



Fall 2017

Volume 31, Issue 4

# Tri-Basin Topics

*A quarterly publication of Tri-Basin Natural Resources District*

## 2017 Annual Report and Long-Range Plan

### **2017 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 project is in the final design stage.



***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.***

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 ten years (from 2006-2016), a grand total of 100,757 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 will also receive credit for augmenting streamflows to fulfill the requirements of our joint integrated water resources management plans (IMPs) in those basins.

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, directors are exploring the option of constructing a series of small retention structures on Sand Creek in Kearney County in response to declining groundwater levels in this area. These check structures would 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.

### ***Protecting Our Groundwater***

TBNRD staff measure water levels in irrigation and dedicated observation wells each year in order to monitor groundwater quantity throughout the district. Tri-Basin has at least one dedicated observation well in every township in



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

the district. Data loggers in observation wells automatically measure water levels at regular intervals. Intensively measuring our aquifers provides Tri-Basin NRD directors with data they need to discern trends in water levels and make informed decisions about our groundwater supplies. Those trends prompted Tri-Basin NRD directors to enforce groundwater pumping limits in Union Township (5N-22W) in Gosper County in 2009 in an effort to protect the declining groundwater supply there. More recently, directors became concerned about declining groundwater levels in May Township in Kearney County (6N-13W) and Elk Creek Township in Gosper County (5N-23W). These two townships were designated as Phase Two for groundwater quantity management. It is hoped that a Phase Two designation and associated restrictions will arrest groundwater declines and preclude the need for additional restrictions.

Tri-Basin NRD also works with producers to protect groundwater quality. The NRD 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. These efforts have resulted in stable or declining nitrate-nitrogen levels in groundwater supplies throughout the district. In 2017, TBNRD staff sampled 217 irrigation wells for nitrate levels and 56 irrigation wells for atrazine levels.

Chemigation is the process of applying fertilizer and ag chemicals through irrigation systems, allowing farmers to “spoon feed” fertilizer to their crops as it is needed and reducing nitrogen leaching below the crop root zone into the aquifer. Tri-Basin NRD staff protects groundwater supplies from contamination by permitting chemigation in Gosper, Phelps, and Kearney Counties. Chemigation in 2017:

- 154 new chemigation permits
- 1,894 renewal permits
- 807 inspections of chemigation safety devices

Nebraska community water systems regularly test drinking water to insure that it is safe. Rural residents in Gosper, Phelps and Kearney Counties also need to know whether they have safe drinking water. The district offers a program that allows rural residents to have their household drinking water tested for nitrates and bacteria free of charge once a year. More information on this program is available by calling Tri-Basin NRD at 1-877-995-6688.

### **Conservation Cost-Share Assistance**

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. In fiscal year 2016-2017, Tri-Basin NRD paid \$21,966.31 in local funding for conservation tree planting cost-share, \$53,879.48 in state-funded NSWCP cost-share funds for other conservation practices, and funded (along with Nebraska Department of Natural Resources) \$14,358.04 in cost-share for well decommissioning.

### **Managing Financial Resources Wisely**

TBNRD’s total operating expense budget for July 1, 2017 to June 30, 2018 is \$1,477,807.03 with the levy set at .027656 per \$100 valuation. An owner of a house valued at \$100,000 will pay just \$27.65 in 2017 to protect this area’s natural resources.

### **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 land-owners diagnose tree diseases and fungal blights and decide on treatment methods.**

<b>Tri-Basin NRD Conservation Tree Sales</b>							
	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>
Contractor-Planted	4,191	5,544	2,199	2,824	6,644	3,826	4,361
Hand-Plant	2,559	3,400	2,266	3,017	1,804	2,064	2,080

## Educating and Informing Local Residents

- Holdrege Water Conference: A discussion of current water issues for agricultural producers and agri-business professionals
- Nitrogen Management Classes for agricultural producers
- Natural Resources Report 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
- Water Jamboree: A collaborative event on water conservation topics for over 500 area fifth grade students
- Adventure Camp about the Environment: A collaborative NRD sponsored summer camp for which TBNRD offers up to six scholarships yearly.
- Land and Range Judging Contests: Tri-Basin cooperates with other NRDs to host or assist with these soil and range judging contests.



Students at Water Jamboree

## About Tri-Basin NRD

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

Locally, Tri-Basin NRD was formed by consolidating the Phelps, Gosper, and Kearney County Soil and Water Conservation Districts. TBNRD is unusual because it encompasses portions of three different river basins: Republican, Platte, and Little Blue.

Tri-Basin NRD is governed by a Board of Directors with 13 members, 12 of whom are elected from designated sub-districts and one at-large member.

## 2016 Active Irrigation Wells

County	Total Irrigation Wells	Certified Irrigated Acres
Kearney County	2,125	228,522.47
Phelps County	2,183	258,193.88
Gosper County	760	93,468.56
Total	5,068	580,184.91
Basin	Total Irrigation Wells	Certified Irrigated Acres
Republican Basin	1,618	189,982.99
Platte Basin	2,624	298,714.23
Little Blue Basin	826	91,487.69
Total	5,068	580,184.91

## Republican Basin Water Use\*

Irrigation System	2008	2009	2010	2011	2012	2013	2014	2015	2016
Pivots	6.88	7.11	5.05	6.63	13.88	12.46	6.11	8.28	9.85
Gravity	11.79	12.42	8.62	10.86	21.33	22.84	11.34	15.79	18.42
Pivot/Gravity	8.06	7.79	5.31	7.20	14.28	15.05	6.54	9.39	10.96
Drip Tape							7.60	12.17	10.15
Weighted Avg.	8.26	8.36	5.82	7.57	15.36	14.25	6.72	9.3	10.88

\*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 14, 2017.

## TBNRD Staff to Inspect Meters

Tri-Basin NRD staff are beginning annual irrigation meter inspections. 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 14W, 18W, and 22W.

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.

## 2017 Irrigation Water Management Forms are Ready

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 17, 2017.

## Tri-Basin NRD Meter Requirements

Tri-Basin NRD rules require irrigation flowmeters on:

- All active wells in the Republican Basin portion of Tri-Basin NRD
- All non-replacement wells in the Platte Basin and Little Blue Basin portions of Tri-Basin NRD
- All wells associated with a Groundwater Transfer
- All Wells associated with irrigation-related cost-share practices

Additional meter requirements:

- All meters installed in Tri-Basin NRD must have a totalizer that reads in gallons or acre-inches. If cost-share funds are received on the flowmeter, the totalizer must read in acre-inches.
- All meters in Tri-Basin NRD must be installed according to the meter manufacturer's specifications.

## 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.**



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# Tri-Basin Topics

Non-Profit Permit  
U. S. Postage  
PAID  
Holdrege, NE 68949  
Permit No. 220

**Tri-Basin Natural Resources District**  
1723 Burlington St. Holdrege, NE 68949  
(308) 995-6688  
email: [tribasin@tribasinprd.org](mailto:tribasin@tribasinprd.org)  
[www.tribasinprd.org](http://www.tribasinprd.org)

RETURN SERVICE REQUESTED

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

# CALENDAR

October 9..... NRD Closed for Columbus Day  
 October 10.....NRD Board Meeting, 7:30 p.m.\*  
 November 10..... NRD Closed for Veteran's Day  
 November 14.....NRD Board Meeting, 7:30 p.m.\*  
 November 23-24.....NRD Closed for Thanksgiving  
 December 12.....NRD Board Meeting, 1:30 p.m.\*  
 December 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

- Charles Brooks ..... Land Resources Coordinator
- 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 Technician
- Patrick Nott ..... Water Resources Technician
- Tami Reese ..... Holdrege Office Secretary
- 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@tribasinprd.org](mailto:nsalisbury@tribasinprd.org).