trail Lake, and Wirth Brothers Lake will also notice new, updated signage at these parks.
- Last spring camping areas at Duck Creek and Kirkman's Cove were opened early to accommodate those displaced by the floods. Most were folks who lived on the other side of the Missouri River but worked in Nebraska.



Iron Horse Invasive Tree Removal Project



Over the past year the District worked with the Nebraska Game and Parks Commission to remove invasive tree species on 170 acres of property at Iron Horse Trail Lake Recreation

Area. The project goal was to remove invasive trees such as red cedar, Osage orange, and locust to improve present and future stands of desirable oaks, walnuts, and hickory. Although many of the desired hardwoods were mature, many smaller trees of those species are growing in the understory and will replace the larger trees as they grow. Unfortunately, the undesirable species out compete the smaller hardwoods and if not controlled, will eventually take-over the ecosystem. It will also allow for better stands of native grass which will create an improved habitat for wildlife.

Due to wet weather the project took longer than expected. Over the next year the NRD will burn the tree piles and plant native grass. Total cost to complete the tree removal was \$50,000 with Game and Parks providing 75% of that cost.

Steamboat Trace Trail

It was not a good year for the Steamboat Trace. Missouri River flooding impacted almost 12 miles of the 22-mile trail. Unfortunately, due to trail damage and continuous flooding, the entire trail was closed in 2019. The NRD has been working with FEMA to secure funds for debris cleanup and repairs. After inspections were completed, it was determined that most of the trail fared better than expected



with a couple of notable exceptions. Most of the damage north of Peru was the result of the failure of the Peru levee; and if the levee is not repaired, that area will be subject to regular flooding multiple time per year. Floodwaters also took out several hundred feet of trail south of Peru near the Rollie Sherman Memorial Area, so major repairs to that segment will be required. The trailhead in Peru also sustained damage.

Status of the trail for 2020 is currently unknown. The location of the worst damage makes it difficult to open a continuous section of the trail for public use. NRD staff has started work on the debris cleanup and hopes to have that completed by spring. Please check the NRD website or follow us on Facebook for the latest status and information regarding the future of the trail.

Duck Creek Sediment Basin Project

The final component of the Duck Creek project west of Peru is the construction of a 6.5-acre sediment basin south of the main reservoir. When complete the structure will hold around 35 acre-feet of sediment, which normally would have ended up in the main reservoir. It will extend the time the public can enjoy using the lake in the recreation area and help maintain the high water quality that is presently experienced.

Design on the project was completed by NRCS in 2014. In 2017 the NRD applied for and received funds from the federal Watershed Protection and Flood Prevention Program. Having the plans completed greatly increased the NRD's ability to receive the funding. Construction on the project should begin this summer and is expected to take 2 to 3 months to complete. Estimated cost of the project is \$250,000 which will all be funded by the grant. The sediment basin is on private property, and there will be no public access.

Conservation Assistance:

Combined funds of \$218,635 from Nebraska Soil & Water Conservation Program (SWCP) and NNRD funds provided up to 50% cost-share for:

137,410 linear feet of terraces
9.02 acres of grass waterways
33,069 linear feet of tile
1,450 windbreak trees

Sign-up is underway now for 2020-21 funding. Contact your local NRCS to submit your application. Deadline is June 1.

Nebraska Buffer Strip Program:

Over 1,050 acres in the Nemaha NRD were enrolled in the Nebraska Buffer Strip Program in FY19, which provides annual payments for grass filter strips or riparian forest buffers along vulnerable surface water resources. These acres were earning a combined \$72,500 in annual payments. Funds are still available. Sign up at your local NRCS office.

Trees & Grass Drilling Programs:

Last spring's weather played havoc with the beginning of spring tree planting which was pushed to the end of April. Approximately 13,650 seedlings were sold last year with the NRD's tree crew planting 6,875 at 10 different sites.

Even with all the moisture last spring, crews were able to drill 17.5 acres at two sites. Applications for spring drilling are due each year by March 1; fall applications must be submitted by October 1.

2019 Highlights - Continued

Information & Education:

Activities that the Nemaha NRD conducted or participated in during 2019:

- Water Celebration – 411 fifth graders participated in water related activities at this event held at Peru State College each spring. NRD staff present an activity each year.
- Third Grade Plant-A-Tree – 750 trees distributed to third graders at 14 schools
- Envirothon – NRD staff assisted at the State competition at Pibel Lake near Ericson, Nebraska. No local schools qualified for the contest this year.
- National Land Judging – A team from Palmyra High School qualified to compete at this national contest in Oklahoma City in May, 2019. The NRD contributed \$500 toward their expenses.
- NRD staff assisted with the Farm Safety Day in Tecumseh in April and Husker Harvest Days in September.
- A \$100 scholarship was provided to one area youth to attend the Adventure Camp for the Environment (ACE) at Halsey in June, 2019.
- 154 high school students from 37 schools across the state participated in the State Land Judging Contest held in Johnson County in October. Both teams and individuals qualified for the contest by earning top spots in their regional events. Teams from Pawnee City and Palmyra earned a berth to the National Land Judging Contest in May, 2020, at Oklahoma City. Individually Johnson County Central's Levi Dorsey took first place (individuals are not eligible to compete at the national level).
- Staff Service – NRD staff members recognized in 2019 for their years of service include: Charlie Pierce-15 years; Aaron Stalder-20 years.

Urban Special Projects:

In May of 2019 three projects were approved for matching funds during FY20 with final deadlines of June, 2020.

- City of Falls City – native plantings (Falls City Welcome Sign Project) - \$7,750
- City of Nebraska City – trail development (Riverview Nature Park) - \$9,360
- Village of Bennet – Trail & native plantings (Whispering Pines Park) - \$25,000*
*This project was extended from the previous year due to weather delays

Hazard Mitigation Plan:

Work has begun to update the Hazard Mitigation Plan for southeast Nebraska. JEO Consulting was hired to conduct the update, which requires coordination with the counties and cities within the District. A grant was secured last fall to help with cost of the update. This plan is required for any entity wishing to obtain disaster funding.

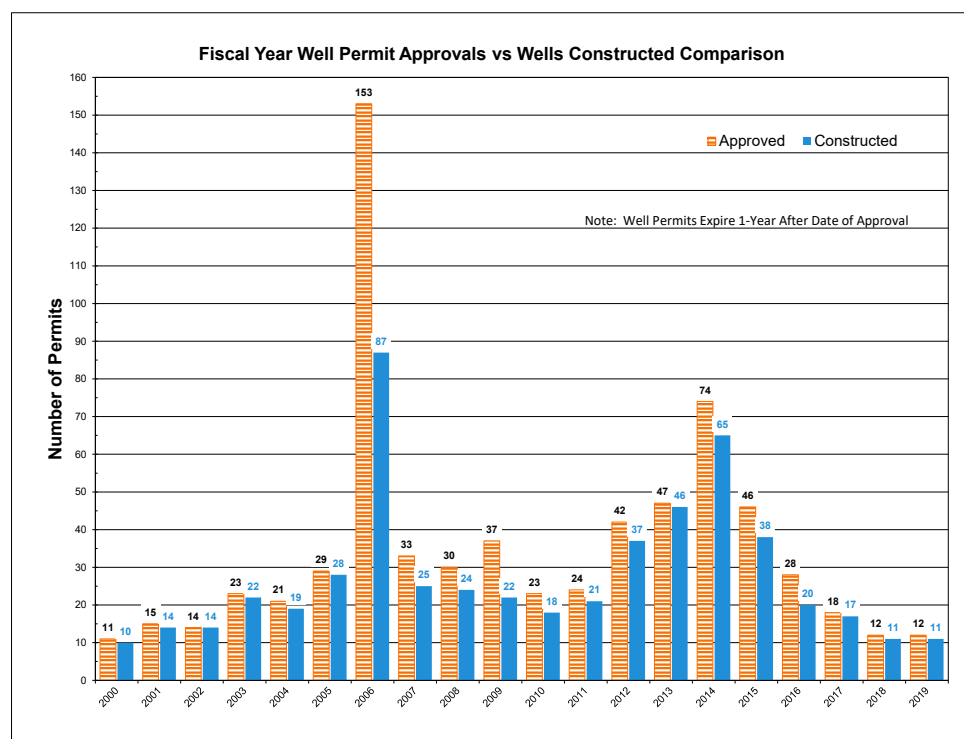
New Directors & Staff:

- March, 2019 – Jessica Donnelly, Nebraska City, joined the board filling a vacancy in Subdistrict 4 for a two-year term. No one ran for the spot previously held by Jenny Kearney.
- August, 2019 – Randy Fox, Nebraska City, filled the vacancy in Subdistrict 5 following the resignation of Dave Guhde.
- November, 2019 – Jill Rogman joined the NRD's staff as the Administrative Assistant-Bookkeeping & Accounting. Jill previously worked for the University of Nebraska-Lincoln in their inventory division. She and her husband live near St. Mary.

Water Resources Report FY2019

Groundwater Management

- Water wells that are designed to pump greater than 50 gallons per minute (gpm) require an approved well permit application prior to construction. A flowmeter is also required to be installed on any new or replacement wells.
- The chart below represents the number of well permits approved vs. wells constructed since 2000. (provided in a separate file)



Groundwater Levels

- A network of 131 wells (irrigation, livestock, domestic, and public water supply) located throughout the District were measured in the spring and fall of 2018 and 2019. Ninety-seven of the 131 measured wells were used to create a lifetime average minus a 10-year average groundwater level change. The District lifetime average change was a rise of 0.09 feet.

Well Abandonment

- A total of 22 abandoned wells were decommissioned this fiscal year through the District cost-share program totaling \$9,745 in payments.

Phase II Groundwater Quality Management Area

- A Phase II GWQMA was established in January of 2004 for a 72 square mile area in northwest Richardson County due to elevated levels of nitrate-nitrogen in the groundwater. Within this area cost-share assistance is available for soil sampling & complete fertilizer control systems.
- Annual groundwater sampling occurred in July with 30 domestic wells and 7 irrigation wells sampled for nitrate-nitrogen averaging 9.9 parts per million (ppm), which is up from 7.1 ppm measured last year.
- Throughout the District, 80 wells (16 irrigation, 64 domestic) were sampled and analyzed for the nitrate-nitrogen concentration averaging 7.9 ppm for the domestic wells, 5.3 ppm for the irrigation wells, and 7.4 ppm overall. Nineteen of the samples collected were also analyzed for atrazine with none of the samples exceeding the minimum detection limit at or above 0.05 parts per billion (ppb); therefore, none exceeded the 3 parts per billion (ppb) maximum contaminant level (MCL) set by US EPA. The MCL for nitrate nitrogen is 10 ppm.

Chemigation

- This year the District received 285 permit applications and inspected 165 systems for safety equipment compliance. Out of the 285 applications received, 267 were renewals; 16 were new permits; and 2 were emergency permits.
- Applicator certification is required prior to chemigating. Training sessions are held throughout the State each winter/early spring. Contact the NRD or log on to www.deq.state.ne.us/ click on Licenses & Certification dropdown box located on the top right center of the page then click Chemigation for a current list of training dates, locations, and training materials. This year's training session at the NRD office will be held Tuesday, March 7, at 9:00 a.m. Also, applicators can find their certification number and expiration year.



FISCAL YEAR 2019 - 2020 PROJECTIONS

Once again the Nemaha NRD board held the line on property tax collections in its FY2020 budget. The result was a tax levy that was lower than the previous year but a total budget that is about \$500,000 more than last year. Significant federal funds for a couple of projects help make up the difference in revenues. These include the Upper Big Nemaha 25-C rehab project, Duck Creek sediment basin, FEMA disaster funds, and a hazard mitigation planning grant. State funds for completion of the Duck Creek recreation project and Nebraska Environmental Trust funds also contributed to the revenue sources.

Here's a brief description of the major items included in this year's budget:

Projected Expenditures

Watershed & Flood Control Projects: \$2,734,483

- Buck/Duck Mitigation
- Watershed Rehabilitation (Upper Big Nemaha 25-C)
- Watershed Structure Repair/Maintenance

Recreation: \$792,199

- Duck Creek Recreation Development (sediment basin, maintenance building)
- Park & Trail Maintenance (rock, sand, tables, grills, utilities, mowing, new signage, etc.)
- Iron Horse Trail Lake (tree removal; playground)
- Kirkman's Cove (golf course drainage; sediment basin)

Personnel & Director Expenses: \$1,253,536

General Operation & Administration: \$338,233

- Utilities, vehicle & equipment expenses, property maintenance, supplies, insurance, dues, postage, etc.; hazard mitigation plan update

Conservation Assistance: \$338,211

- Tree Planting & Grass Drilling
- Nebraska Buffer Strip Program
- Soil & Water Conservation Program
- Urban Special Projects
- Small Dams Cost-Share (construction & engineering)

Water Quality/Quantity: \$355,862

- Groundwater & Surface Water Monitoring; monitoring well project
- Well Abandonment
- Chemigation
- Flow Meter & Irrigation Management Cost-Share
- Basin Planning/Groundwater Consulting

Capital Expenditures: \$8,000

- Water quality equipment

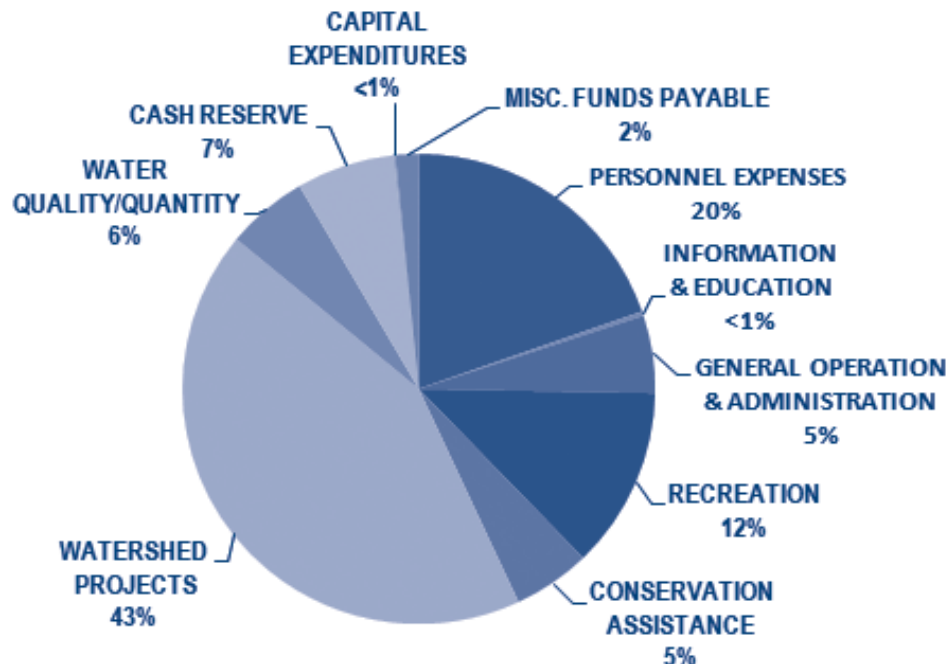
Information & Education: \$19,730

- Awards, youth & education programs, newsletter & website, advertising, etc.

Misc. Funds Payable: \$100,765

- Includes accrued vacation & grant funds received for future technical assistance

Cash Reserve: \$430,000



Projected Revenue

Federal Grants & Funds: \$2,252,100

- UBN 25-C Rehab Project (NRCS)
- Duck Creek Sediment Basin (NRCS)
- Hazard Mitigation Planning (FEMA)
- Steamboat Trace Cleanup/Repair (FEMA)

State Grants & Funds: \$425,026

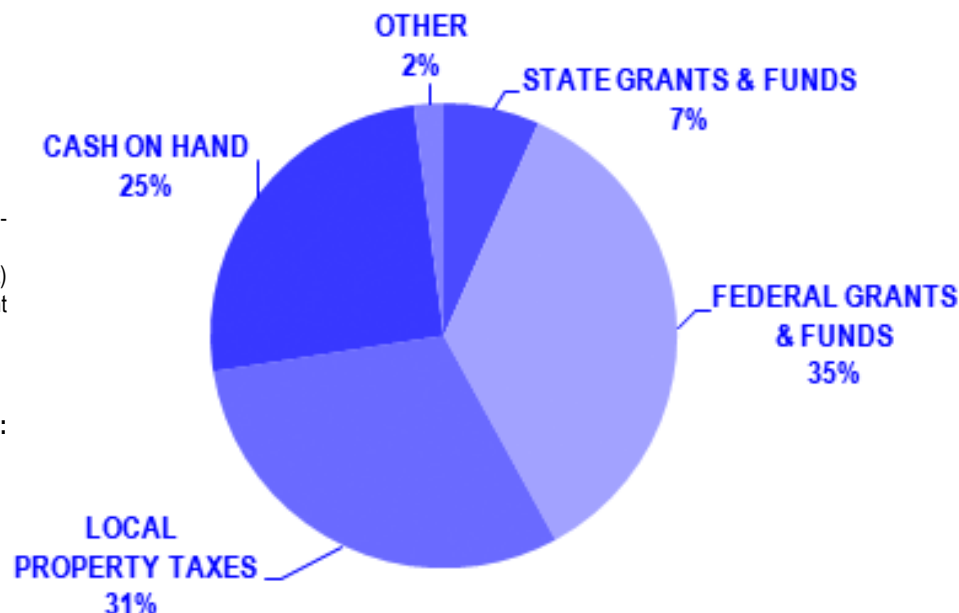
- Iron Horse Tree Removal (Nebraska Game & Parks)
- Duck Creek Recreation (Nebraska Resource Development Fund)
- Monitoring Well Project (Nebraska Environmental Trust)
- Nebraska Buffer Strip Program (Nebraska Department of Agriculture)
- State Water Quality Funds

Local Property Taxes: \$1,945,520

Cash on Hand & Misc. Funds Receivable: \$1,616,196

Other: \$132,177

- Landowner Share of Project Costs (small dams)
- Tree sales & planting services
- Park Permits & Electrical Hookup Fees



FOR MORE DETAILED EXPLANATIONS OF SPECIFIC BUDGET ITEMS, PLEASE CONTACT THE NEMAHA NRD (402) 335-3325.

Time Running Out to Order Seedling Trees & Shrubs

Only a few weeks remain to place your order for seedling trees or shrubs. The deadline has already passed to take advantage of the NRD's tree planting service, but you could still order trees to plant yourself.

Once again several varieties of conifers, deciduous, and shrub species are available at a reasonable cost of \$1.20 each, plus tax. You must order in quantities of 25/species, and full payment must accompany your order. You will be notified in April when the trees have arrived and are ready for you to

pick up at the NRD's office in Tecumseh. A printable order form is available on the NRD's website (nemahanrd.org); just click on the Programs tab and choose Conservation from the menu on the left. Information on specific species, pricing, and a link to the form are available.

Order soon as some species are limited. Or contact the NRD office if you have questions or need assistance choosing the type or quantity needed.

NEMAHA NRD STAFF

- Bob Hilske, Manager
- Scott Nelson, Assistant Manager
- Jane Kuhl, Administrative Assistant
- Jill Rogman, Administrative Assistant
- Lisa Bartels, Secretary
- Chuck Wingert, Water Resources Manager
- Charlie Pierce, Water Resources Technician
- Steve Bartels, Field Representative
- Mark McDonald, Field Representative
- Vernon Speers, Jr., Field Representative
- Aaron Stalder, Resources Specialist
- Tomas Chalé Aké, Field Technician
- Ken Hatten, Land & Water Resources Assistant

NRD STAFF IN NRCS OFFICES

- Alice Alexander, Auburn
- Geralynn O'Malley, Tecumseh
- Kim Zech, Syracuse
- Kathy Harlow, Pawnee City
- Laura Hart, Falls City

BOARD OF DIRECTORS

- Lisa Beethe, Elk Creek
- Rob Bohling, Johnson
- Jessica Donnelly, Nebraska City
- Randy Fox, Nebraska City
- James Gerweck, Falls City
- Orval Gigstad, Syracuse
- Dan Hodges, Julian
- Doug Iske, Dunbar (SECRETARY-TREASURER)
- Jon Keithley, Falls City
- Robert Lassen, Firth
- Timothy Loseke, Hickman
- Michael McDonald, Palmyra (VICE-CHAIR)
- Russel Moss, Burr
- William Niedfeldt, Shubert (CHAIR)
- Alan Romine, Falls City
- Don Siske, Table Rock
- Eldon Snoke, Humboldt
- Mike Speece, Auburn
- Dan Stukenholtz, Brock
- J. Duane Sugden, Sterling
- Kevin Thorne, Nebraska City

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The Nemaha NRD's *Insight* is a publication of the Nemaha Natural Resources District. Requests to be placed upon the *Insight* mailing list and/or comments regarding information in this publication should be directed to Jane Kuhl, Administrative Assistant, at the above address or at nprd@nemahanrd.org.