

Fall 2018

Volume 32, Issue 4

Tri-Basin Topics

A quarterly publication of Tri-Basin Natural Resources District

2018 Annual Report and Long-Range Plan

2018 Project Highlights

Tri-Basin NRD and Lower Republican NRD are working together on a project that will be the first inter-basin water transfer in Nebraska. The Platte-Republican Diversion Project involves installing a culvert under U.S. Highway 23 to direct flows diverted from the Central Nebraska Public Power and Irrigation District (CNPPID) E-65 Canal to the east branch of Turkey Creek in Gosper County. This project is intended to help both NRDs maintain adequate groundwater supply for future generations and to achieve objectives of both districts' Joint Integrated Management Plans. The districts, in cooperation with CNPPID, have applied for a water right that will enable diversion of "excess" flows from the Platte. Project diversions will only occur when all Platte water rights are satisfied and all endangered species target flows are met.

Also, in the Republican Basin, TBNRD continues to utilize a streamflow augmentation project on Turkey Creek in Gosper County in order to offset depletions in the Republican Basin portion of the district. The project includes one augmentation well along the creek and observation wells that provide background data that will be helpful in assessing the impact of the project.

Tri-Basin NRD budgets considerable funds (more than \$300,000 per year), in conjunction with the Nebraska Department of Natural Resources (NDNR) to make use of high flows in the Platte River. The NRD and NDNR pay Central Nebraska Public Power and Irrigation District (CNPPID) to

divert high flows outside the irrigation season. The diverted water is allowed to seep out of the bottom of the canals, wetlands, and Elwood Reservoir, providing recharge to local aquifers and augmenting streamflows in Platte and Republican River tributaries. Over the past twelve years (from 2006-2018), a grand total of 107,800 acre-feet of water has been diverted into Elwood Reservoir and the E-65 Canal. The purpose of these diversions is to recharge groundwater supplies and to re-time excess streamflows, which return to the Platte and Republican Rivers as tributary baseflows over several years. Tri-Basin NRD receives credit for augmenting streamflows to fulfill the requirements of our joint integrated water resources management plans (IMPs) in those basins.

Tri-Basin NRD is cooperating with several agencies in a groundwater recharge and wetland habitat enhancement project to divert excess Platte River flows through pipelines connecting CNPPID canals to five Waterfowl Production Areas in the northern part of the district. The project will not only provide an estimated 3,691 acre-feet of groundwater recharge annually, but also improve wildlife habitat in the wetlands for waterfowl and shorebirds. TBNRD, CNPPID, Rainwater Basin Joint Venture, Platte River Recovery Implementation Program, US Fish and Wildlife Service, and Ducks Unlimited are cooperating partners in the project.

Also, in the Platte Basin, the North Dry Creek Streamflow Augmentation project utilizes groundwater to augment streamflows of North Dry Creek, a tributary of the Platte River. The purpose of the project is to help the State of Nebraska fulfill its commitment to the Platte River Recovery Implementation Program to reduce shortages to Platte River flow targets by offsetting impacts to Platte streamflows resulting from post-July 1, 1997 water uses within Tri-Basin NRD. The project includes two augmentation wells and two observation wells.

In the Little Blue Basin portion of Tri-Basin NRD, the district has initiated a project to construct a series of small retention structures on Sand Creek in Kearney County in response to declining groundwater levels in this area. These check structures will slow the flow of water in Sand Creek, improving groundwater recharge. Tri-Basin NRD directors are also working with directors from Little Blue NRD to develop integrated water resources management plans (IMPs) that will help the two districts coordinate groundwater management efforts in the Little Blue Basin in order to perpetually sustain groundwater supplies in that basin.



The Platte-Republican Diversion Project would utilize this portion of Turkey Creek in Gosper County to divert water from the Platte River Basin to the Republican River Basin for groundwater recharge.

Protecting groundwater supplies

Making sure future generations have an adequate supply of water is an important part of the mission of Tri-Basin NRD. We regularly measure our aquifers in order to protect our groundwater supplies. Tri-Basin NRD monitors groundwater levels through an extensive network of dedicated observation wells, with at least one well in each township in the district. These wells have automated sensors that measure groundwater levels twice a day. Detailed data on groundwater level trends is vital to NRD directors as they consider how to manage groundwater supplies to insure sustainability.

Those trends prompted Tri-Basin NRD directors to enforce groundwater pumping limits in Union Township (5N-22W) in Gosper County in 2009 to protect the declining groundwater supply there. More recently, directors became concerned about declining groundwater levels in May Township in Kearney County (6N-13W), Elk Creek Township in Gosper County (5N-23W), and Grant Township in Kearney County (5N-13W). These townships are designated as Phase Two for groundwater quantity management, with the hope that associated restrictions will arrest groundwater declines and preclude the need for additional restrictions.



Nolan Little, Tri-Basin NRD Water Resources Manager, measures the spring groundwater level in an observation well in Kearney County.

Protecting the quality of groundwater

TBNRD has regulated fertilizer application to protect groundwater quality since 1989. District staff work cooperatively with farmers and agronomists to help improve the timeliness, efficiency and effectiveness of fertilizer application. This has resulted in stable or declining nitrate-nitrogen levels in groundwater supplies throughout the district.

- 203 irrigation wells tested for nitrate levels
- 29 irrigation wells tested for atrazine levels.

Tri-Basin NRD staff protects groundwater supplies from contamination by permitting chemigation, the process of applying fertilizer and ag chemicals through irrigation systems. This process allows farmers to “spoon feed” fertilizer to their crops as it is needed and reduces nitrogen leaching below the crop root zone into the aquifer.

- 106 new chemigation permits
- 2,016 renewal permits
- 673 inspections of chemigation safety devices

Planting Trees for Future Generations

Each year, Tri-Basin NRD sells conservation trees and shrubs for windbreak and habitat plantings. The district also provides hundreds of free tree seedlings for educational events and local Arbor Day celebrations. Tri-Basin staff help landowners diagnose tree diseases and fungal blights and decide on treatment methods.



Tri-Basin NRD Conservation Tree Sales							
	2011	2012	2013	2014	2015	2016	2017
Contractor-Planted	5,544	2,199	2,824	6,644	3,826	4,361	5,726
Hand-Plant	3,400	2,266	3,017	1,804	2,064	2,080	2,225

Preparing for disasters

Tri-Basin NRD, along with Phelps, Gosper and Kearney Counties, developed a district-wide Hazard Mitigation Plan. The plan outlines steps that would be taken in an emergency. The Federal Emergency Management Agency (FEMA) requires local governments to have a Hazard Mitigation Plan before it will provide federal disaster relief funding.

- Residents protected: 17,721

Providing conservation cost-share

Tri-Basin NRD provides and administers cost-share funds for many soil and water conservation practices, including well decommissioning, soil moisture sensors, irrigation well flowmeters, conservation tree plantings and conversion of irrigated cropland to dryland cropland and grassland.

Fiscal year 2017-2018 cost-share paid:

- \$38,983.00 locally-funded conservation tree planting
- \$45,510.88 state-funded NSWCP for conservation practices
- \$13,554.64 well decommissioning cost-share (along with Nebraska Department of Natural Resources)

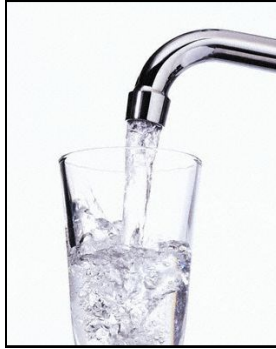
Managing Financial Resources Wisely

- Total operating expense budget: \$1,248,772.00 (July 1, 2018 to June 30, 2019)
- Tax levy set at .017583 per \$100 valuation

An owner of a house valued at \$100,000 will pay just \$17.58 in 2018 to protect this area's natural resources.

Ensuring rural domestic water quality

Tri-Basin NRD wants rural residents in Gosper, Phelps, and Kearney Counties to have drinking water that is as safe as public water supplies. Any district resident who uses a rural household water well can ask NRD staff to sample their well once per year at no charge; the sample will be tested for nitrates and bacteria. For more information on this program, contact Tri-Basin NRD at (308) 995-6688.



- Domestic wells tested in 2017: 19

Educating about natural resources

- South Central Water Conference: Over 100 agricultural producers and agri-business professionals meet to discuss current water issues each January
- Nitrogen Management Classes are held annually for producers in Groundwater Quality Management Areas to learn about protecting groundwater
- Natural Resources Report: A weekly update on natural resources issues every Wednesday at 4:17 p.m. on KRVN 880 AM radio.
- Rainwater Basin Conservation Day: An outdoor event with sessions on conservation for about 200 district eighth grade students. This program has been held for over 50 years.
- Water Jamboree: A collaborative event for over 500 area fifth grade students that covers topics on water conservation, recreation, quality, and biology.
- Adventure Camp about the Environment: Tri-Basin NRD awards six scholarships each year to this collaboratively NRD sponsored natural resources camp.
- Land and Range Judging Contests: Tri-Basin cooperates with other NRDs to host or assist with these soil and range judging contests.



About Tri-Basin NRD

Nebraska's Natural Resources Districts (NRDs) were established in 1972 to protect our natural resources through locally elected officials. It is unique to Nebraska.

Tri-Basin NRD:

- Serves three counties: Gosper, Phelps, and Kearney
- Includes parts of three river basins: Republican, Platte, and Little Blue
- Governed by thirteen local directors.

2017 Active Irrigation Wells

County	Total Irrigation Wells	Certified Irrigated Acres
Kearney County	2,126	228,504.87
Phelps County	2,182	258,206.12
Gosper County	758	93,340.74
Total	5,066	580,051.73
Basin	Total Irrigation Wells	Certified Irrigated Acres
Republican Basin	1,616	189,882.31
Platte Basin	2,622	298,595.55
Little Blue Basin	828	91,573.87
Total	5,066	580,051.73

Republican Basin Water Use*

	Pivot	Gravity	Pivot & Gravity	Drip Tape	Weighted Average
2010	5.05	8.62	5.31		5.82
2011	6.63	10.86	7.20		7.57
2012	13.88	21.33	14.28		15.36
2013	12.46	22.84	15.05		14.25
2014	6.11	11.34	6.54	7.60	6.72
2015	8.28	15.79	9.39	12.17	9.3
2016	9.85	18.42	10.96	10.15	10.88
2017	7.18	14.16	8.11	8.34	7.88

*All Republican Basin irrigation wells are metered. Metered water use is also reported from wells in the Platte and Little Blue Basins. Data updated February 16, 2018.

2018 Irrigation Water Management Forms

If you would like to have your reports mailed to you, call our office at 1-877-995-6688.

(All forms will be mailed mid-October.)

Reports due November 15, 2018.

Attention Chemigators:

Remember to drain your main line check valve to prevent freezing. This will extend the life of the check valve and may help prevent check valve failure.

TBNRD Staff to Inspect Meters

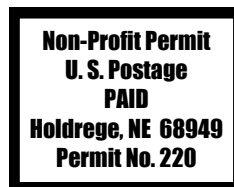
Each year, NRD staff inspect and take readings from meters in about one-third of the townships in the District. This year we will be doing inspections in Ranges 15W, 19W, and 24W, and in 5-22 of Gosper County (Union Township).

If you have irrigation wells in these townships and you put your meters in storage for the winter, you can call the Tri-Basin NRD office at 1-877-995-6688 to schedule an inspection. If there is no meter at the site when TBNRD staff come to inspect, you will receive a letter requesting access to the meter for inspection.



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Tri-Basin Natural Resources District

1723 Burlington St. Holdrege, NE 68949

(308) 995-6688

email: tribasin@tribasinnrd.org

www.tribasinnrd.org

RETURN SERVICE REQUESTED

Nebraska's NRDs: Protecting Lives, Protecting Property, Protecting the Future

CALENDAR

October 8..... NRD Closed for Columbus Day

October 9..... NRD Board Meeting, 7:30 p.m.*

November 12 NRD Closed for Veteran's Day

November 13 NRD Board Meeting, 7:30 p.m.*

November 22-23 NRD Closed for Thanksgiving

December 11 NRD Board Meeting, 1:30 p.m.*

December 24-25 NRD Closed for Christmas

January 1..... NRD Closed for New Year's

* Times are tentative. All meetings are at TBNRD office in Holdrege unless otherwise noted.

TRI-BASIN NRD BOARD OF DIRECTORS

David Olsen, Chairman.....	Minden, NE
Bradley Lundeen, Vice Chairman	Wilcox, NE
Joe Bilka, Treasurer.....	Holdrege, NE
Todd Garrelts, Secretary.....	Holdrege, NE
Brian Bergstrom.....	Axtell, NE
Mike Cavanaugh.....	Minden, NE
Ed Harris	Loomis, NE
Robin Hinrichs	Axtell, NE
Phyllis Johnson.....	Bertrand, NE
Greg Jorgensen.....	Minden, NE
Joe Larson.....	Loomis, NE
David Raffety.....	Kearney, NE
Larry Reynolds	Lexington, NE

TRI-BASIN NRD STAFF

Amy Dutton.....	Minden Office Secretary
Tammy Fahrenbruch	Water Programs Coordinator
Lori Hagan	Elwood Office Secretary
Nolan Little	Water Resources Manager
Carie Lynch	Administrative Secretary
Nate Munter.....	Land Resources Coordinator
Patrick Nott.....	Water Resources Technician
Tami Reese	Holdrege Office Secretary
Dalton Refior	Land Resources Technician
Nicole Salisbury.....	Information & Education Coordinator
Esther Smith	Office Assistant
John Thorburn	General Manager
Jeff VanEperen.....	Field Technician

A mailing list is maintained and requests to be placed on the list should be sent to the above address. Comments and suggestions may be addressed to the General Manager.

Get Tri-Basin Topics in your inbox instead of your mailbox!

To request an electronic version of this newsletter, send an email nsalisbury@tribasinnrd.org.