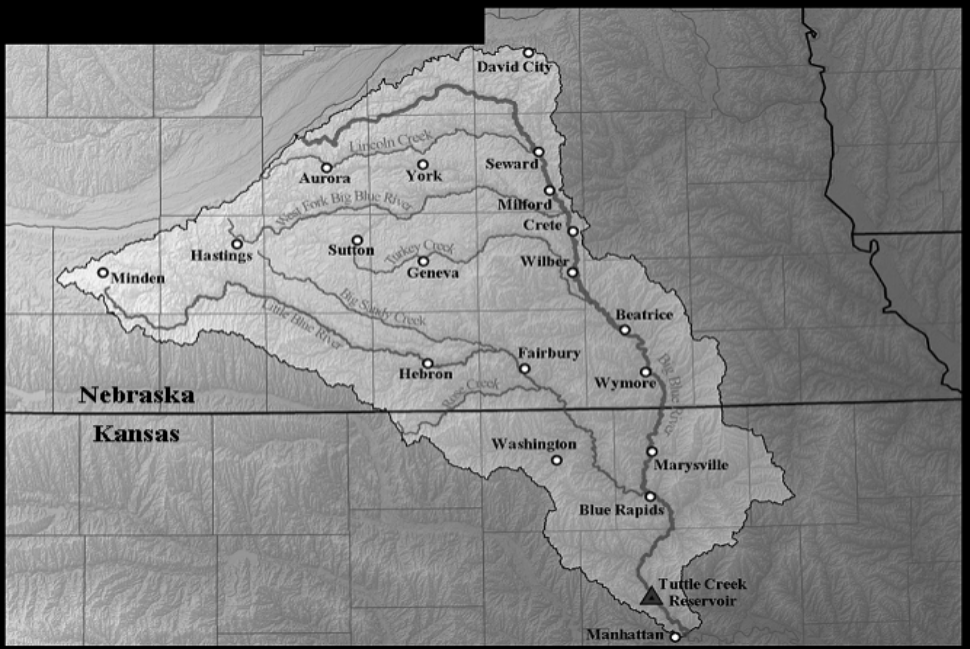


KANSAS-NEBRASKA BIG BLUE RIVER COMPACT

FORTY FIFTH ANNUAL REPORT



FISCAL 2018

Beatrice, NE
May 24, 2018

KANSAS – NEBRASKA BIG BLUE RIVER
COMPACT ADMINISTRATION

May 15 , 2019

The Honorable Donald J. Trump
President of the United State of America

The Honorable Laura Kelly
Governor of Kansas

The Honorable Pete Ricketts
Governor of Nebraska

Pursuant to Article VIII, Section 1 of the Rules and Regulations of the Kansas-Nebraska Big Blue River Compact Administration, I submit the Forty Fourth Annual Report. The report covers the activities of the Administration of the Compact for the Fiscal Year 2018 while I was the presiding Federal Chairman.

Respectfully,

A handwritten signature in blue ink that reads "W. Don Nelson". The signature is written in a cursive style and is followed by a long horizontal line.

W. Don Nelson

Federal Compact Chair

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NEBRASKA

Good Life. Great Water.

DEPT. OF NATURAL RESOURCES

March 29, 2018

W. Don Nelson, Federal Chair
Kansas-Nebraska BBRCA
2430 S. Canterbury Lane
Lincoln, NE 68512

David W. Barfield, KS Commissioner
Kansas-Nebraska BBRCA
1320 Research Drive, 3rd Floor
Manhattan, KS 66502



Pete Ricketts, Governor

Sharon Schwartz, Kansas Advisor
Kansas-Nebraska BBRCA
2051 20th Road
Washington, KS 66968

Larry Moore, Nebraska Advisor
Kansas-Nebraska BBRCA
2240 A Road
Ulysses, NE 68669

Dear Compact Members:

The 2018 annual meeting of the Kansas-Nebraska Big Blue River Compact Administration will be hosted by Nebraska on Thursday, May 24, 2018, at 9:00 a.m. The meeting will be held at the Homestead National Monument of America, located at 8523 Nebraska 4 near Beatrice, NE.

A tentative agenda is enclosed with this meeting notice.

Sincerely,

Gordon W. "Jeff" Fassett
NE Commissioner

Enclosures or Attachments (1)

cc: Budget Committee – Amy Zoller, Chris Beightel
Legal Committee – LeRoy Sievers, Kenneth Titus
Engineering Committee – Jeremy Gehle, Chris Beightel, Katie Tietsort
Water Quality Committee – Tom Stiles, Annette Kovar, Craig Romary, Dan Howell, Marty Link
NRD Managers – Michael Onnen, David Clabaugh, David Eigenberg, John Thorburn
Add'l – Jim Macy, Jason Lambrecht

Gordon W. "Jeff" Fassett, P.E., Director

Department of Natural Resources

301 Centennial Mall South

OFFICE 402-471-2363

P.O. Box 94676

FAX 402-471-2900

Lincoln, Nebraska 68509

dnr.nebraska.gov

**Kansas-Nebraska Big Blue River Compact Administration
45th Annual Meeting**

May 24, 2018

9:00 a.m.

Homestead National Monument of America
8523 Nebraska 4
Beatrice, NE 68310

AGENDA

1. Call to Order
2. Introductions and Announcements
3. Minutes and Report of the 44th Annual Meeting
4. Chair's Report
5. Kansas Report
 - a. State Overview Report
 - b. Topeka Field Office Report
6. Nebraska Report
 - a. State Overview Report
 - b. Water Administration Report
 - c. Reports of the NRDs
7. Secretary's Report
8. Treasurer and Budget Report
9. United States Geological Survey Report
10. Legal Committee Report
11. Engineering Committee Report
12. Water Quality Report
13. Advisor Comments
14. Unfinished Business
15. New Business
16. Committee Membership and Special Assignments
17. Adjourn

**MINUTES OF THE 45th ANNUAL MEETING
OF THE
KANSAS-NEBRASKA BIG BLUE RIVER COMPACT ADMINISTRATION**

Call to Order

The Forty-Fifth annual meeting of the Kansas-Nebraska Big Blue River Compact Administration was held on May 24th, 2018 at the Homestead National Monument of America in Beatrice, NE. The meeting was called to order at 9:00 a.m. by Compact Chair, W. Don Nelson.

Mr. Nelson introduced himself and asked those in attendance to introduce themselves.

Introductions

Those in attendance were:

W. Don Nelson	Compact Chairman
Chris Beightel	Kansas Department of Agriculture, Division of Water Resources, Secretary
David Barfield	Chief Engineer, Kansas Department of Agriculture, Division of Water Resources, Kansas Compact Commissioner
Jeff Fassett	Nebraska Department of Natural Resources, Nebraska Compact Commissioner
Amy Zoller	Nebraska Department of Natural Resources, Treasurer
Jeremy Gehle	Nebraska Department of Natural Resources, Chairmen Engineering Committee
LeRoy Sievers	Nebraska Department of Natural Resources, Legal Counsel
Kenneth Titus	Chief Counsel for Kansas Department of Agriculture
Larry Moore	Nebraska Compact Advisor
John Miller	Upper Big Blue Natural Resources, Director
David Eigenberg	Upper Big Blue Natural Resources, General Manager
Rod DeBuhr	Upper Big Blue Natural Resources, Assistant General Manager
Jack Wergin	Upper Big Blue Natural Resources, Project Manager
Doug Burns	Upper Big Blue Natural Resources, Director
Marie Krausnick	Upper Big Blue Natural Resources
Lynn Yates	Upper Big Blue Natural Resources, Director
Jim Ostdiek	Nebraska Department of Natural Resources
Tom Stiles	Kansas Department of Health and Environment, Bureau of Water
Katie Tietsort	Topeka Field Office Water Commissioner, Kansas Department of Agriculture, Division of Water Resources
Tim Boyle	United States Geological Survey
Mike Onnen	Little Blue Natural Resources District, General Manager
Dave Clabaugh	Lower Big Blue Natural Resources District, General Manager
Elise Jarrett	Nebraska Department of Natural Resources
Craig Romary	Nebraska Department of Agriculture, Environmental Specialist
Marty Link	Nebraska Department of Environmental Quality
Chittaranjan Ray	University of Nebraska Lincoln, Nebraska Water Center, Director
Dustin Wilcox	Nebraska Association of Resource Districts

Approval of the Minutes of the 44th Annual Meeting

Secretary Chris Beightel gave a report on the minutes for the 44th annual meeting. Kansas collaborated with the state of Nebraska to complete a final version of the minutes. Kansas prepared three print versions, which the commissioners signed to take back with them. The signature pages will be scanned and placed online. Mr. Barfield moved that the minutes for the 44th annual meeting be approved. Mr. Fassett seconded the motion. In discussion it was noted that last year's report was one of the largest to date and was pushing the limit of the binding format used. The motion passed unanimously.

Chair's Report

Chair Nelson reported that he attended the water quality committee meeting the previous week and that its highlight would be covered later in the meeting.

Kansas Report

State Overview Report

David Barfield started the Kansas report (Attachment A). He reported that conditions were generally dry in Kansas with every category of the drought map represented somewhere across the state. It was a light year legislatively for water issues. Several tools were created by the Legislature in the previous few years and the work is continuing to implement those tools. The Legislature allowed groundwater management districts to increase their assessments to deal with their funding issues. Things are routine on the Republican River Compact, which is good. The Sheridan County 6 local enhanced management area (LEMA) had a goal to save 20% over five years but ended up saving more than that while maintaining their local economy. The groundwater management district voted to extend the SD6 LEMA another 5 years. Based on the success of the SD6 LEMA, the GMD decided to create a district-wide LEMA to slow declines across the region. Kansas also has water conservation areas (WCAs) where water users consent to be restricted usually in exchange for greater flexibility to use their suite of water rights. There are currently 15 in place covering some 30,000 acres. GMD 5 is looking to use the LEMA tool to make water use reductions in addition to augmentation to resolve the impairment of Quivira National Wildlife Refuge. Water use reductions are needed to stabilize the streamflow into the refuge so that the augmentation will be effective long-term. The cities of Hays and Russell purchased a large ranch to the south intending to use the water for their municipal use. After the change applications are contingently approved, the cities will have to go through the water transfer panel because of the volume of water they want to move and the distance they want to move it. The panel will weight the needs of the applicant against the concerns of the community where the water is coming from. The City of Wichita is repurposing their aquifer storage and recovery project and seeking to change some of the terms and conditions of their project to make it work for their new strategy.

Topeka Field Office Report

Katie Tietsort, Water Commissioner at the Topeka Field Office, finished Kansas' report (Attachment B). The spring is starting out dry in the basin. Last year was dry too. Precipitation is 4 to 5 inches below normal so far this year even across the eastern one-third of Kansas. Current conditions are reminiscent of the dry period 2011-2012. Temperatures have also been cooler than normal. Communications with Nebraska DNR regarding compact administration were very good this last year, as usual. There was no minimum desirable streamflow administration in the basin last year. MDS administration was about to start at the Little Blue River at Barnes this week, but upon measurement USGS found a couple of cfs flow and administration was averted for now, but the stream is struggling. Big Blue is holding at about long-term median flow. USACE reservoir management and the lake level management plans that the state participates in with USACE is causing challenges for the hydropower dam in Lawrence which has an optimal operating range that doesn't always match the stream and reservoir operations. There are several

other stream segments that are being administered for MDS at this time. Water assurance districts use purchased storage in federal reservoirs to supply district members when natural flows are insufficient. Because of the dry conditions, assurance district releases are being made and must be protected in route to their customers. This is happening on the Upper Neosho for the City of Emporia. A group of water user in the Lower Republican River Basin is working to form an access district to use any excess water that might be available to mitigate MDS administration. A seven-member board has been established to explore the options. Kansas has updated regulations regarding civil penalties for over-pumping and other violations which include monetary and water penalties. Kansas performed one of the last big meter orders in the state requiring about 1,500 water flow meters in the Kansas River Basin by December 31, 2017. With this last order, the state is nearly entirely metered. Katie was asked if penalties apply to both surface and groundwater; she responded that yes, the penalties are the same in each case.

Nebraska Report

State Overview Report

Jeff Fassett started the Nebraska report (Attachment C). Larry Moore has been appointed by Governor Ricketts to another term, until 2021, as Compact Advisor for Nebraska.

The water supply in the Big Blue River basin has been average, but the Little Blue Basin has been suffering shortages and it's been an active administration year in the basin. Drought conditions are creeping into southeastern Nebraska. The rest of the state is in pretty good shape.

All 23 natural resource districts across the state are engaged in integrated management planning to address surface and groundwater supply issues. Some IMPs are being updated, some are just being developed. Budget restrictions make it a challenge for the Department of Natural Resources to keep up with all 23 districts' planning processes and the considerable education and outreach that goes along with the process. The Little Blue and both Upper- and Lower-Big Blue NRDs are working collaboratively with Department. The Upper Big Blue NRD's IMP will also involve water quality planning with the Nebraska Department of Environmental Quality. The IMP for the Lower Big Blue NRD is just getting started.

Nebraska has implemented a voluntary state-wide water use reporting system, where it isn't already required. Participation is about 30% for surface water users in the Blue River basins that weren't otherwise required to report.

DNR is also required to develop basin-wide plans in the Platte and Republican Basins. The basin-wide plans offer a framework to help define what the IMPs should look like. The plans are on a 5- or 10-year update sequence. The plans often lead to targeted, significant investment in the districts. The Republican and Platte River plans should be done in 2019. Other voluntary basin-wide coordination activities are occurring in the Lower Platte and Niobrara River Basins.

The main legislative issue is the budget with challenges coming from shortfalls stemming from low commodity prices. The department's budget has been cut 4% in the current legislative cycle, this after being cut 8%-9% in the previous cycle. This will ultimately affect staffing levels creating further challenges to the basin- and IMP development work. This year's Legislature let lapse the authority for NRDs in fully- or over-appropriated basins to levy a 3% tax to apply to IMP activities. Not being able to invest in projects could create a much more severe regulatory environment for water users in those districts.

Nebraska has concluded settlement discussions and has entered into an agreement with Colorado to settle issues of Colorado's past non-compliance with the Republican River Compact. The money received from Colorado will be invested in projects in the basin. Nebraska is pleased with the way things are going among the Republican River Compact states.

Nebraska's Water Sustainability Fund provides on the order of \$10 million per year for projects largely in the NRDs. \$400,000 was awarded in the Little Blue this year. Over \$4 million was provided to address Nitrate and Uranium issues in the City of Hastings.

There are over 600 dams in the Blue River basins that require inspections. 160 dams were inspected in 2017.

Nebraska is hosting the American Water Resources Association specialty conference on integrated water resources management in Omaha in March 2019.

Water Administration Report

Jim Ostidek provided the Water Administration Activities (Attachment D) for the Little Blue and Big Blue Administration. The upper basin had above-average precipitation while the lower basin had below average precipitation. The only administration was in the Little Blue and that was for the compact. It was one of the coolest Augusts and warmest Septembers in the last 60 years.

Lower Big Blue Natural Resource District (NRD) Report

Dave Clabaugh presented slides for the Lower Big Blue NRD (no Attachment). He reviewed with the group flood control data in the Big Blue basin, highlighting the number of flood control projects completed in the Lower Big Blue NRD. In all, thirty-eight percent of the LBBNRD is protected from flooding by over two hundred watershed structures. Dave explained that many of these structures have reached or will be nearing their designed life expectancy and will require increased maintenance in the future. He highlighted several instances where the NRD is using inserts in the principal spillway tubes. Without the inserts, the spillway tube would have to be excavated and replaced. The inserts have proved to be less costly than tube replacement.

Dave reviewed the NRD's groundwater monitoring program. The district experienced a decline of .49 ft from the Spring of 2017 to the Spring of 2018. The NRD is using data obtained from the 40 completed dedicated monitoring wells across the district and have plans to add additional wells and equipment in 2018.

The Lower Turkey Flood Control Project has been completed in northern Saline County. It is the thirteenth completed watershed project in the NRD. It was the last major watershed in the district that did not have any flood control in it.

Well Permits being issued have decreased since 2012. There were 10 well permits approved the past year, five new and five replacement wells. Certification of irrigated acres continues with 169,000 acres reported.

Dave reported on the cost share programs for soil conservation work and water management.

Applications for water flow meters have been increasing. Chemigation permits issued by the NRD are increasing every year.

Work to improve the NRD's public recreation areas continues as there are two handicap assessable shelters are being constructed at the Willard Meyer and Big Indian Recreation areas.

Upper Big Blue NRD Report

Rod DeBuhr summarized the years activities for the Upper Big Blue (Attachment E). There are over 12,000 active irrigation wells in the district, but well drilling activities were slow this last year likely because of low commodity prices and the fact the district is getting close to being fully developed.

Because of good precipitation, groundwater levels have gone up since last spring. There are about 1,237,000 irrigated acres in the district. Only about 3,000 certified irrigated acres were added this last year, again less than usual because of low ag prices and being close to fully developed. There has been mandatory water use reporting since 2007 and mandatory water flow metering since 2016. The year's irrigation pumping averaged 4.9 inches per acre. If the district can keep its water use to an average of about 7 inches per acre, groundwater levels are stable. Nitrates are the main water quality issue in the district. In the worst areas, producers must complete nutrient management training and submit annual reports on fertilizer application. Anhydrous applications are limited to after November 1 and other types of fertilizer after March 1. The district has a program to sample for naturally occurring arsenic, selenium and uranium from dedicated monitoring wells. Studies indicate that fertilizer application may cause the heavy metals to be released from the sediments into the water. Some producers are tapping the Dakota formation for irrigation water supply, but salinity is an issue in some cases. The district is trying to keep track of the quantity and quality of the water sourced from the Dakota Aquifer. Project Grow – The district was awarded a grant from the Nation Association of Conservation Districts to demonstrate dryland farming techniques near the City of York that minimize fertilizer use and increase soil health. Also, because it is some distance to a supply of fresh produce, the City of York qualifies as a “food desert” by NACD and so the Project Grow grant also assists with community garden resources in the city. The district continues its work with the Nebraska Agricultural Water Management Demonstration Network, including funding \$154,712 for soil and water conservation cost-share assistance. There are over 10,000 center pivot systems in the district. The district has a new variable rate irrigation 3-year pilot program to work on making those CP systems even more efficient and to save water in some cases. The district is in the heart of the Rainwater Basin area and several farmers have wetlands on their property, so the district is working with NRCS and USFWS on an approximately \$1.4M regional conservation partnership program grant to maintain the wetlands for wildlife and water quality while maximizing the farmable land. The district is working with local communities to gather data for a new groundwater model for the area. The district is working with DNR on a joint water quality/quantity management plan. The district has a very popular program that provides cost share of 75% up to \$50,000 for the construction, maintenance, or removal of small dams for better water management.

Little Blue NRD Report

Mike Onnen provided the report for the Little Blue (Attachment F). The district has revised its groundwater management plan to be more proactive. The plan was approved by DNR in November 2017 and the district is working on rules and regulations to implement it. Water allocations of 65 inches over 5 years will be put in place if water levels drop one foot below the 2016 levels. Water levels have dropped, and the district is closer to having to implement the allocations. To address water quality concerns, the district is going to prohibit the application of fertilizer on sandy soils. Water quality sampling will also be done at 24” instead of the current 36” to promote more active monitoring. Anyone farming more than 80 acres will be required to perform and report soil sampling data. The rules and regulation hearing will be an “open house” training where information displays are available for the public, district staff is available to answer questions, the public can write and or submit their already-prepared testimony at a designated station provided for them, or they can go into a separate room where a stenographer will take their statement for them. The Lower- and Upper- NRDs have done similar style hearings and had good success with those. Current water levels are just about 0.3 feet from triggering allocations. To monitor water levels, the district has about 50 dedicated wells read daily plus about 344 irrigation wells which are read spring and fall. The dedicated wells are each over a quarter mile away from a pumping irrigation wells, so they give a better overall picture of the regional water levels. The district has been collecting water use information since before 1999. For the last 10 years, the district average irrigation application of groundwater has been about 7 inches per acre, 11.8 inches for gravity systems. There have been gains in technology and farming practices, and landowners have better awareness of their responsibility to manage the water resource. The district is writing its IMP and hopes to be done by the end of the year. There are

three main goals: gathering better data for decision making, make local decisions to take care of the aquifer and interconnected surface water resources, and increase education and awareness. New groundwater modeling shows that a small portion of the district is causing depletions to the Platte River, so the district has placed a stay on about 18,000 acres in NE Adams County and will also place controls in that area to address the depletions. Nitrate levels continue to rise in the district, some above drinking water quality standards. Some cities are on administrative orders or are very close to being on them. There are management strategies for about 400,000 acres that are of special concern. A researcher from the University of Nebraska indicated that the only way to make the situation better is if the producers perform split applications, applying only the quantity required by the crop and at the right time. The district has hired an assistant manager that is an expert on soil health. The district has secured about \$900,000 in funding from the state's Water Sustainability Fund for projects that will put water back in oxbow lakes to help with recharge while not incurring construction costs or taking land out of production. The benefits of these projects are estimated to be on the order of \$2.2M. The district is working with the City of Fairbury, NE to try to find a way to add 19-20 additional rural water customer, some of which are in Kansas. Issues with iron, manganese, and Sulphur in groundwater are driving the demand for treated rural water in this area.

Secretary's Report

Chris Beightel asked for PDF's copies of all reports to incorporate into the next annual report. The format for the next report was briefly discussed for size, content and compact rules.

Treasurers Report

Amy Zoller provided copies of the treasures report (Attachment G). A report tracking the current year budget and a report analysis for the upcoming fiscal year was provided. Most revenue and expense items remain the same. This year will see an expense for the bi-annual financial review.

David Barfield moved to approve the budget. Jeff Fassett Seconded. There was no discussion. The motion was approved.

United States Geological Survey (USGS) Report

Tim Boyle presented the USGS report (Attachment H). Jason Lambrecht was unable to attend. USGS operates two stateline gages, the Big Blue River at Barneston, NE, and the Little Blue River at Hollenberg, KS. USGS made 12 readings at Barneston and 17 at Hollenberg this last year. USGS installed a new stream gage on the Little Blue River at County Line near Deshler, NE. USGS added a radar sensor to the Barneston gage as backup to the main streamflow sensor.

Legal Report

LeRoy Sievers, legal counsel, reported that article 8 of the rules and the regulations specifies what is to be included in the report. Also noted that the last time that rules and regulations were published were in the 2011 report and the only change made was when we went from an audit to a review in 2014 noting the administration might want to print an up-to-date-version. The administration assigned that the latest rules and regulation be included in the next annual report noting the change in financial review.

Engineering Report

Jeremy Gehle submitted the engineering committee report (Attachment I). The flow at Barneston stayed above compact levels the entire year, but the flow at Hollenberg was below targets for 45 days. No new wells were drilled in the regulatory areas of the Big Blue- and Little Blue basins and one well in the Little Blue Basin was decommissioned in 2017. NeDNR in cooperation with the Little Blue NRD installed two

stream gages last year in the Little Blue River basin, one at the Little Blue River at Hebron, and one on the tributary of Rose Creek south of Fairbury.

Water Quality Report

Marty Link presented the Nebraska water quality report (Attachment J). Listings of TMDL development and 319 Activities in the Basin. NPDES permits in Nebraska counties in Big and Little Blue Basins.

Tom Stiles presented the Kansas water quality report (Attachment K). TMDL development schedule and activities. Tuttle Creek WRAPs/319 Nonpoint Source program. NPDES permitted facilities. One question was asked about the solution for Tuttle Creek turbidity. It has been addressed in navigation channels in Hawaii; they take either water or air and inject it to break up what has settled and create a low-grade turbidity flow toward the outflow. It will help control sediment and flow but not necessarily chlorophyll. Next year we will focus more on phosphorus and soil health.

Old Business

All old business has been covered throughout the course of the meeting.

New Business

There was no new business to be addressed.

Committee Membership and Special Assignments

No new committee appointments were made, so committee membership remains as follows:

Budget Committee – Amy Zoller (NE), Chris Beightel (KS)

Legal Committee – LeRoy Sievers (NE), Kenneth Titus (KS)

Engineering Committee – Jeremy Gehle (NE), Katie Tietsort (KS), Chris Beightel (KS)

Water Quality Committee – Dan Howell (NE), Annette Kovar (NE), Mary Link (NE), Craig Romary (NE), Tom Stiles (KS)

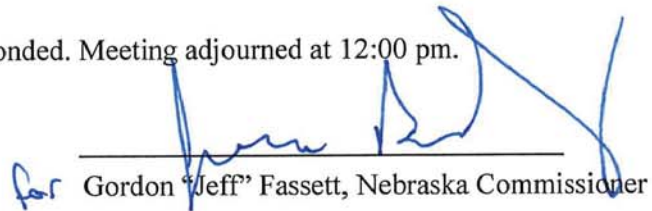
The secretary is to publish the Rules and Regulations in the next minutes as an appendix.

Adjournment

Jeff Fassett moved to adjourn, David Barfield seconded. Meeting adjourned at 12:00 pm.



David W. Barfield, Kansas Commissioner



Gordon "Jeff" Fassett, Nebraska Commissioner



W. Don Nelson, Compact Chair

Attachment A

**Report of the Kansas Commissioner
to the
BIG BLUE RIVER COMPACT ADMINISTRATION**

**2018 Annual Meeting
Beatrice, Kansas
May 24, 2018**

1. Legislation: Once again, the 2018 legislature session was dominated by issues related to taxation and budget. It was a relatively light session related to water issues.

HB 2691, Multi-Year Flex Account (MYFA) Deadline Change: Moves the deadline to apply for a MYFA from October 1 to December 31 to take current year water usage into account.

SB 194, GMD Charges: Permit groundwater management district (GMD) boards to increase the maximum water withdrawal charge from \$1.00 for each acre-foot to \$2.00 for each acre-foot. The charge would continue to be used to finance the operations of the GMD. In addition, the bill eliminates a provision of current law that permits the boards of GMD to assess a greater annual water withdrawal charge if more than 50 percent of the authorized place of use of the water is outside the district. (This provision had been subject to the maximum charge for groundwater withdrawal.)

2. Regulations: We continue to develop new and amended regulations, many of them responsive to what we have been hearing in the water vision process. Hearings on regulations currently under consideration include:

[regulation summary]

- Amendments to K.A.R. 5-14-10 and 5-14-12 related to civil penalties for pumping more water than authorized.
- Amendments to K.A.R. 5-14-11 regarding civil fines for non-reporting of water use.
- Amendments to K.A.R. 5-5-9, 5-5-10 and 5-5-16 on consumptive use in conversions from irrigation to another use.

3. Water management activities

- **Interstate matters – Republican River** – After more than 2 years of intense activity, including monthly face-to-face meetings and six interim agreements, last summer the states of Colorado, Kansas, and Nebraska, adopted long-term agreements to resolve separate disputes that arise as Colorado and Nebraska work to implement measures to insure their compliance with the Compact.
- **Local Enhanced Management Areas (LEMAs)** – In 2012, the Kansas Groundwater Management Districts were amended to allow GMDs to initiate the creation of these special management areas:
 - Northwest Kansas GMD No. 4 has requested the Sheridan 6 LEMA be extended for another 5 years under the same terms, except for some carryover of unused

allocations from the first 5 years. The hearing will be on May 31 in Hoxie. More on KDA's web site.

- Northwest Kansas GMD No. 4 has also requested a new District-wide LEMA that is currently under review by DWR. More on KDA's web site.
- A group of water users just northwest of Garden City in northern Kearney and Finney County are developing a LEMA proposal for their area. They have held two public meetings and are meeting monthly with GMD No. 3.
- **Water Conservation Areas (WCAs)** – We now have 7 approved WCAs with more actively being considered. The most significant is the Wichita County WCA, a plan that covers the entire county which is highly depleted, allowing individuals to enroll in the plan to extend the useful life of the aquifer in their area. All approved plans and more information is on our web site.
- **Quivira National Wildlife Refuge Impairment Complaint** – The U.S. Fish and Wildlife Service (Service) owns and operates the Quivira National Wildlife Refuge (Quivira), a wetland of international significance and part of the central U.S. flyway. Water is a critical component of its operation with a water right priority date of 1957. After decades of voluntary efforts to resolve its concerns were unsatisfactory, the Service filed an impairment complaint with KDA-DWR in April of 2013. KDA-DWR then began its investigation of the alleged impairment. KDA-DWR published its final impairment investigation during April 2016. We are now working with effected parties to reach a solution. Earlier this year, GMD No. 5 made a second offer to resolve the impairment. The U.S. Fish and Wildlife responded during April that the offer was insufficient, with specific comments on needed reforms. Discussions continue.
- **City of Hays / R9 Ranch Water Right Changes and Water Transfer Application** – The City of Hays purchased the approximately 7,000-acre R9 Ranch and its thirty water rights in southwestern Edwards County in 1995 with the intention of someday using the water as part of the city's water supply. During June, 2015, the City submitted applications to KDA-DWR to change the use made of water from irrigation to municipal use for the R9 Ranch water rights. As these proposed changes envision moving greater than 2,000 acre-feet more than 35 miles, during January, 2016, the cities of Hays and Russell submitted an application to transfer water from Edwards County to the cities of Hays and Russell pursuant to the Water Transfer Act (K.S.A. 82a-1501, et seq.). We are nearing completion of consideration of the change applications, which must be completed prior to the water transfer process.
- **Aquifer Storage and Recovery Project, City of Wichita** – DWR continues discussions with the City of Wichita in regard to their ASR project and how its permit conditions can be revised to meet the City's current objectives for the project (as a supplemental source of water for long-term drought) in a manner that protects the public interest.

Attachment B



Kansas-Nebraska Big Blue River Compact Meeting

May 2018

Prepared By:

*Kansas Department of Agriculture
Division of Water Resources
6531 SE Forbes Ave., Ste. B
Topeka, KS 66619
785-296-5733*

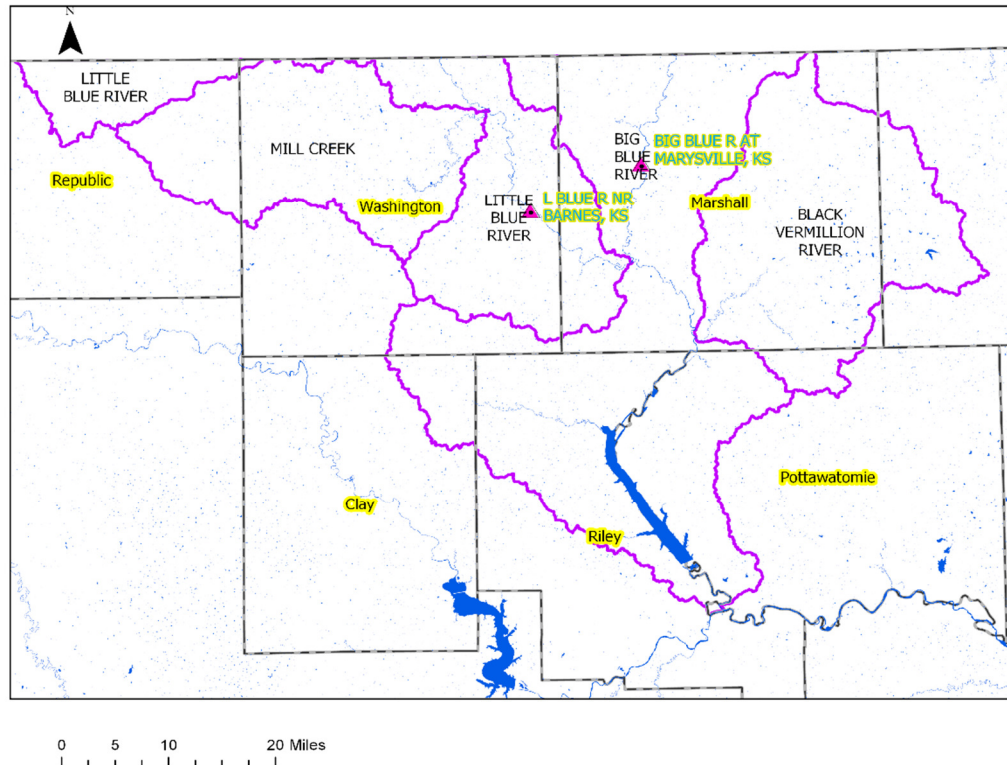
Photo by Dirk Hargadline, USGS

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1. Background and Objective

The Kansas Nebraska Big Blue River Compact (hereinafter, “BBRC”) was enacted in 1971. The purpose of the compact is to promote interstate comity, achieve equitable apportionment of the waters of the Big Blue River Basin and promote the orderly development thereof, and to encourage an active pollution abatement program in each state. In Kansas, the BBRC spatial extent encompasses the entire Big and Little Blue River basin areas, including their tributary basins, the Mill Creek and Black Vermillion River (see below). The Big Blue River and Little Blue River are the focal streams within the BBRC. The Little Blue River is located within Washington County and intersects the Big Blue River within Marshall County. The Big Blue River is located within Marshall County and Riley County. Tuttle Creek Reservoir is located on the Riley County and Pottawatomie County line within the Big Blue River Basin.



Key objectives for this report are to summarize the following conditions within the Kansas BBRC area for calendar year 2017 and thus far in 2018

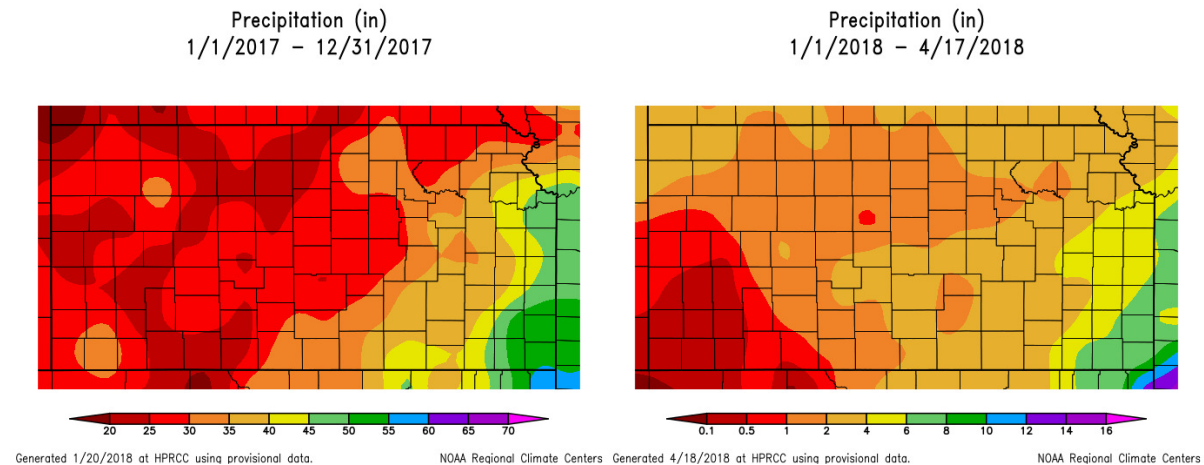
- climatic conditions;
- streamflow;
- administration activities;

- compliance and enforcement activities;
- new applications; and,
- other updates

2. Climatic Conditions

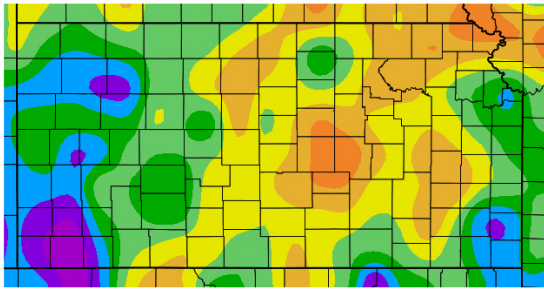
A. Precipitation

The High Plains Regional Climate Center (HPRCC) reported between 25 and 40 inches of precipitation in calendar year 2017 across the (hereinafter “BBRC”) and reported 1 to 4 inches thus far through April 17, 2018.



We are seeing significantly dryer conditions in the Kansas BBRC thus far in 2018, with the Basin receiving less than normal precipitation. In 2018, precipitation ranged from -1 inches (northern counties) to -6 inches (southern counties). In calendar year 2017, conditions were also dryer than normal with precipitation ranging from 0 to -6 inches less than normal, with most of the Basin receiving 3-6 inches less precipitation in 2017.

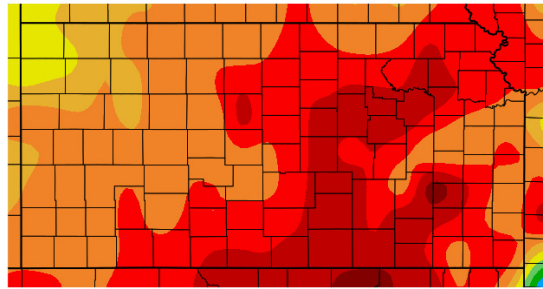
Departure from Normal Precipitation (in)
1/1/2017 – 12/31/2017



Generated 1/20/2018 at HPRCC using provisional data.

NOAA Regional Climate Centers

Departure from Normal Precipitation (in)
1/1/2018 – 4/19/2018

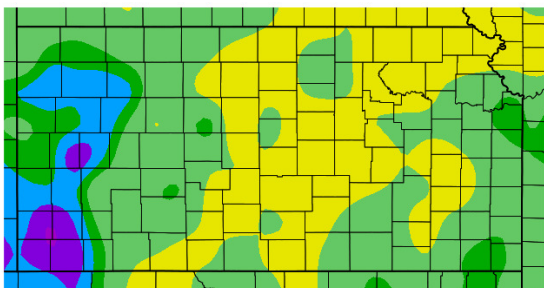


Generated 4/20/2018 at HPRCC using provisional data.

NOAA Regional Climate Centers

The Standardized Precipitation Index (SPI) is like the Palmer Drought Index (PDI) but considers only precipitation and no other factors. The SPI generally showed a slightly dryer trend for 2017, and so far, this spring, a much dryer trend for the Basin.

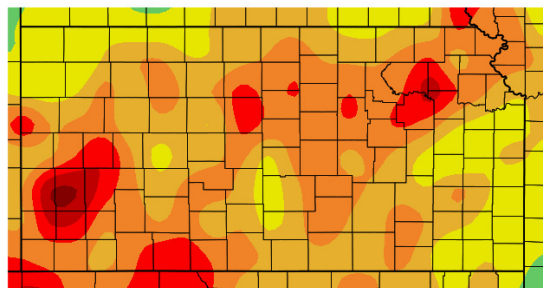
12-Month SPI
1/1/2017 – 12/31/2017



Generated 1/20/2018 at HPRCC using provisional data.

NOAA Regional Climate Centers

Year-to-Date SPI
1/1/2018 – 4/18/2018



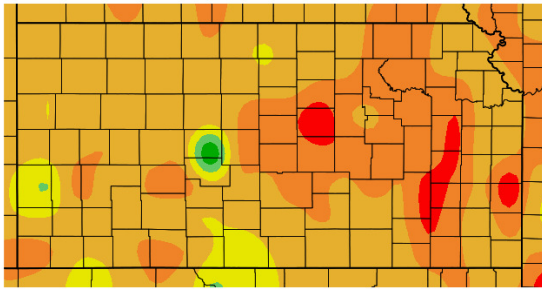
Generated 4/19/2018 at HPRCC using provisional data.

NOAA Regional Climate Centers

B. Temperature

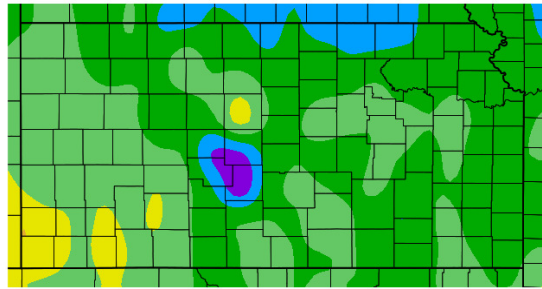
Temperatures for the calendar year 2017 remained slightly warmer than normal by about 1-3 degrees in most of the Basin. Temperatures have been clearly cooler this spring in comparison to normal spring temperatures.

Departure from Normal Temperature (F)
1/1/2017 – 12/31/2017



Generated 1/20/2018 at HPRCC using provisional data. NOAA Regional Climate Centers

Departure from Normal Temperature (F)
1/1/2018 – 4/19/2018



Generated 4/20/2018 at HPRCC using provisional data. NOAA Regional Climate Centers

3. Streamflow and Administration

A. Compact Compliance

The Compact provides for minimum target flows to reach the Stateline of Kansas on both the Big and Little Blue Rivers measured by river gages at Barneston, NE on the Big Blue and Hollenberg, KS on the Little Blue from May through September. When the flow falls below these target values, Nebraska Department of Natural Resources (DNR) administers surface water rights and associated alluvial groundwater use located within the regulatory reaches of either river junior to 1968, until the target value is exceeded.

The compact sets forth the following stream flow targets:

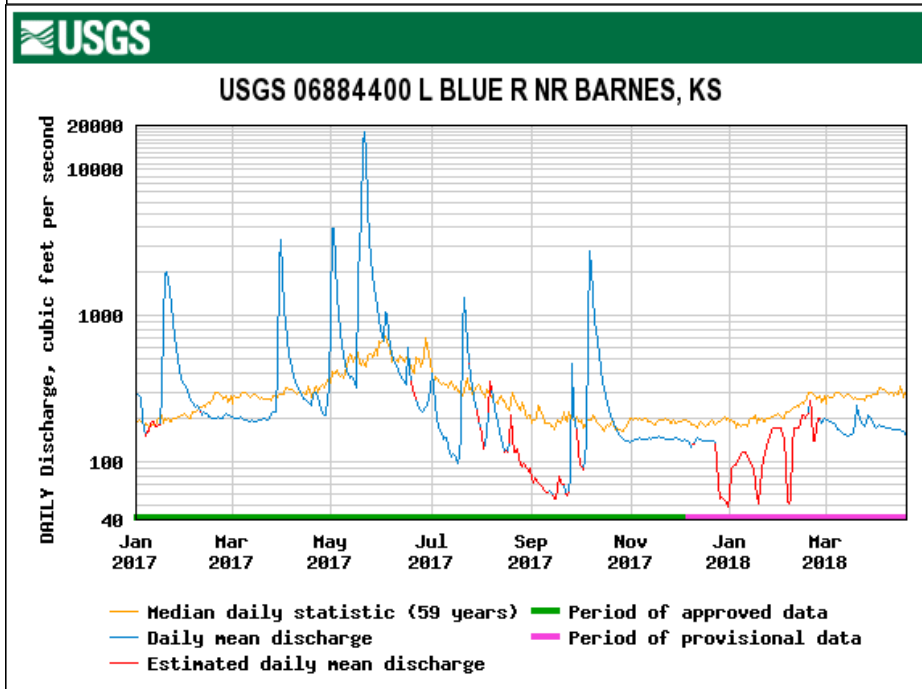
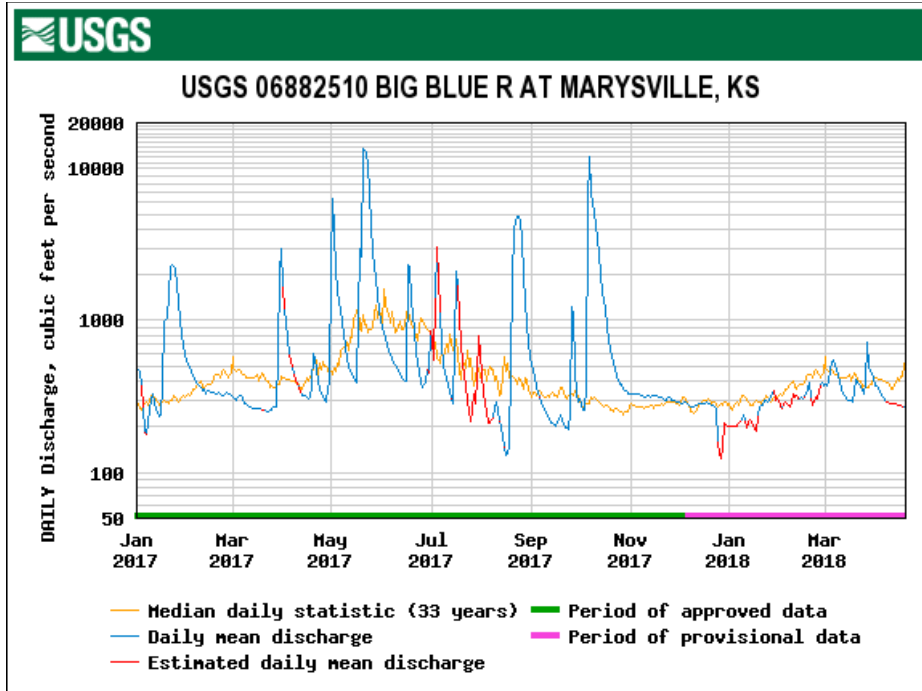
Month	Big Blue River at Barneston, NE	Little Blue River at Hollenberg, KS
May	45 cfs	45 cfs
June	45 cfs	45 cfs
July	80 cfs	75 cfs
August	90 cfs	80 cfs
September	65 cfs	60 cfs

B. Kansas MDS Administration

Minimum desirable streamflow (MDS) requirements were made part of the Kansas Water Appropriation Act by the Kansas Legislature to ensure base flows in certain streams to protect existing water rights and to meet in-stream water uses related to water quality, fish and wildlife and recreation. The Division monitors 23 streams and rivers at 33 locations for MDS. Within the BBRC, the Kansas Department of Agriculture (KDA) Division of Water Resources (DWR) monitors MDS gages located on the Big Blue River at Marysville, KS and on the Little Blue River near Barnes, KS (see Figure, page 3). When flows drop below the following established threshold, pumping restrictions are imposed on permits or water rights granted after the MDS provision was made into law (April 12, 1984).

Minimum Desirable Streamflows (cfs)												
Watercourse	Month											
	J	F	M	A(a)	M(a)	J(a)	J	A	S	O	N	D
Big Blue												
Marysville	100	100	125	150	150(d)	150(d)	80	90	65	80	80	80
Little Blue												
Barnes	100	100	125	150	150(d)	150(d)	75	80	60	80	80	80
(d)	Subject to the stateline flows contained in the Blue River Compact.											

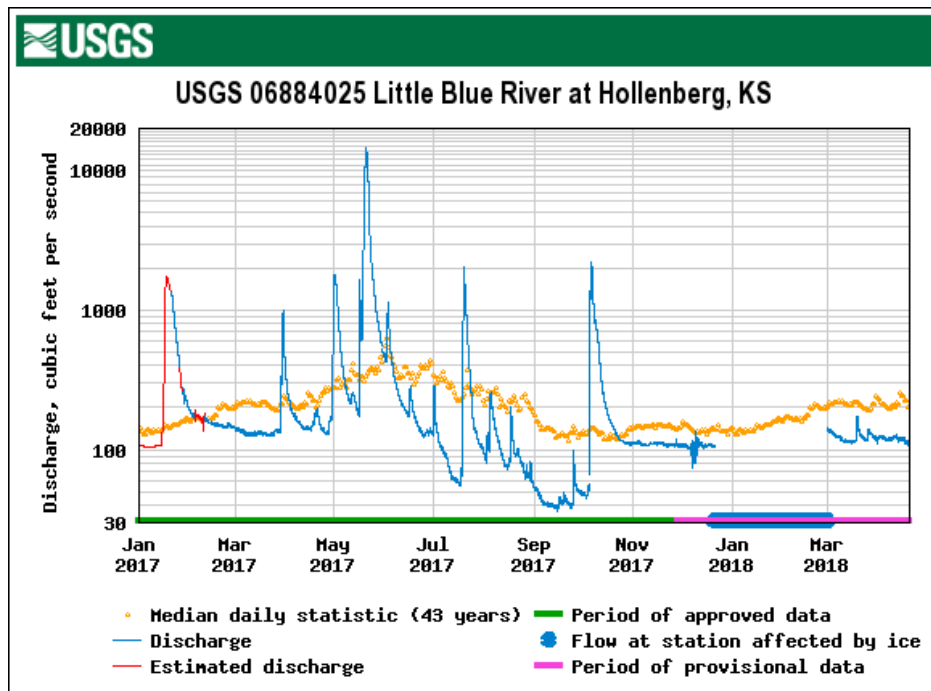
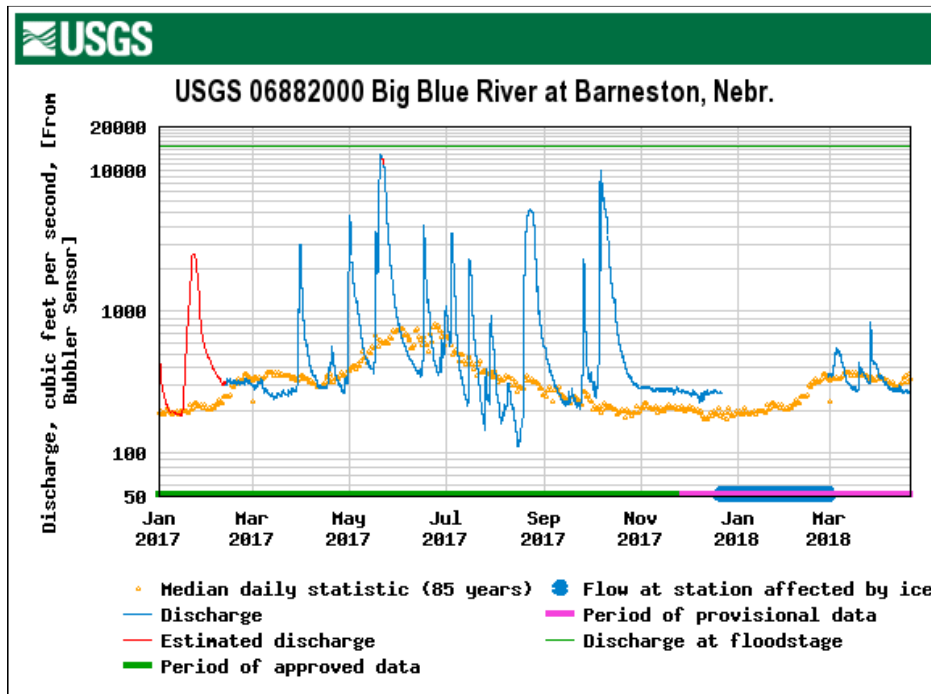
The United States Geological Survey (USGS), in partnership with Federal, State, Tribal, and local agencies, operates and maintains stream gages on waterways nationwide. The stream gages electronically record streamflow measures in near real-time. The following summarizes streamflow compared to the statistical median flows at MDS gages located on the Big Blue (Marysville, KS) and Little Blue (Barnes, KS) for the calendar year 2017 through present (April 2018).



In summary, streamflow in the Big Blue generally mirrored the median trend, with late Spring through Summer peak fluctuations. Streamflow in the Little Blue has generally been below median flows since late summer of 2017.

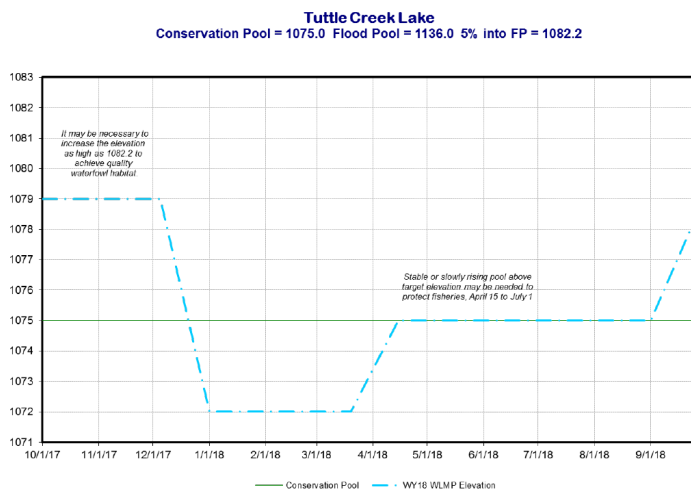
C. Streamflow within the BBRC

The following summarizes streamflow compared to the statistical median flows at compact gages located on the Big Blue (Barneston, NE) and Little Blue (Hollenberg, KS) for the calendar year 2017 through present (April 2018).



D. Lake Level Management

The Kansas Water Office (KWO), in collaboration with the Army Corps of Engineer and the Kansas Department of Wildlife and Parks, prepares Lake Level Management Plans (LLMPs) on an annual basis. LLMPs provide the basis and framework for raising and drawdown of reservoir water storage, as necessary to optimize natural resources and recreational activities. In general, controlled water storage and subsequent scheduled releases are made on a seasonal basis to benefit wildlife and the quality of habitat. While each reservoir has a unique LLMP, the Tuttle Creek Lake LLMP is depicted to the right.



Lake Level Management plans were approved for State Fiscal Year 2018 in fall of 2017. The current Tuttle Creek Lake LLMP is generally the same focus as the plans of previous years. The focus continues to be fish and other wildlife support (see below).

TUTTLE CREEK LAKE

One of the main objectives of water level management at Tuttle Creek is to increase recruitment of crappie in the lake. The success or failure of past management plans in many cases has been out of human control due to uncontrollable inflow rates, storage of water in the flood control pool for T&E species in the summer months, and late season releases in support of navigation on the Missouri River. However, coordination between state and Federal agencies during moderate flood and drought events can minimize damage to the lake's shoreline habitat that is essential for crappie spawning success from such uncontrolled events. The request for the lake level to be lowered in the winter months is to serve primarily as additional storage for frequent spring rises in lake levels which would require untimely releases. This request was intended to lessen the probability of untimely reservoir releases that adversely impact crappie spawning success.

October 1 to December 5: Maintain lake level at elevation 1079 NGVD for the attraction for migrating waterfowl. It may be necessary to increase the elevation as high as 1082.2 NGVD to achieve quality waterfowl habitat. The necessary elevation will be coordinated with the wildlife biologist.

December 5 to January 1: Lower the lake level to elevation 1072 NGVD to reduce ice damage and provide additional water storage. Drawdown dates are approximate and will depend on the fall waterfowl needs and the potential for icing. The drawdown will be coordinated with the State resource managers.

January 1 to March 20: Maintain lake level at 1072 NGVD.

March 20 to April 15: Allow lake level to rise to conservation pool (1075 NGVD) to enhance lake boating access.

April 15 to July 1: Coordinate evacuation of flood water to enhance potential for crappie population recruitment.

Note: Holding water above multipurpose pool level during crappie spawning and nursery periods has improved crappie recruitment into the lake fishery. Storage of water in the flood control pool in late spring has also been required due to the presence of threatened and endangered terns and plovers nesting on the Kansas River's sand bar habitat downstream of the lake. Maximum sustained pool elevation during this period will be 1082.2.

July 1 to September 1: Maintain lake elevation at conservation pool (1075 NGVD) to allow shoreline habitat to re-vegetate. Consideration will be given to any forecasted navigation demands before evacuating flood storage that may exist on or around July 1.

September 1 to September 30: Allow lake level to rise to 1079 NGVD to inundate wetland habitat and attract migrating waterfowl.
Constraint: Consideration of downstream flow requirements for Vested Right, File No. DG-11.

Note: When necessary, the water level management plan at Tuttle Creek Reservoir will provide support for navigation. Changes in lake levels will be coordinated to support additional reservoir uses such as fish spawning, recreation, and waterfowl management.

E. Kansas Water Administration

Administration activities include administration for Minimum Desirable Streamflow (MDS) of water rights junior to April 12, 1984 due to flows falling below MDS criteria, administration of water rights subject to statutory protection of releases from storage under water reservation rights (K.S.A. 82a-706b), and administration of water rights by priority. For the 2017 calendar year, through today, flows remained sufficient to avoid any MDS administration in the Big Blue River, Little Blue River, Mill Creek, or Black Vermillion River basins.

In 2017, a total of 6 water rights were administered in Kansas for MDS as follows:

MDS Stream	Administration Began	Administration Ceased	Files Administered
Little Arkansas River	August 10, 2017 (above Alta Mills)	TBD	6

In 2018, a total of 166 water rights are currently being administered within the Topeka Field Office for MDS as follows:

MDS Stream	Administration Began	Administration Ceased	Files Administered
Delaware River	March 23, 2018	TBD	38
Mill Creek (Kansas)	April 9, 2018	TBD	14
Republican River (Clay Center)	April 13, 2018	TBD	114

As of May 21, 2018, the following represents a snapshot of MDS statewide:

Streamflows as of May 21, 2018			
Gaging Station	Current Flow	May MDS	Comment
Republican River at Concordia	73	150	Admin began April 13, 2018
Republican River at Clay Center	200	250	Admin began April 13, 2018
Smoky Hill River at Ellsworth	33	35	
Little Blue River near Barnes	143	150	
Mill Creek near Paxico	127	30	Admin began April 12, 2018
Delaware River near Muscotah	13	20	Admin began March 23, 2018
Rattlesnake Creek near Macksville	0	10	No surface water diversions junior to MDS above gage
Rattlesnake Creek near Zenith	11	15	No surface water diversions junior to MDS above gage
Little Arkansas River at Alta Mills	3	8	MDS admin began Aug 10, 2017

South Fork Ninnescah River near Pratt	7	8	No surface water diversions junior to MDS above gage
Whitewater River near Towanda	22	25	Admin began April 12, 2018

Pursuant to K.S.A. 82a-706b, KDA DWR protects water released from storage in Federal Reservoirs. In 2017-2018 presently, a total of 37 water rights were administered in Kansas for **Protection** as follows:

Stream	Administration Began	Administration Ceased	Files Administered
Neosho River	September 11, 2017	TBD	10
Elk and Verdigris Rivers	September 13, 2017	November 13, 2017	27

The Division continues working with the Kansas Water Office (KWO) and a recently formed Board of Directors to enact the Lower Republican Access District, Inc. (hereinafter, "District"). The objective of the District is to serve as the framework to access water from Harlan County Reservoir in Nebraska under the Warren Act Compact (made available through Republican River Compact Agreements). Warren Act water has historically averaged between \$3 - \$25/AF over the past 20 years, depending on maintenance activities at Harlan County Lake. Additionally, there would be a cost associated with managing the District. The area(s) to be served include five (5) north-central Kansas Counties: Jewell, Republic, Washington, Clay and Cloud. Ultimately members would be in on based on acres for the ability to pump junior surface water and/or groundwater during MDS administration. As of March 26, 2018, there were 159 Junior water rights that are impacted when MDS is administered.

The newly elected Board consists of seven (7) Board members (2-Clay Co., 2 Republic Co, 2 Cloud Co, 1-at large from Clay Co). A draft set of By-Laws has been generated and is pending execution by the District, KWO, and DWR. From a timing standpoint, the District was not able to get its legislation introduced into this past session. Consequently, water will likely not be available until 2019. There have been some discussions of conducting a "test" run to better understand transit losses within the system; currently, the KWO is in the process of evaluating logistics and the statutory mechanisms in place to cover the release.

4. Compliance and Enforcement within the BBRC

A. Civil Penalty Regulations

The KDA DWR, with support from KDA legal, enforce violations of the Kansas Water Appropriation Act through its Compliance and Enforcement Unit. On July 14, 2017, revisions to the regulations regarding civil penalties became effective. In particular, civil penalties for violations of overpumping (K.A.R. 5-14-12) and other violations of the Kansas Water Appropriation Act (K.A.R. 5-14-10) were amended. The following tables summarize the amended civil penalties and subsequent suspensions thereof:

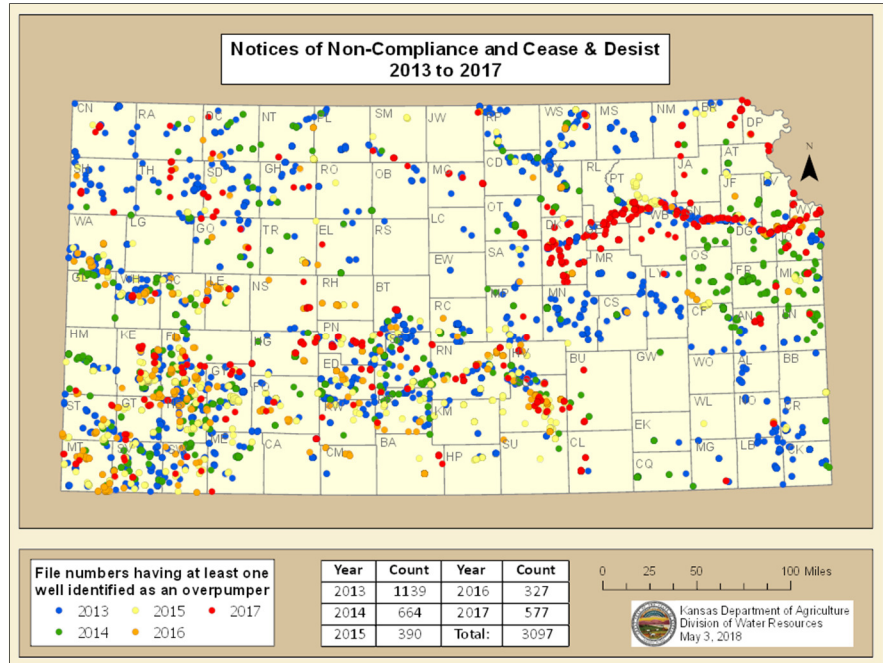
K.A.R. 5-14-10. Civil penalties for violations other than exceeding the authorized quantity of water.			
Violation	Monetary penalty	Maximum number of days monetary penalty applied	Suspension of water use
Lower-tier miscellaneous	\$500 per day	20	One year
Failure to provide information	\$500 per day, for each day the violation exists	20	One year
Unauthorized diversion or threat to divert	\$500 per day	20	One year
Denial of access	\$1,000 per day	10	Three years
Lack of water flowmeter	\$1,000 per day	10	Three years
Noncompliance with a substantial order	\$1,000 per day	10	Five years
Meter manipulation	\$1,000 per day	10	Five years
Falsification	\$1,000 per instance of falsification	Not applicable	Five years
Non-compliance with a special condition of a change application approval	\$1,000 per day	10	Two years

K.A.R. 5-14-12. Civil penalties for exceeding the authorized quantity of water.			
Penalty category	Severity level A	Severity level B	Severity level C
1	Written notice of non-compliance	\$1,000 per day and a reduction in quantity equal to two times the quantity overpumped, not to exceed the annual authorized quantity	\$1,000 per day and a reduction in quantity equal to three times the quantity overpumped, not to exceed the annual authorized quantity
2	\$1,000 per day and a reduction in quantity equal to two times the quantity overpumped, not to exceed the annual authorized quantity	\$1,000 per day and a one-year suspension	\$1,000 per day and three-year suspension
3	\$1,000 per day and a one-year suspension	\$1,000 per day and a three-year suspension	\$1,000 per day and a four-year suspension
4	\$1,000 per day and a three-year suspension	\$1,000 per day and a four-year suspension	\$1,000 per day and a five-year suspension
<p>Penalty categories. Any violation for diversion of water in excess of the authorized quantity may be subject to the penalties specified in one of the following categories, as listed in subsection (e): category 1, category 2, category 3, or category 4.</p> <ul style="list-style-type: none"> • A category 1 penalty may be assessed if no penalty for diversion of water in excess of the authorized quantity has been assessed against the water right for a violation that occurred during the five calendar years preceding the calendar year in which the most recent violation occurred. • A category 2 penalty may be assessed if one prior penalty for diversion of water in excess of the authorized quantity has been assessed against the water right for a violation that occurred during the five calendar years preceding the calendar year in which the most recent violation occurred. • A category 3 penalty may be assessed if two prior penalties for diversion of water in excess of the authorized quantity have been assessed against the water right for a violation that occurred during the five calendar years preceding the calendar year in which the most recent violation occurred. • A category 4 penalty may be assessed if three or more prior penalties for diversion of water in excess of the authorized quantity have been assessed against the water right for a violation that occurred during the five calendar years preceding the calendar year in which the most recent violation occurred. 			
<p>Severity level of violation. Any violation may be assigned a severity level based upon the amount of water diverted in excess of the authorized quantity, according to the following:</p> <ul style="list-style-type: none"> • A water right that has exceeded its authorized quantity by less than an amount equal to the amount resulting from 24 hours of pumping at the maximum authorized rate may be assessed a maximum of a severity level A penalty. • A water right that has exceeded its authorized quantity by an amount equal to at least the amount resulting from 24 hours of pumping but less than an amount equal to 72 hours of pumping at the maximum authorized rate may be assessed a maximum of a severity level B penalty. • A water right that has exceeded its authorized quantity by an amount equal to at least the amount resulting from 72 hours of pumping at the maximum authorized rate may be assessed a maximum of a severity level C penalty. 			

B. Compliance and Enforcement Activities

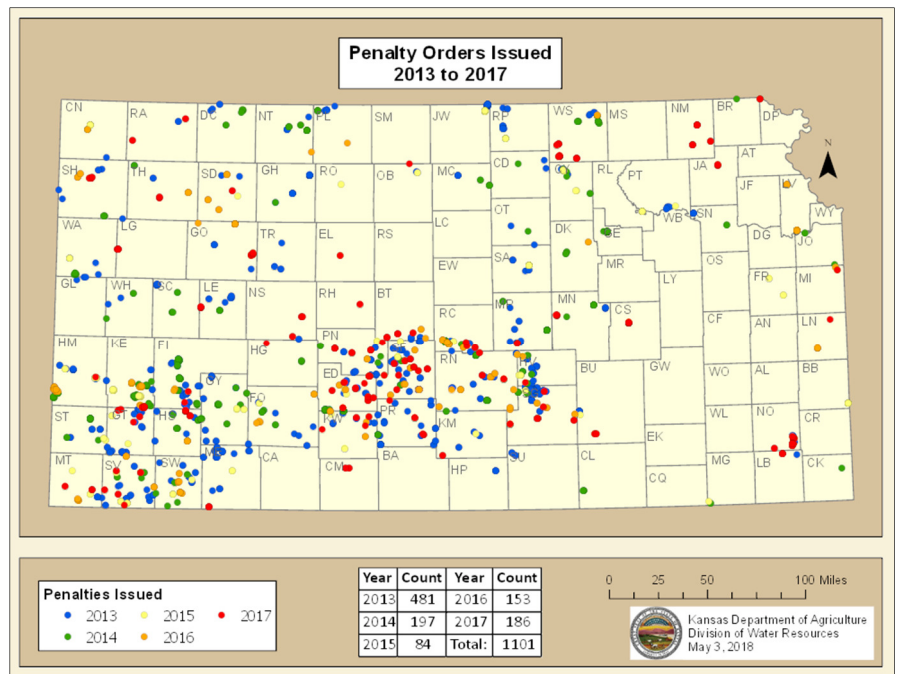
a. Notice of Non-Compliance/Cease & Desist Notices

In 2017, the Division sent “Notice of Non-Compliance/Cease & Desist Notice” (NONC-CD) on two water rights within the BBRC area, one for failing to install a required meter and one for failing to provide metered quantities on their 2016 water use report. So far in 2018 no NONC-CD orders have been issued in the BBRC area. The figure to the right represents the State-wide NONC-CD issued during the 2013-2017 timeframe.



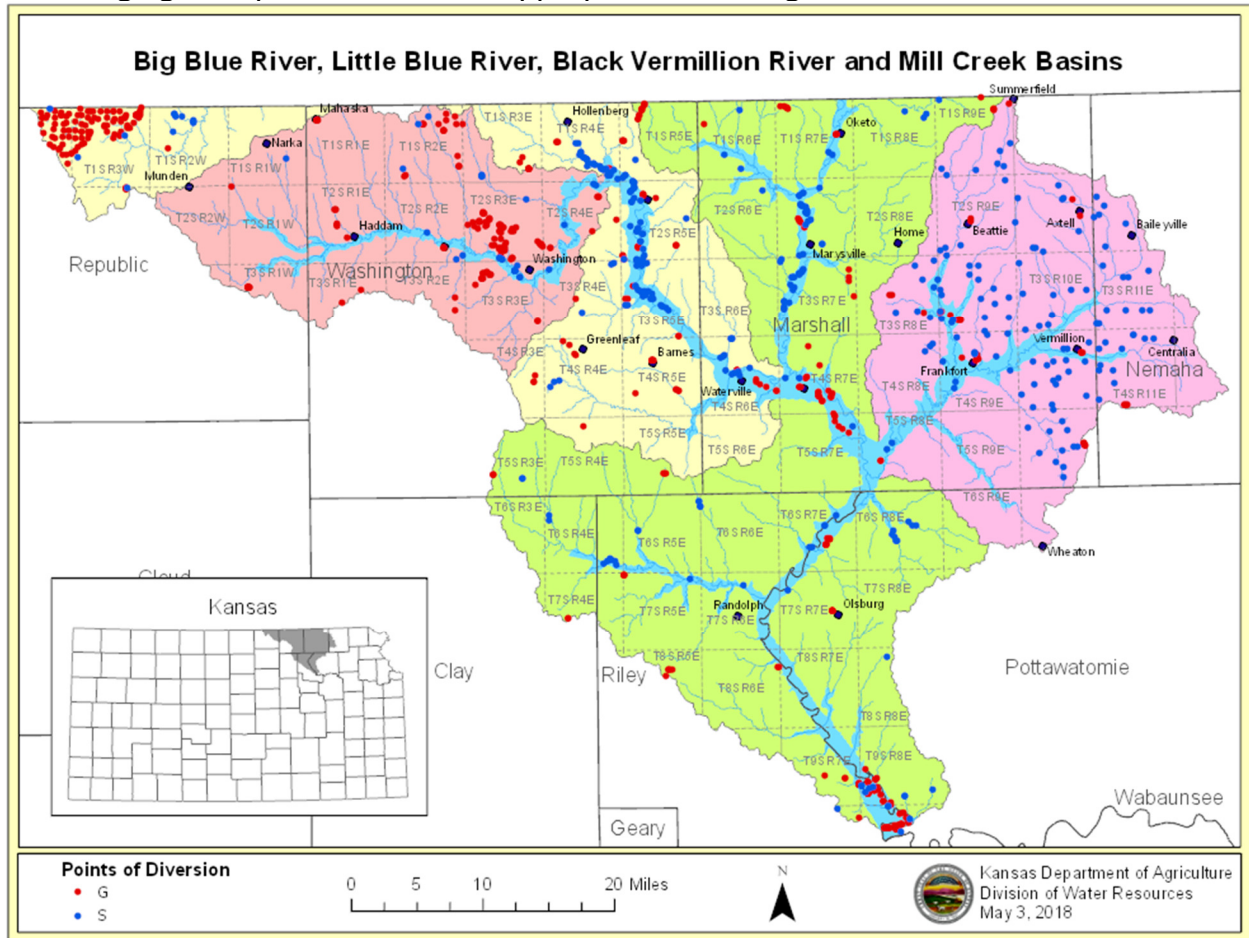
b. Penalty Orders

In 2017, penalty orders on one water right were issued in the BBRC area related to exceeding authorized quantity in 2016. So far for 2018, no penalty orders have been issued in the BBRC area. State-wide, in 2017, 186 penalty orders were issued. The figure to the right depicts the distribution of those penalty orders issued during the 2013-2017 timeframe.



5. New Applications

In 2017, KDA DWR received 8 new applications (6 appropriations + 2 term permits) for the BBRC basin. This number is less than the 9 applications received in 2016 for the BBRC basin. For 2018 thus far, we have received 8 new application requests in the BBRC basin. The following figure represents the total appropriations through 2017 within the BBRC.



Attachment C

**Nebraska State Report
Big Blue River Compact Administration
2017 Annual Meeting
May 24, 2018**

Welcome

I would like to welcome everyone who is joining us today for the 2018 Big Blue River Compact annual meeting. I would also like to extend thanks to the Kansas Department of Agriculture for traveling here today. We are pleased to be meeting at the Education Center of the Homestead National Monument of America for this year's meeting and appreciate the rolls and refreshments provided by the Lower Big Blue NRD. The Nebraska Department of Natural Resources (Department) appreciates the hard work of the Natural Resources Districts (NRDs), other state agencies, and our agricultural producers, who partner with us in managing the water resources in the Big Blue and Little Blue River Basins.

Before moving on, I'd also like to acknowledge and congratulate Larry Moore, the Nebraska Advisor, on his position reappointment by Governor Ricketts which will extend through the year 2021.

Water Supply Conditions

In the 2017 water year, the water supply conditions varied significantly between the Big Blue and the Little Blue River Basins. In the Big Blue Basin, precipitation was generally average or slightly below average. In contrast, the lower and middle portions of the Little Blue Basin were dry, receiving less than 90% of normal precipitation, as shown by the U.S. Drought Monitor report. Surface water administration occurred on in the Little Blue River Basin this year, with all calls being required for the Blue River Compact. Our Lincoln field office supervisor, Jim Ostdiek, will have more on this in his upcoming surface water administration report.

Water Planning

Integrated Water Management

Integrated management planning efforts have continued to progress in the State of Nebraska. The Department is currently partnering with all 23 NRDs in the state to cooperatively develop or implement integrated water management plans (IMPs) (Figure 1). All Integrated Management Plans have an overarching purpose to protect and sustain a balance between hydrologically connected ground and surface water supplies and existing uses; yet each plan is uniquely tailored to address the specific conditions of individual NRDs.

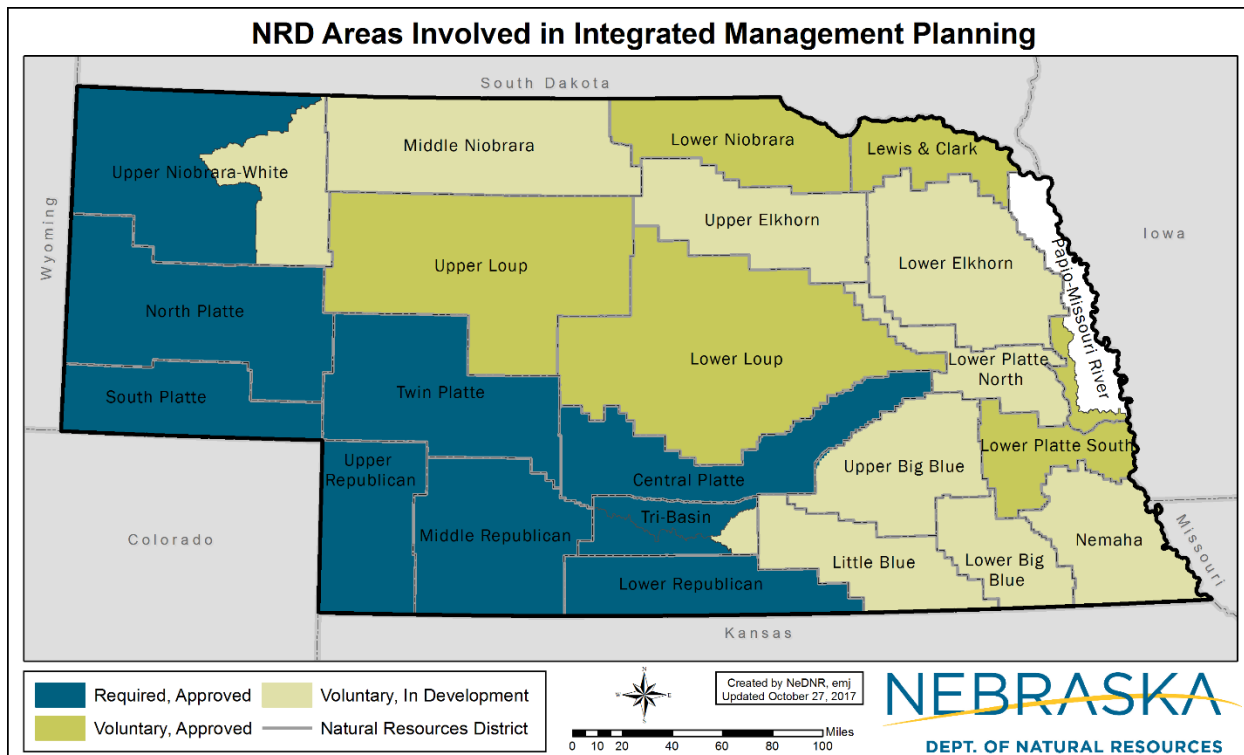


Figure 1. Status of integrated management plans throughout the State.

Here in the Blue River Basin, voluntary integrated water management efforts have continued to progress, with three voluntary integrated management plans underway and one set to begin this summer.

In the Little Blue River Basin, both the Tri-Basin NRD and the Little Blue NRD continued to work on their own voluntary IMPs, holding separate public involvement processes to formulate the basis for goals and objectives of each plan. The Little Blue NRD stakeholder process progressed most notably in 2017. Here, the stakeholder group was, from the beginning, largely divided on major irrigation water use issues. The divide was apparent through the entirety of the stakeholder meetings in 2017. However, it seemed that there was an improvement in acknowledgement of other stakeholders' perspectives as meetings progressed. And in a surprising turn of events, at a late summer meeting, the entire stakeholder group unanimously voted to move a complex set of goals and objectives forward to the NRD and Department for consideration. No one was really expecting a consensus to occur at this meeting, but when it did, it was a moving experience and the value of the public participation process could not be overstated.

Meanwhile, the Tri-Basin NRD's stakeholder group worked through its own set of goals and objectives for the Little Blue River Basin. This group's primary focus is fairness in water conservation across borders; they are hoping the integrated management process will help pave the way for more uniform groundwater management actions throughout the Basin.

Voluntary IMP work also progressed in the Big Blue Basin in 2017. In February 2017, the Upper Big Blue NRD requested the initiation of a voluntary IMP with the Department. The Upper Big Blue NRD was in a unique situation because they were undertaking development of both a voluntary IMP and a Water Quality Management Plan at the same time, and for the same area. Herein, lied

an unprecedented opportunity to combine water quality and water quantity planning. As such, the NRD, the Nebraska Department of Environmental Quality (NDEQ), and Department discussed at length the possibilities and challenges of combining planning processes, each of which operates under its own regulatory framework and has its own funding mechanisms and requirements for stakeholder group make-up. Despite the challenges, the NRD, NDEQ, and Department made the decision to combine the water quality and water quantity planning processes, to the extent that there would be one stakeholder group to provide input for both the water quality management plan and the IMP, although the plans themselves would be separate documents.

This was a unique opportunity for several reasons: The stakeholders would benefit by discussing water quantity and water quality issues as a whole, NDEQ and the Department would experience first-hand the other agency's planning process, and the Upper Big Blue NRD would be able to optimize time and funding resources by overlapping the stakeholder processes. Thus, through 2017, the NRD, NDEQ and Department worked together to develop a scope for the stakeholder process and subsequently selected a consultant to assist with facilitation of stakeholder meetings. The combined stakeholder meetings are set to begin in June 2018.

Meanwhile in the Lower Big Blue NRD, the Department has appreciated the patience of Dave Clabaugh and staff, as they requested initiation of a voluntary IMP with the Department back in July 2016. The Department is planning to begin work with the NRD on this voluntary IMP in July 2018.

The Department continues to recognize great value in working with the Blue Basin NRDs on integrated management planning initiatives. We look forward to continuing these relationships to proactively manage surface and groundwater supplies and uses in the Basin.

Voluntary Water Use Reporting

To compliment integrated management planning activities, the Department has created a voluntary online water use reporting tool that is now being used by water users in both the Little Blue and Big Blue River Basin. In 2017, 27% percent and 31% of surface waters users voluntarily reported their water use in the Little Blue and Big Blue River Basins, respectively. This tool was made available state-wide in 2017, and the Department will continue requesting data at this level moving forward.

Basin-Wide Water Planning

In 2017, the Department also continued to work with local NRDs on basin-wide planning and coordination activities that cover the Republican, Upper and Lower Platte, and Niobrara River Basins. Upon completion of a basin-wide plan, the individual NRDs' integrated management plans may be updated to support the basin-wide initiatives, so that the two planning mechanisms work in conjunction with and parallel to one another.

The Republican River Basin-Wide Plan is currently in development by the four Republican River NRDs and the Department. The five entities are collaborating with each other and with the Plan's Stakeholder Advisory Committee to develop Plan components, including goals, objectives, action items, a schedule for management actions, and measureable hydrologic objectives to help assess plan implementation progress. NeDNR and the NRDs are nearing completion of a full draft of all plan sections, which will be reviewed by the stakeholders. The Plan will be completed no later than April 2019.

The year 2019 will also mark the conclusion of the first 10-year increment of the Upper Platte River Basin-Wide Plan. Development of the second increment plan is underway through joint efforts between the five Upper Platte NRDs and the Department and will be completed by September 2019. To ensure the overarching goals of the Plan, which are to sustain a balance between water uses and supplies and also to maintain compliance with interstate agreements, are met, each of the NRDs are updating their individual integrated management plans.

For the Lower Platte River Basin, the seven Lower Platte NRDs and the Department completed a voluntary basin-wide plan, which was adopted in October 2017. This is the first plan of its type to be implemented in the State of Nebraska.

In the Niobrara River Basin, the Nebraska Game and Parks Commission, Nebraska Public Power District, the five encompassing NRDs and the Department have been discussing a coordinated approach to water management. This will evaluate the possible effects of LB1038, which involves a transfer of ownership of the Spencer Dam surface water appropriations. This coordinated approach process is expected to continue through 2020.

Legislative Updates

In 2017, Legislative Bill 98 was introduced by Senator Friesen at the request of the Nebraska Association of Resources Districts. This bill sought to extend the enacted extra three-cents-per-\$100-valuation taxation authority to NRDs in either fully or overappropriated basins for the administration and implementation of groundwater and surface water activities, often in partnership with NeDNR. After carrying over to the 2018 session, the bill died on General File at the session's conclusion and the tax authority will expire on June 30, 2018.

Efforts are currently underway to incorporate the 2018-2019 budget reductions into the Department's operating budget and funding plans. Several aid programs governed by Legislative Bills 944 and 945, which were approved on April 4, 2018, will experience funding reductions. These include:

- LB944
 - Nebraska Soil and Water Conservation Fund
 - Nebraska Resources Development Fund
 - Small Watershed Control Fund

- LB945
 - Water Sustainability Fund (no reduction for FY2018, but there will be for FY2019)
 - Critical Infrastructure Fund

The State of Nebraska anticipates to receive a four-million-dollar pre-litigation settlement from Colorado by December 31, 2018. This payment will be directly transferred to the Water Resources Cash Fund for uses in the Republican River Basin pertaining to improvements in surface water irrigation facilities.

Water Sustainability Fund

The Nebraska Water Sustainability Fund, established in 2014 through LB1098, accepted its third round of applications in July 2017. Twenty-one applications were determined to be satisfactory by the Director of the Department. These were then forwarded to the Nebraska Natural Resources Commission (Commission) for review and scoring in accordance with the authorizing legislation. Ultimately, thirteen of the applications were approved for funding in November 2017, resulting in over \$10.6 million dollars being awarded for water sustainability projects and studies.

One of the approved applications was for a project that is located in the Little Blue River Basin. Submitted by the Little Blue NRD, the project was approved to cost-share the design, permitting, and construction of small instream weirs and remnant oxbows at four (4) sites within the Little Blue River basin and to install monitoring equipment at these sites to evaluate recharge performance.

These targeted recharge structures will provide multiple benefits that are consistent with the intent of the WSF Program. These small instream weirs and remnant oxbows will provide:

- groundwater recharge
- flood control measures
- streambank and streambed stabilization
- water quality enhancements
- wetland restoration
- creation of wildlife and waterfowl habitat

Sponsors of projects that were previously approved for funding by the Commission submit annual reports which briefly describe project status, accomplishments, and plans for the next year. These reports are available to the public on the Commission's website at: <https://nrc.nebraska.gov/water-sustainability-fund-reports>. Applications are also available at: <https://nrc.nebraska.gov/applications-satisfactory-determination-director> by clicking on the Application Name in blue.

The fourth round of applications for the Water Sustainability Fund will be submitted between July 16 and July 31, 2018, via the Commission's website. The Commission is anticipating that about \$10.6 million will be available as of July 1, 2018 for this next set of applications. The following table summarizes the projects located within the Blue River Basin.

Table 1. Summary of Water Sustainability Fund projects in the Blue River Basin.

Blue River Basin Water Sustainability Fund Projects					
<i>Year Funded</i>	<i>Project Score</i>	<i>Project Number</i>	<i>Applicant</i>	<i>Project Title</i>	<i>Funded Amount</i>
2015	47	4117	City of Hastings (Utilities)	Aquifer Storage and Restoration Nitrate and Uranium Control Project, Hastings Nebraska	\$4,410,000
2016	42	4146	Little Blue NRD	Instream Weir Stabilization/Recharge Pilot Project	\$100,979
2016	42	4147	Little Blue NRD	Low-head Embankment Stabilization/Recharge Pilot Project	\$100,153
2017	44	5197	Little Blue NRD	LBNRD Oxbow Reconnections for Groundwater Recharge	\$389,820

Miscellaneous

Dam Safety

The Nebraska Dam Inventory contains 616 dams located within the Little Blue and Big Blue River Basins, which undergo periodic inspections by the Department. In 2017, the Department conducted 160 dam inspections throughout these areas, including all ten high hazard potential structures. The most common reoccurring problems found at dam sites were large trees and rodent holes in the embankments and rusted, corrugated metal pipe conduits running through the dams. As the average age of the dams in the Blue River Basin is 44 years, many have either reached or are nearing the end of their original design life.

The Department is working with dam owners and encouraging them to continue maintaining their dams and either line or replace the corroded spillway conduits. In 2017, the Lower Big Blue NRD sliplined the conduits at three dams with solid-wall HDPE pipe. At another dam in the Blue River Basin, the spillway pipe was too deteriorated, so the dam owner chose to replace the spillway conduit rather than try to rehabilitate it. There are at least three other spillway conduits scheduled for rehabilitation or replacement in 2018.

American Water Resources Association (AWRA) Specialty Meeting

Finally, we would like to report on an exciting event that is coming our way next spring. The American Water Resources Association will be holding a Specialty Conference for Integrated Water Resources Management in Omaha, Nebraska, from March 25 through March 27, 2019. The Department is taking a lead role in the planning of the conference, with staff participating in key roles on conference and technical committees. This will be a national/international conference where topics such as planning, science, collaboration and community engagement will be examined to gain insight about Integrated Water Resources Management across a broad spectrum.

Concluding Remarks

I would like to thank Kansas for continuing the partnership to work together to proactively manage the Blue River Basin. I would now like to turn it over to Jim Ost diek who will give a report on

Nebraska water administration, and Jim's report will be followed by the Blue River Basin NRD reports.

Attachment D

2018 Big Blue River Compact Administration Report

2017 Water Administration Activities in Nebraska

Precipitation conditions in 2017 showed an increase from 2016. The Little and Big Blue River Basins received below average precipitation for the months May through September in the lower reaches of the basins while the Big Blue Basin was well above average precipitation for the same period. Surface water administration was only in the Little Blue River Basin this year, with all calls being required for the Blue River Compact (Compact).

Little Blue Administration

The Little Blue's headwaters are located near Minden with the river exiting the state south of Fairbury. The basin encompasses approximately 2,700 square miles in all or parts of 10 counties. It contains 249 irrigation permits and 132 storage rights.

On July 13th, flows at the Hollenberg gage dropped below the Compact target, closing 120 natural flow and 110 storage rights. On July 19th, after flows exceeded the Compact target, these rights were reopened. This closing and reopening of rights associated with the Hollenberg gage continued throughout the summer months as the river flows fluctuated between exceeding and falling short of the Compact targets. This resulted in closings from August 15-17, August 28-August 31, and again from September 6-30.

Big Blue Administration

The headwaters of the Big Blue River are located in Hamilton County, north of Aurora. At its farthest western extent, the Basin's headwaters extend northwest of Hastings. The Big Blue River exits the state south of Barneston and continues until it reaches its junction with the Kansas River. The Basin encompasses 4,450 square miles in all or parts of 15 counties and contains 833 surface water irrigation permits and 359 storage permits.

The flow at Barneston exceeded the target through the entire administration period.

Concluding Thoughts

In general, the basins received above and below average rainfall depending on what part of the basins you were in and experienced average to below average summer temperatures. NeDNR issued four rounds of closing notices for Compact compliance, which totaled 37 days in the Little Blue Basin.

Attachment E

Well Drilling Activities

Eighty-two permits were issued for irrigation wells (44 new & 38 replacements) in 2017. At the end of 2017 there were registered 12,290 irrigation wells in the District. This is an increase of 84 active irrigation wells compared to the end of 2016.

Groundwater Level Changes

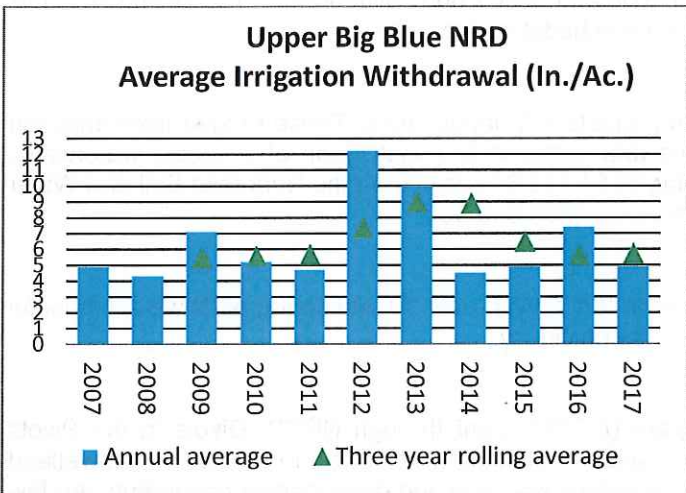
The average groundwater level change for the District from spring 2017 to spring 2018 was a rise of 0.87 feet. The spring 2018 groundwater level is 3.89 feet above the District's allocation trigger level.

Certified Irrigated Acres

Mandatory reporting of irrigated acres and other water uses began in 2006. As of January 1, 2018, there were 1,237,156 groundwater irrigated acres certified by the NRD. This represents an increase of 3,055 acres since January 1, 2017.

Groundwater Withdrawal

Mandatory reporting of groundwater withdrawal began in 2007. 2017 was the eleventh year that groundwater withdrawal reports were required in the District. Metering became mandatory on all wells effective January 1, 2016. Staff is currently inspecting meter installations. The average groundwater withdrawal for irrigation in 2017 was 4.9 inches per acre. The graph to the left shows the average annual withdrawal for irrigation over the past eleven years.



Groundwater Quality

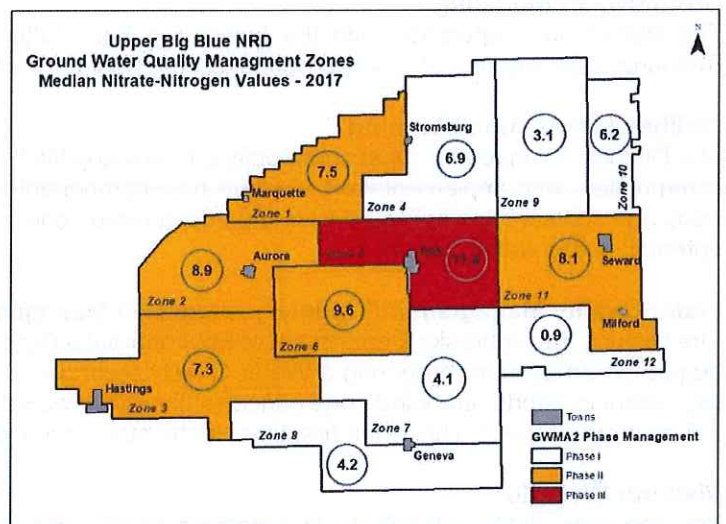
Nitrate

The District is divided into twelve management zones for groundwater quality management. The primary groundwater quality management concern is nitrate. Five zones are currently designated Phase II Management Area and one (Zone 5) is designated a Phase III Management Area. Phase II & III Management Areas requires farm operators to attend a training session on best management practices related to fertilizer and irrigation management. It also requires deep soil

sampling, irrigation scheduling and annual BMP reports. Farm operators in phase II & III must schedule irrigation using soil moisture sensors in at least one field. In a Phase III Management Zone anhydrous ammonia fertilizer applied from November 1st through February 29th must include a nitrification inhibitor. The timing of application of nitrogen fertilizers is restricted District wide. There are currently over 1,000 farm operators in the District required to attend nitrogen management training. The District is also working with the City of Hastings and the Little Blue NRD on a special water quality management area to address nitrate contamination in the Hastings Wellhead Protection Area.

Arsenic, Selenium and Uranium

Natural groundwater contaminants such as arsenic, selenium and uranium occur in many areas. These chemicals are associated with sediments in the aquifer as well as the unsaturated zone above the aquifer. Recent groundwater quality investigations near Hastings, Nebraska as well as other parts of the mid-west indicate that these naturally occurring contaminants may be released into the groundwater as a result of increased agriculture chemical contamination such as nitrate. The District is working with the University of Nebraska to develop a monitoring program for arsenic, selenium and uranium.



Dakota Aquifer

In 2016 the District started a water sampling program for the Dakota aquifer. The Dakota is used in the eastern part of the District for domestic wells where other sources are very limited. High commodity prices and drought conditions in 2012 and 2013 prompted construction of irrigation wells in the Dakota. Concerns have been raised over the impact that Dakota aquifer irrigation wells may have on the domestic groundwater supply. The quality of water in the Dakota can be "hit and miss" as to suitability for domestic and irrigation uses. It is unclear to what degree further development of the aquifer could impact water quality or domestic supplies to existing wells.

Project Grow

The District received a grant from National Association of Conservation Districts (NACD) for a cooperative project with the City of York. This is the first year of the project. District is farming 140 acres of the City wellfield with a rotation of cover crops to promote soil health. Educational activities are being developed to inform area producers about the benefits of cover crops and soil health. The project also sponsors a community garden area on City property.

Nebraska Agricultural Water Management Demonstration Network

This program encourages producers to improve irrigation scheduling using Etagages and Watermark sensors to determine crop water needs. The Etagage simulates crop water use through evaporation through a ceramic and green canvas membrane. Watermark sensors are used to measure soil moisture in a nearby field to confirm the Etagage's accuracy. This program began in the UBBNRD in 2005 with a collaborative effort with the University of Nebraska Extension and 18 collaborators. The program is now being implemented in several NRDs and over 2,000 collaborators. The District sells this equipment to irrigators at a reduced cost to encourage adoption of the scheduling practices.

Soil and Water Conservation Cost-share Assistance

In FY 2016-17 the District funded 43 soil and water conservation projects with landowners. These ranged from irrigation practices such as buried pipelines and conversion to subsurface drip irrigation to construction of terraces, waterways, planting of trees for windbreaks & enhancing wildlife. Funds totaling \$154,712.61 came from the Nebraska Soil and Water Conservation Program (\$95,172.26) and local NRD property tax revenue (\$59,540.35).

Variable Rate Irrigation Pilot Program

The District added VRI to the cost-share options as a pilot program in 2017. With over 10,000 center pivot we are hopeful that VRI can have a significant impact on water savings and water use efficiency.

Divots in the Pivots

The District receive a Regional Conservation Partnership Program (RCPP) grant through NRCS. Divots in the Pivots provides a variety of cost-share assistance to landowners with wetlands in the Rainwater Basin to conserve that wetland while improving profitability of the farming operation. VRI, fencing, livestock watering and conservation easements are few of the many options available. The Rainwater Basin Joint Venture is the major partner in this effort.

Groundwater Modeling

The District, in cooperation with the Lower Big Blue, Little Blue and Tri-Basin NRDs and the Department of Natural Resources are working on development of a Blue Basing Groundwater Model that can meet the needs of all participants.

Wellhead Protection Planning

The District continues to assist communities to develop Wellhead Protection Area (WHPA) Plans. The District also assists communities with implementation of some plan components. These include water sample collection, analysis from rural wells and soil samples collected from the unsaturated zone for nitrates. To evaluate potential for future contamination and potential public water well sites.

Water Quality Management/Voluntary Integrated Management Planning

The District, the Nebraska Department of Environmental Quality and The Nebraska Department of Natural Resources have begun the process for preparing a Water Quality Management Plan and a Voluntary Integrated Management Plan. These two planning efforts are being done concurrently. While we will have two plans in the end, we feel the joint planning process will be more efficient. This is the first time, in the state, such joint planning effort has been attempted.

Visit our Website

You can learn all about the District's programs and activities at www.upperbigblue.org.

Attachment F

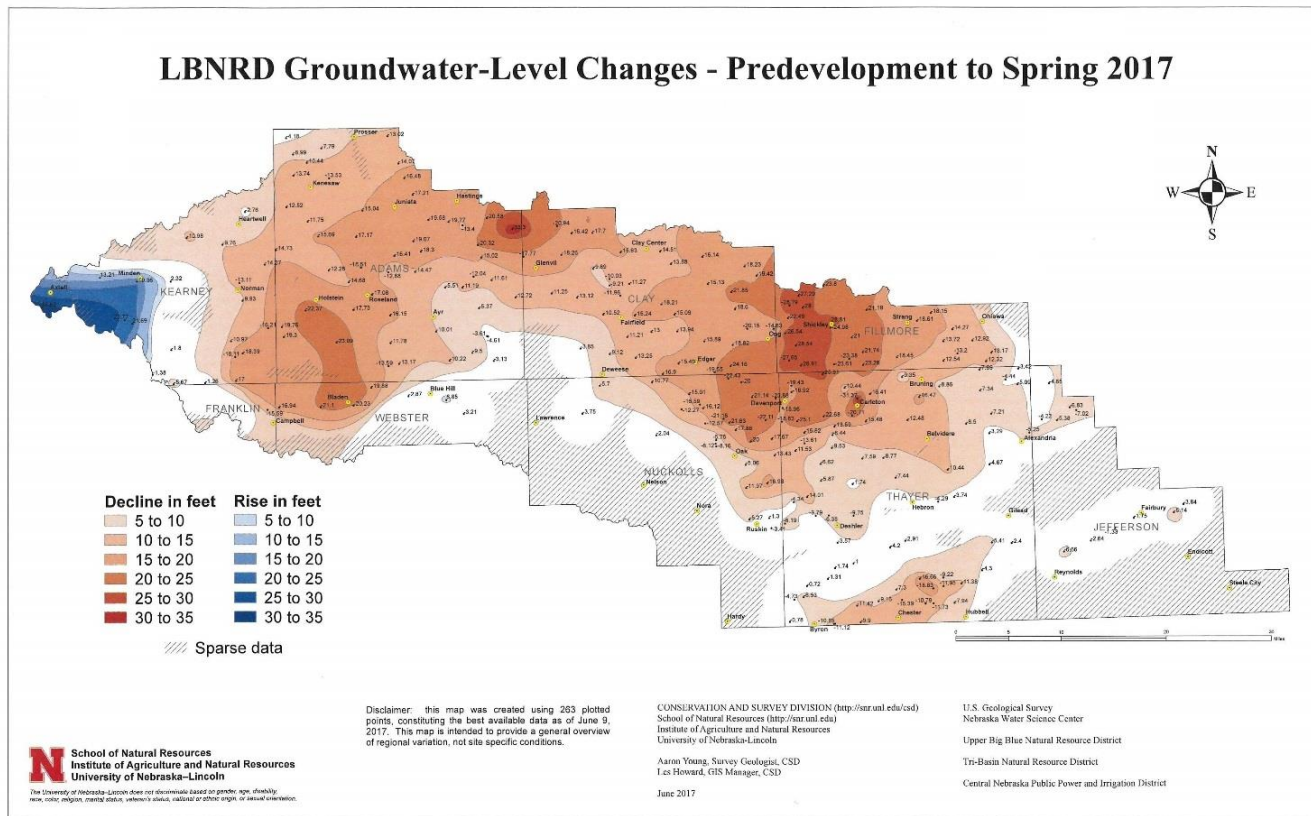
KANSAS-NEBRASKA BIG BLUE RIVER COMPACT

Nebraska Report - Little Blue NRD

Mike Onnen, Manager
May 24, 2018

LBNRD Groundwater Management Plan Approved by DNR

The Little Blue NRD did a complete re-write of our Groundwater Management Plan in 2017 and the plan was approved by the Department of Natural Resources last fall. Key components of the plan were the updating of all relevant water data collected by the District, inclusion of current resources conditions, inclusion of new hydrogeologic maps and the establishment of new groundwater quantity triggers before groundwater allocation would be imposed. The new trigger established is one (1) foot below the 2016 average groundwater level, which is a significant change from the individual quantity subarea triggers which previously allowed from 4' to 15' of additional declines in an area based on 10% of the aquifer thickness depletions. The map below shows the general declines through 2017. As a result of gradual continuing declines, the Board also began the process of amending our rules to be more proactive in addressing water management.



New Groundwater Rules to be Heard May 29th

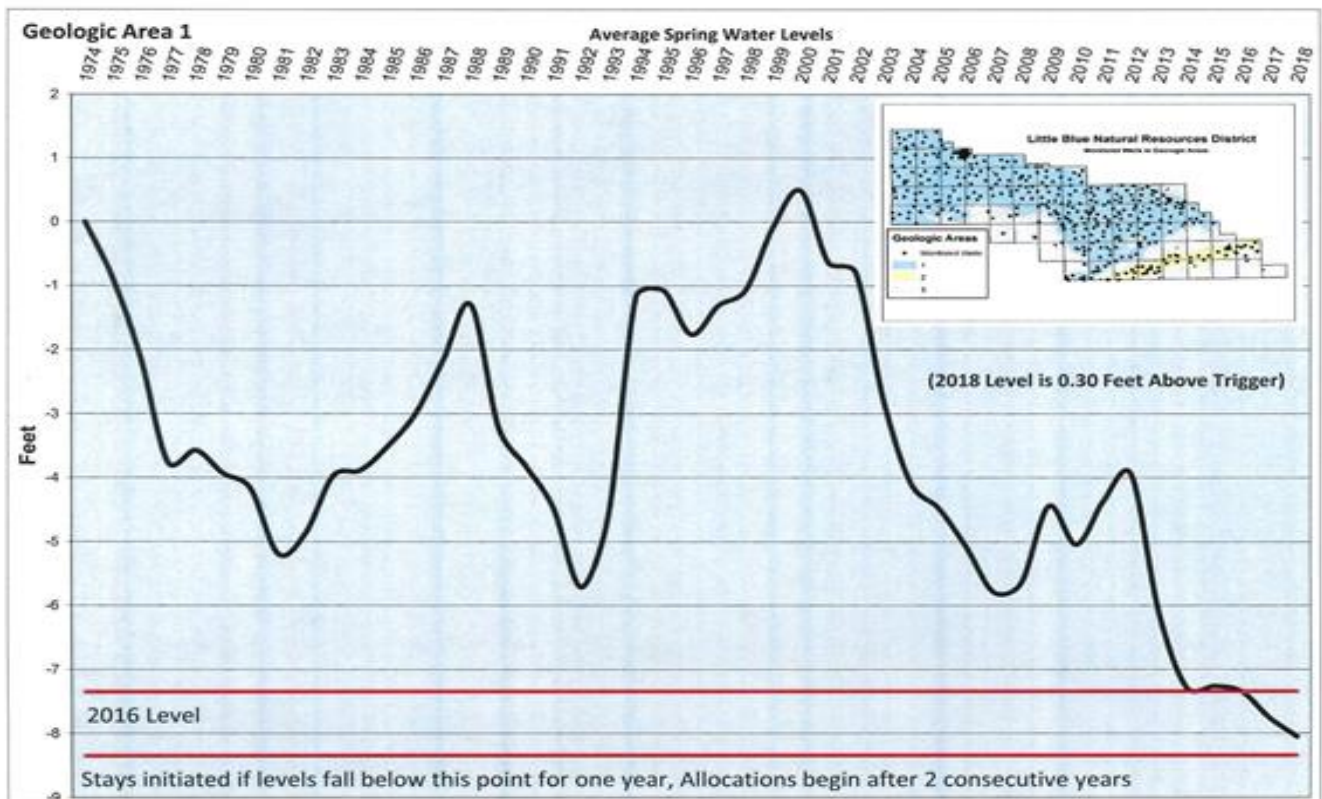
The Little Blue NRD Board has been working on new rules for enforcement of our Groundwater Management Area for the past 18 months. The draft rules are now completed and will be heard on May 29th. Previous rules required the installation of flow meters and certification of irrigated acres by all producers. Meters are now in place and certification is still underway. There are several key changes in the rules which address evolving groundwater concerns.

Here are the proposed rule highlights:

- New groundwater quantity and quality triggers made a part of the rules
- If trigger is met, a stay would occur on new high-capacity irrigation well development
- Water levels would have to be below the trigger point for two consecutive readings
- The entire high-plains aquifer would be treated as a single unit and allocation applied equally
- Allocations set at 65” for first 5-year allocation period
- Carryover of unused water would be limited to eight inches (8”)
- No pooling would be allowed however, a sharing of the allocation would be allowed for acres and/or systems that are connected or watered by the same irrigation system
- Allocations would be suspended if the water level raises three feet (3’) above the trigger point
- For water quality – no fall fertilizer would be permitted on “sandy soils”
- The requirement for soil sampling depth was changed to 24” rather than 36”
- Rules for management of nitrogen management sub-areas were made more uniform to avoid confusion by operators and crop consultants.
- We’ve also rewritten our irrigation runoff rules and regulations which will also be heard at the May 29th hearing.

Groundwater Levels


Spring 2018 groundwater levels declined -0.32’ from the 2017 levels. The levels generally rose in the western part of the District, but dropped in the east where severe drought conditions persisted. This was a complete reversal from the weather conditions experienced in the previous year. The numbers reflect that 244 out of 334, or 73% of all wells water level readings were obtain from, are at or below their lowest level of record.




Water Use Reporting

The District continues to gather irrigation water use information from producers. We’ve compiled a summary of water use over the last 19 years, as shown in the chart below, and comparing the first 9 years with the last 10 years, we see reductions in average water use for each category. Improvements in technology and irrigation systems are having a huge impact. We are moving in the right direction.

Cropping	Acres	Water Applied		
		Year	Reported	Pivot
1999	115,115	10.1	15.7	11.4
2000	100,354	11.1	17.0	13.6
2001	107,465	8.2	13.9	10.6
2002	107,143	13.6	19.9	16.5
2003	109,681	10.3	16.9	12.8
2004	112,003	7.6	13.1	10.4
2005	119,498	8.5	13.5	10.7
2006	122,005	7.8	13.0	10.0
2007	112,916	6.8	10.6	7.9
Average	111,798	9.3	14.8	11.5
2008	109,024	4.4	7.3	5.2
2009	115,285	7.5	13.5	8.8
2010	113,944	5.4	9.1	6.2
2011	114,542	4.9	8.2	5.9
2012	113,171	11.9	16.8	12.1
2013	117,404	9.0	15.5	9.8
2014	178,051	5.6	8.8	6.1
2015	353,992	6.5	11.9	7.3
2016	554,064	8.0	15.5	8.5
2017	637,418	7.2	11.5	7.5
Average	240,689.5	7.0	11.8	7.7
Ave of All	179,635.5	8.13	13.25	9.54



1 st 9 years



2nd 10 years

Integrated Water Management Planning

The Little Blue NRD stakeholders completed their work on developing goals and objectives for our District’s Voluntary Integrated Management Plan. Those key goals include:

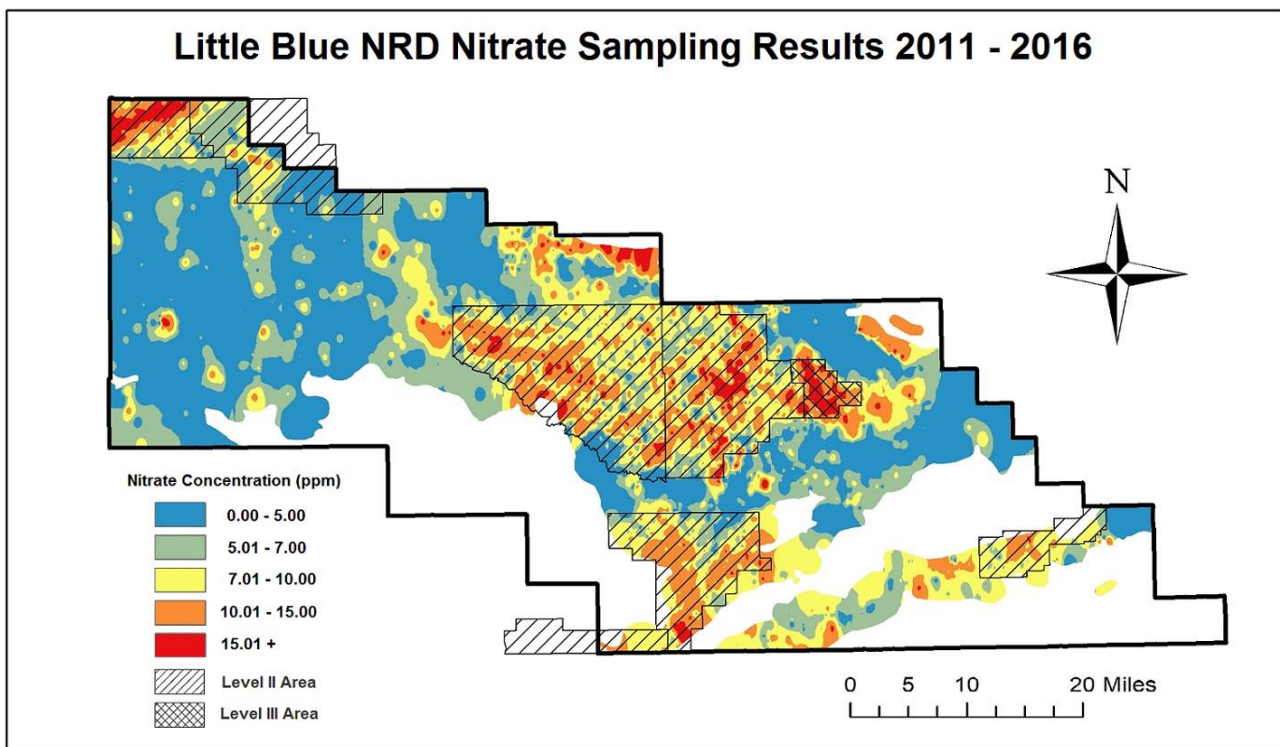
- Securing better and more scientific data and methods to support wise management of interconnected ground and surface water;
- Scientifically sound, locally based management actions to protect interconnected ground and surface water;
- Education efforts to raise the level of awareness about finite, interconnected ground and surface water resources.

We are now in the writing stage of the plan and are hopeful to have everything completed and rules in place by the end of the year. Our District is also trying to coordinate activities and actions with the Tri-Basin NRD in the upper portion of the Basin to assure that our goals can be met and the resources protected.

In a related matter, DNR has asked the Little Blue NRD to place a stay on new developments in the extreme northwest corner of Adams County which actually lies in the Platte River Basin Drainage. The reason is that new modeling efforts have shown more stream depletions are occurring to the Platte River as a result of water uses in that area of our District than previously anticipated. The District has imposed a stay on approximately 18,000 acres and will develop rules in conjunction with our IMP to manage new uses in that area, or provide offsets for those depletions.

Water Quality Continues to be a Concern

The District has collected water samples from domestic and irrigation wells for over 25 years. Nitrate levels continue to rise throughout the District and several areas are at or above the drinking water standard. Also, a growing number of cities are pushing the drinking water MCLs or are now under Administrative Order from DHHS to resolve their nitrate problems for residents. We currently have

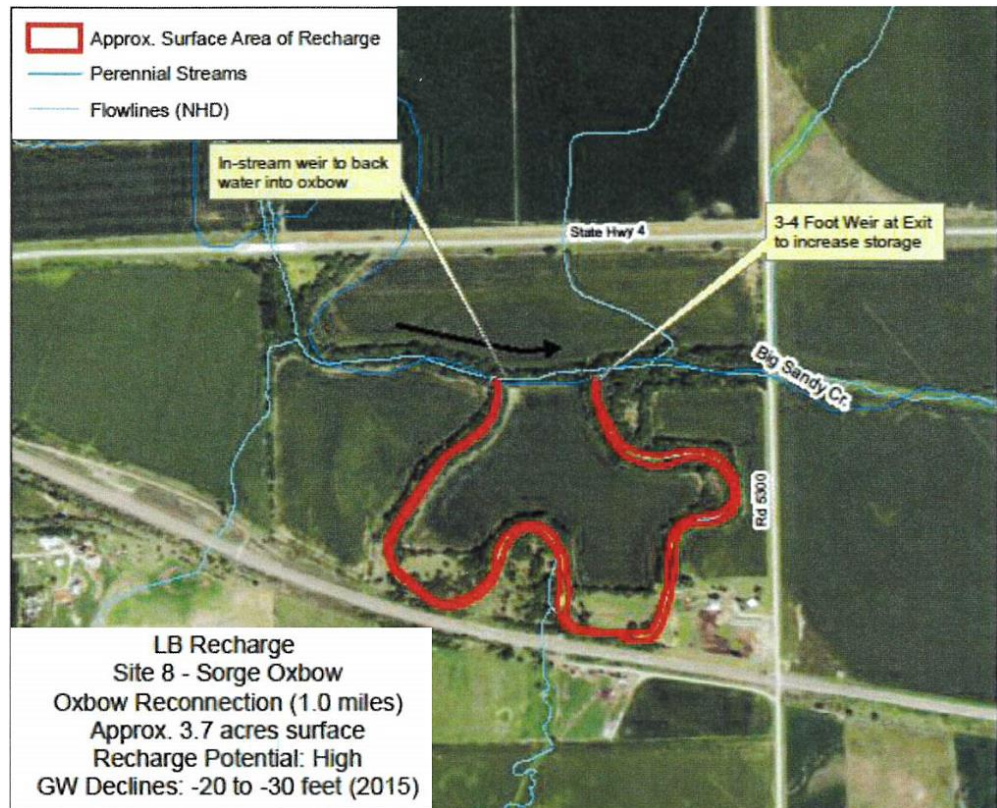


over 400,000 acres that are in “water quality sub-areas” which mandate various nitrate management practices. Those areas are shown as cross-hatched areas on the map below. Officials from both private labs and the University of Nebraska have told us that the only way this ongoing groundwater contamination trend will be reversed is if producers engage in split fertilizer applications as close as possible to the time that the plant can utilize the nutrients. Even then, it will be a long-term problem and reversal will be difficult. On a somewhat related matter, the Little Blue NRD’s new Assistant Manager is an expert on soil health and is trying to develop a new mentality about the utilization of available nutrients and applying what the plants can actually use, rather than simply taking the generic recommendations of a soil test. He is working on some demonstration fields to prove that these measures do reduce inputs and create healthier and productive crops.

Projects Activities

On the projects side, the Little Blue NRD has now received two separate grants from the Nebraska Water Sustainability Fund. The first was for low-level grade stabilization projects in a very sandy area of the District where groundwater recharge is anticipated to be very high. Five structures are designed and bids were let in May, but the bids were higher than anticipated so the board rejected the bids and have called for re-advertisement. We hope to complete these projects this winter.

The second group of projects are for relic oxbow re-connections to streams. Four sites are being designed at this time with plans to also advertise the projects for winter construction. The Nebraska Environmental Trust will also contribute to these projects. In all, the two approved recharge projects are anticipated to cost about \$960,000 with benefits exceeding \$2.2 million over the 50-year life of the projects.

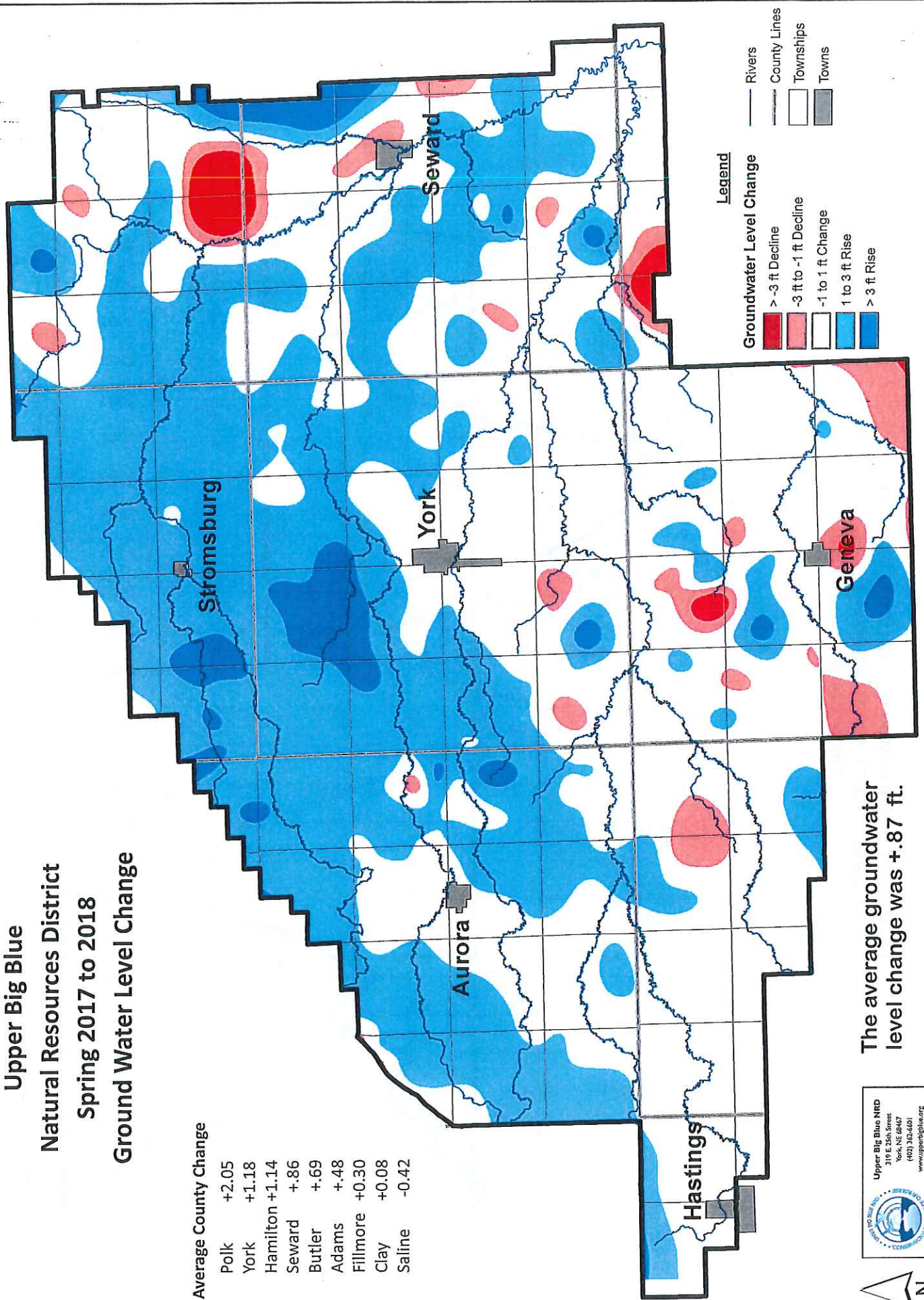


On our rural water project, we continue to work with the City of Fairbury in efforts to secure an additional allotment of water to supply a growing number of requests for services. You may recall that our project has bumped up against our peak service demand in the past and our engineer has advised against making additional connections until additional water can be secured. Currently, we have 19 people on the list that have requested a new service connection, two of which are in Kansas. We are seeking up to 100 gallons per minute of additional supply, 50 gpm is probably more realistic. Fairbury tried to drill an additional well on land they owned east of the City but the test well did not produce enough to justify developing the well. They are preparing to reconstruct their main supply line under the Little Blue River from Crystal Springs which should improve their capacity, however, we have no guarantee that the City will agree to provide more water.

Upper Big Blue
Natural Resources District
Spring 2017 to 2018
Ground Water Level Change

Average County Change

Polk	+2.05
York	+1.18
Hamilton	+1.14
Seward	+0.86
Butler	+0.69
Adams	+0.48
Fillmore	+0.30
Clay	+0.08
Saline	-0.42



Legend

Groundwater Level Change

- > -3 ft Decline
- -3 ft to -1 ft Decline
- -1 to 1 ft Change
- 1 to 3 ft Rise
- > 3 ft Rise

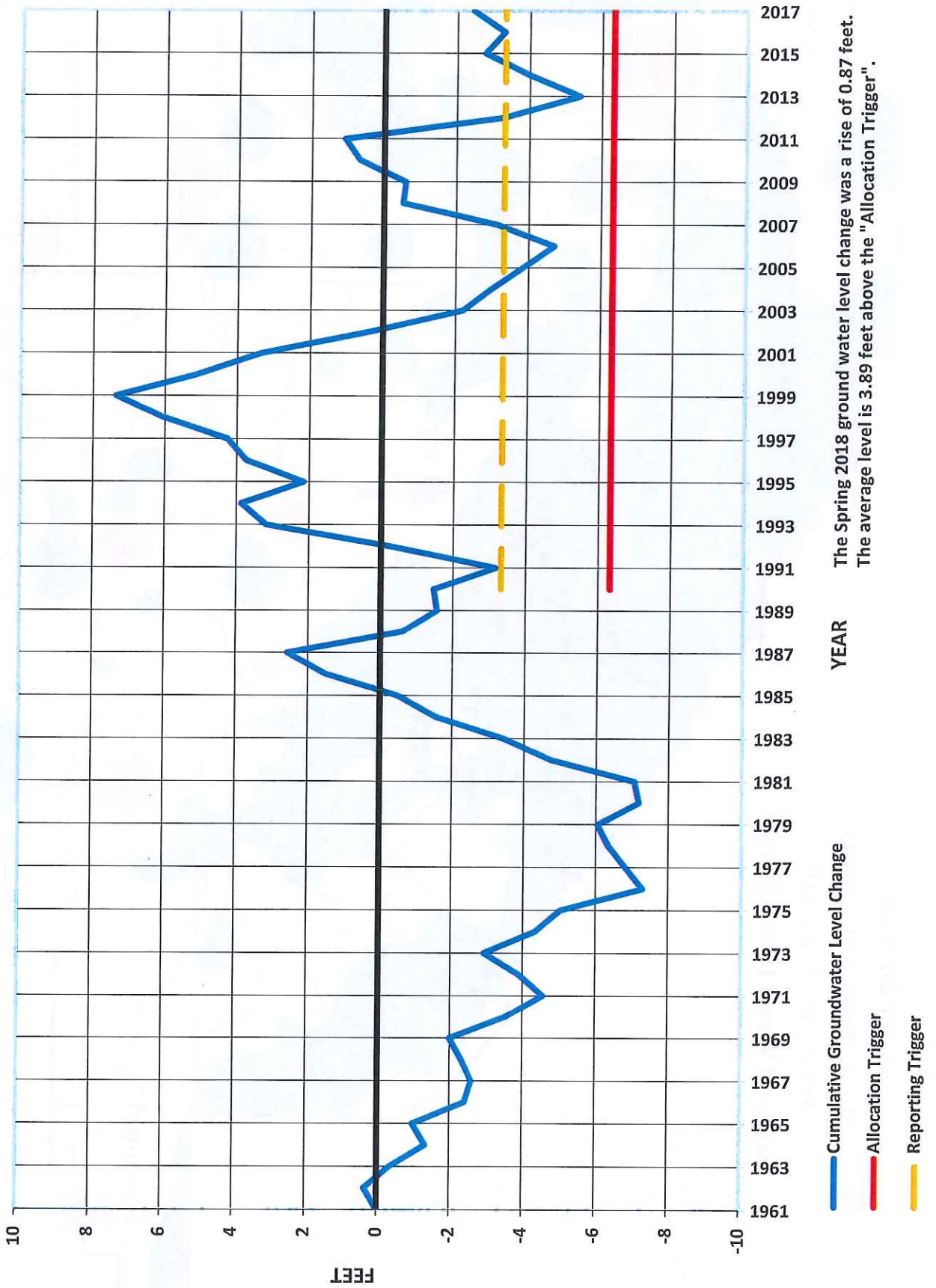
Rivers
 County Lines
 Townships
 Towns

The average groundwater level change was +.87 ft.

Upper Big Blue NRD
310 E. 25th Street
York, NE 68467
(402) 332-0401
www.upperbigblue.org



UPPER BIG BLUE NRD - AVERAGE GROUND WATER LEVELS
TRIGGERS COMPARED TO HISTORIC LEVELS
SPRING 2018



Attachment G

REPORT OF THE TREASURER TO THE
KANSAS-NEBRASKA BLUE RIVER COMPACT ADMINISTRATION

Budget Report
May 24, 2018

1. Report of the Treasurer (Attachment A—Current year)
 - a. Our beginning balance for FY18 was \$23,975. Since this time, we have had expenditures of \$11,933 for USGS Stateline gages and \$680 for the Lower Big Blue NRD observation wells. Our balance as of today is \$30,404.
 - b. We are expecting a couple more expenditures prior to the close of FY2018. These include \$3,978 for fourth quarter USGS Stateline gages and \$1800 for the Biennial Audit Review. We also carry through \$100 each for printing and postage. The only income we expect to have is roughly \$12 from interest.
 - c. Our expected ending year balance is \$24,438.

2. 2018 Budget Analysis (Attachment B—FY2016 to 2020)
 - a. The first two numeric columns show the actual expenditures and income for FY2016 and FY2017. You will note that we closed FY2016 with a balance of \$21,406 balance and FY2017 with a balance of \$23,975.
 - b. This Fiscal Year's (2018) entries are separated into two columns to show actual expenditures and income that has occurred up to today, and the expected expenditures and income for the remainder of the FY2018 (see overview in Attachment A).
 - c. The next column is highlighted in yellow, and is the proposed budget for FY2019. This proposed budget includes \$19,100 for expenditures (consistent with previous years' budgets), and \$43,473 for income that comes from State assessments, interest and carry-over. With this proposed budget, we would expect to close-out the year with a balance of \$24,373.
 - d. The last column shows our projected budget for FY2020. Here we have incorporated an estimated 3% increase for USGS Stateline stream gages, and have included \$1800 for the biennial audit review. We would expect to close out FY2020 with a balance of approximately \$22,000.

Attachment A

**REPORT OF THE TREASURER
TO THE
KANSAS-NEBRASKA BIG BLUE RIVER COMPACT ADMINISTRATION
May 24, 2018**

BEGINNING BALANCE: July 1, 2017		\$ 23,975.19
INCOME: as of May 24, 2018		
State Assessments	\$ 19,000.00	
Interest Income	\$ 41.54	
TOTAL INCOME	<u>19,041.54</u>	\$ 19,041.54
EXPENSES: as of May 24, 2018		
USGS - Stateline Gages	\$ 11,933.00	
Printing Annual Report	\$ -	
Lower Big Blue Natural Resources District - Observation Wells	\$ 680.00	
Biennial Audit Review	\$ -	
TOTAL EXPENSES	<u>12,613.00</u>	\$ 12,613.00
BALANCE ON HAND:		\$ 30,403.73
ESTIMATED EXPENDITURES THROUGH JUNE 30, 2018		
USGS - Stateline Gages	\$ 3,978.00	
Biennial Audit Review	\$ 1,800.00	
Lower Big Blue Natural Resources District - Observation Wells	\$ -	
Printing Annual Report	\$ -	
Postage and Office Supplies	\$ 100.00	
Miscellaneous	\$ 100.00	
TOTAL ESTIMATED ADDITIONAL EXPENDITURES	<u>5,978.00</u>	\$ 5,978.00
ESTIMATED INCOME THOUGH JUNE 30, 2018		
Interest Income		\$ 12.00
ESTIMATED BALANCE AS OF JUNE 30, 2018		<u>\$ 24,437.73</u>

ATTACHMENT B: Big Blue River Compact Budget Overview, May 24, 2018

	FY 2015 - 2016	FY 2016 - 2017	FY 2017 - 2018		FY 2018-2019	FY 2019-2020
	Actual 7/1/15-6/30/16	Actual 7/1/16-6/30/17	Actual 7/1/17-5/24/18	Estimated 5/25/18-6/30/18	Proposed	Projected
EXPENDITURES						
Operations						
USGS - Stateline Gages	\$ 15,506.00	\$ 15,790.00	\$ 11,933.00	\$ 3,978.00	\$ 18,000.00	\$ 18,500.00
LBNRD - Observation Wells	\$ 680.00	\$ 680.00	\$ 680.00	\$ -	\$ 700.00	\$ 700.00
Water Quality Committee	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Annual report - Printing	\$ -	\$ -	\$ -	\$ -	\$ 200.00	\$ 200.00
Biennial Audit Review	\$ 1,717.00	\$ -	\$ -	\$ 1,800.00	\$ -	\$ 1,800.00
Postage and Office Supplies	\$ -	\$ -	\$ -	\$ 100.00	\$ 100.00	\$ 100.00
Miscellaneous Expenses	\$ -	\$ -	\$ -	\$ 100.00	\$ 100.00	\$ 100.00
Total Expenses	\$ 17,903.00	\$ 16,470.00	\$ 12,613.00	\$ 5,978.00	\$ 19,100.00	\$ 21,400.00
INCOME & CARRY OVER						
Assessments (Both States)	\$ 19,000.00	\$ 19,000.00	\$ 19,000.00	\$ -	\$ 19,000.00	\$ 19,000.00
Interest earned	\$ 23.74	\$ 38.96	\$ 41.54	\$ 12.00	\$ 35.00	\$ 35.00
Carry Over from Prior Year	\$ 20,285.49	\$ 21,406.23	\$ 23,975.19	\$ -	\$ 24,437.73	\$ 24,372.73
Total Income and Carry Over	\$ 39,309.23	\$ 40,445.19	\$ 43,016.73	\$ 12.00	\$ 43,472.73	\$ 43,407.73
Ending Balance	\$ 21,406.23	\$ 23,975.19	\$ 30,403.73	\$ 24,437.73	\$ 24,372.73	\$ 22,007.73

Attachment H

KANSAS-NEBRASKA BIG BLUE RIVER COMPACT REPORT
U.S. Geological Survey—Water Year 2017

The U.S. Geological Survey (USGS) continues to operate two streamflow gaging stations for the Compact Administration—Big Blue River at Barneston, NE (06882000), and Little Blue River at Hollenberg, KS (06884025). An electronic data logger (EDL) at each station automatically records streamflow stage every 15 minutes. Every hour, these instantaneous values are transmitted via satellite to USGS offices, where they are used to compute preliminary values of instantaneous and daily discharge that are immediately posted to the USGS National Water Information System (NWIS) website (addresses shown below). Before the data are finalized, updates and revisions are made as needed, based on a series of quality checks and reviews. Finalized values of daily discharge and daily gage height, along with associated summary statistics are published annually on a site-by-site basis on the NWIS web page (address shown below).

During water year (WY) 2017 (October 1, 2016 to September 30, 2017), periodic visits were made to the stations to maintain and calibrate the sensing and recording equipment, make discharge measurements, and download the data directly from the EDLs, as a backup to the satellite-telemetered data. The discharge measurements were used to determine shifts from the stage-discharge relations (rating curves) that were then used to convert stage values to corresponding values of discharge.

For each of the State delegations and the Compact chairman, copies of the WY 2017 published data (manuscript; discharge daily values; statistics tables; and discharge hydrograph) from the NWIS web page are attached for each station. These water-year summaries (PDF files) are available online within the NWIS site page for each of the streamgages, along with data for other streamgages for the Nation. Also attached are plots of the annual mean discharges for the periods of record, and plots of the daily discharges for WY 2017 compared to those for the median daily statistic for each day of the year.

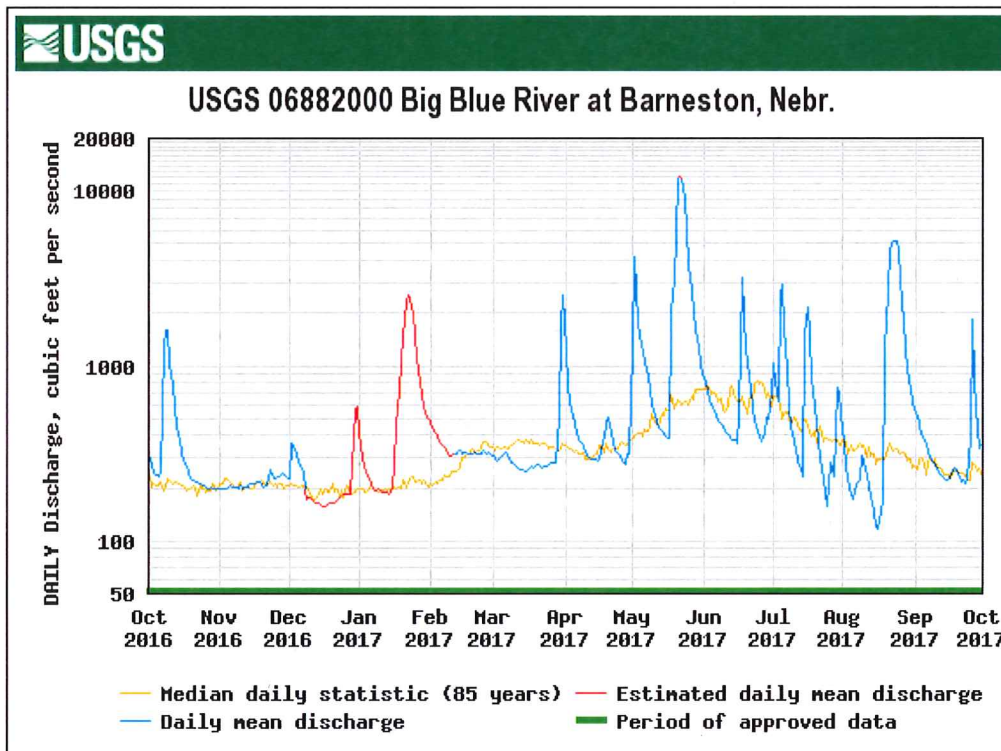
Current (real-time) and historical data on surface water, groundwater, and water quality for the Nation can be accessed and downloaded via the Water Resources of the United States website (<https://www2.usgs.gov/water/>) or from the Nebraska Water Science Center website (<https://www.usgs.gov/centers/ne-water>). All unit values of discharge data and all daily values of discharge can be accessed using the NWIS web, as well as all unit values and daily values of gage height since October 2007.

Jason Lambrecht
Assistant Director, Hydrologic Data Section Chief

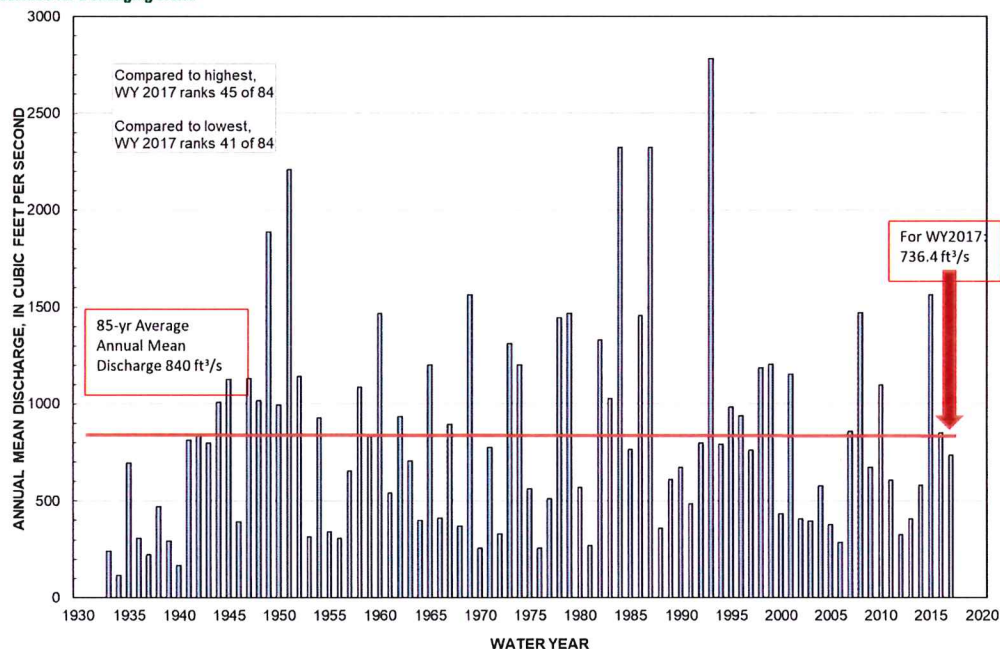
U.S. Geological Survey, Nebraska Water Science Center
5231 S. 19th St., Lincoln, NE 68512-1271
(jmlambre@usgs.gov)
402-328-4124 (office), 402-416-2363 (mobile)

May 9, 2018

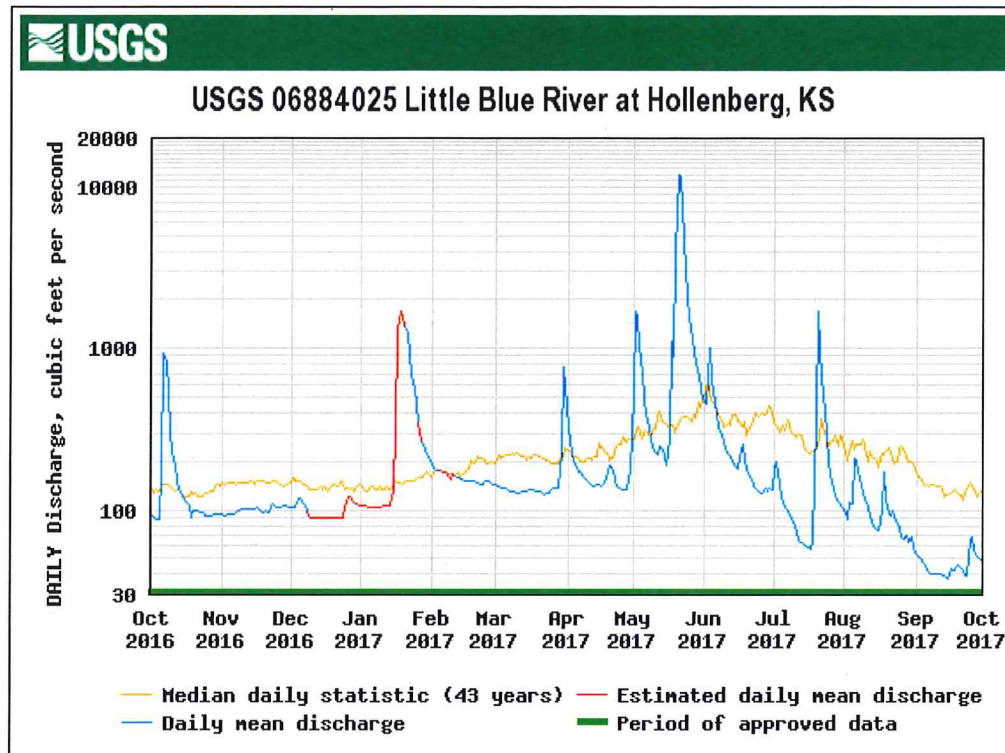
For station **06882000 Big Blue River at Barneston**, twelve discharge (and stage) measurements, ranging from 220 ft³/s (3.76 ft stage) to 11,300 ft³/s (16.42 ft stage), and nine inspections were made during WY 2017. The annual mean discharge of 736 ft³/s was 1.2 times less than that of the WY 2016 mean of 850 ft³/s; and 1.1 times lower than the new historical mean of 840 ft³/s for WYs 1933–2017 (85 years of record). The maximum and minimum daily discharges were 12,000 ft³/s on May 21, 2017; and 118 ft³/s on August 16, 2017.



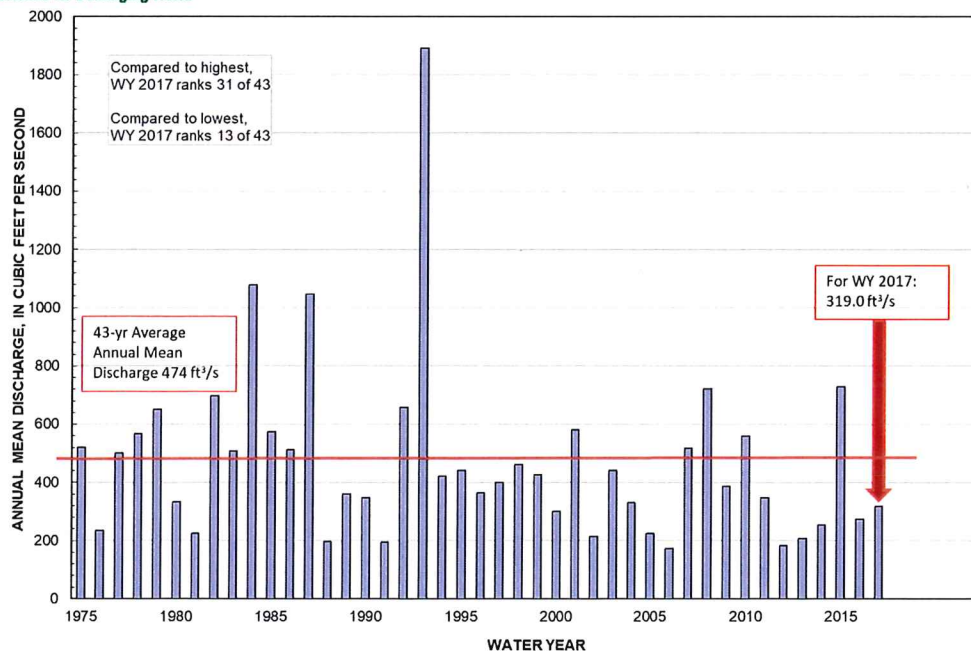
06882000 Big Blue River at Barneston, NE



For station **06884025 Little Blue River at Hollenberg**, seventeen discharge (and stage) measurements, ranging from 37.1 ft³/s (1.66 ft stage) to 8,130 ft³/s (9.92 ft stage), and three inspections were made during WY 2017. The annual mean discharge of 319 ft³/s was 1.2 times greater than that of the WY 2016 mean of 273 ft³/s; and 1.5 times less than the new historical mean of 474 ft³/s for WYs 1975–2017 (43 years of record). The maximum and minimum daily discharges were 12,000 ft³/s on May 20, 2017; and 37.7 ft³/s on September 15, 2017.



06884025 Little Blue River at Hollenberg, KS





USGS Water-Year Summary 2017

06882000 Big Blue River at Barneston, Nebr.

LOCATION - Lat 40°02'41", long 96°35'14" referenced to North American Datum of 1983, in NE 1/4 NW 1/4 sec.24, T.1 N., R.7 E., Gage County, NE, Hydrologic Unit 10270202, on right bank just downstream of bridge on State Highway 8, 0.6 mi southwest of Barneston, 1.3 mi upstream from Plum Creek, and 4.3 mi upstream from Nebraska-Kansas State line.

DRAINAGE AREA - 4,447 mi² of which 77 mi² probably is noncontributing.

SURFACE-WATER RECORDS

PERIOD OF RECORD - May 1932 to current year.

REVISED RECORDS - WSP 896: 1932, 1935. WSP 1919: Drainage area.

GAGE - Water-stage recorder with satellite telemetry. Datum of gage is 1,162.20 ft above sea level. Prior to June 9, 1941, water-stage recorder at site 0.3 mi downstream at datum 1.56 ft higher. June 9 to Nov. 17, 1941, non-recording gage, and Nov. 18, 1941 to Sept. 30, 1979, water-stage recorder at site 0.7 mi upstream at datum 2.0 ft higher.

REMARKS - Accuracy of records for water years prior to 2014 are noted in the individual Annual Data Reports for those water years. For water years 2014 onward, records fair to good except for estimated daily discharges, which are poor, unless otherwise noted.

EXTREMES FOR PERIOD OF RECORD - Maximum peak flow, 57,700 ft³/s, June 9, 1941, gage height, 34.30 ft, at site datum then in use.

U.S. Department of the Interior
U.S. Geological Survey

Suggested citation: U.S. Geological Survey. 2018. National Water Information System data available on the World Wide Web (USGS Water Data for the Nation), accessed [May 9, 2018].
https://nwis.waterdata.usgs.gov/nwis/wys_rpt?dv_ts_ids=93783&adr_begin_date=2016-10-01&adr_end_date=2017-09-30&site_no=06882000&agency_cd=USGS

https://waterdata.usgs.gov/nwis/wys_rpt?dv_ts_ids=93783&wys_water_yr=2017&site_no=... 5/9/2018

Water-Data Report 2017
06882000 Big Blue River at Barneston, Nebr. -- Continued

DISCHARGE, CUBIC FEET PER SECOND
YEAR 2016-10-01 to 2017-09-30
DAILY MEAN VALUES

[e, Value has been estimated.]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
	2016	2016	2016	2017	2017	2017	2017	2017	2017	2017	2017	2017
1	298	199	228	e413	e472	295	1,210	4,240	802	1,040	360	561
2	265	198	359	e302	e439	285	786	2,690	717	809	264	519
3	246	196	345	e268	e410	294	615	1,720	643	621	227	451
4	238	198	314	e244	e391	309	551	1,330	592	2,600	181	405
5	235	207	282	e227	e371	316	468	1,190	557	2,940	172	378
6	249	202	265	e212	e353	321	414	1,070	522	1,650	190	354
7	1,280	201	248	e198	e344	292	375	858	490	963	213	319
8	1,620	201	e194	e195	e331	278	357	716	463	578	222	298
9	1,610	199	e171	e198	e309	277	346	593	443	440	303	281
10	1,010	205	e175	e194	e307	269	323	517	422	367	281	266
11	769	200	e172	e189	e315	260	297	470	405	329	230	253
12	590	201	e167	e189	317	257	291	441	385	288	208	239
13	443	204	e165	e189	330	254	292	425	373	254	176	230
14	365	214	e164	e186	325	249	290	404	376	233	147	226
15	320	213	e161	e196	317	250	289	395	358	1,480	119	223
16	288	213	e158	e275	320	259	291	384	535	2,160	118	228
17	267	217	e157	e450	317	264	327	1,990	3,180	1,510	146	241
18	245	216	e160	e714	313	258	390	2,580	1,920	843	169	259
19	229	207	e163	e1,030	311	264	458	2,990	1,220	592	1,250	254
20	224	204	e163	e1,490	320	271	503	11,500	1,070	461	2,670	239
21	217	207	e163	e2,300	311	267	415	e12,000	719	377	4,630	219
22	218	226	e167	e2,520	313	260	365	e11,700	570	293	4,960	220
23	213	252	e178	e2,420	310	265	330	9,280	484	224	5,190	214
24	206	228	e182	e1,960	325	269	310	5,870	427	184	5,130	223
25	205	228	e186	e1,500	317	274	302	3,790	384	157	4,610	392
26	204	231	e186	e1,120	318	279	286	2,690	364	279	3,130	1,820
27	200	231	e184	e810	312	277	272	2,000	409	254	1,750	810
28	201	241	e185	e663	308	277	313	1,600	509	234	1,260	429
29	200	240	e274	e580		506	316	1,270	494	743	935	337
30	196	231	e558	e530		1,690	1,270	1,040	707	704	713	348
31	198		e588	e492		2,510		883		531	627	
Total	13,050	6,410	7,062	22,250	9,426	12,400	13,050	88,630	20,540	24,140	40,580	11,240
Mean	421	214	228	718	337	400	435	2,859	685	779	1,308	375
Max	1620	252	588	2520	472	2510	1270	12000	3180	2940	5190	1820
Min	196	196	157	186	307	249	272	384	358	157	118	214
Ac-ft	25,879	12,709	14,010	44,140	18,700	24,590	25,890	175,800	40,740	47,880	80,490	22,290

https://waterdata.usgs.gov/nwis/wys_rpt?dv_ts_ids=93783&wys_water_yr=2017&site_no=... 5/9/2018

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1933 - 2017, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	546	307	253	294	595	1,223	817	1,391	2,069	1,230	676	670
Max	7,451	1,526	1,579	1,596	2,876	10,560	5,280	5,207	10,460	12,270	5,227	3,420
(WY)	(1974)	(1999)	(2016)	(1973)	(1984)	(1979)	(1984)	(1995)	(1951)	(1993)	(1954)	(1989)
Min	61.5	77.5	87.4	67.6	116	137	132	96.0	69.3	30.7	21.1	50.6
(WY)	(1941)	(1937)	(1977)	(1937)	(1940)	(1968)	(1934)	(1934)	(1934)	(1934)	(1934)	(1939)

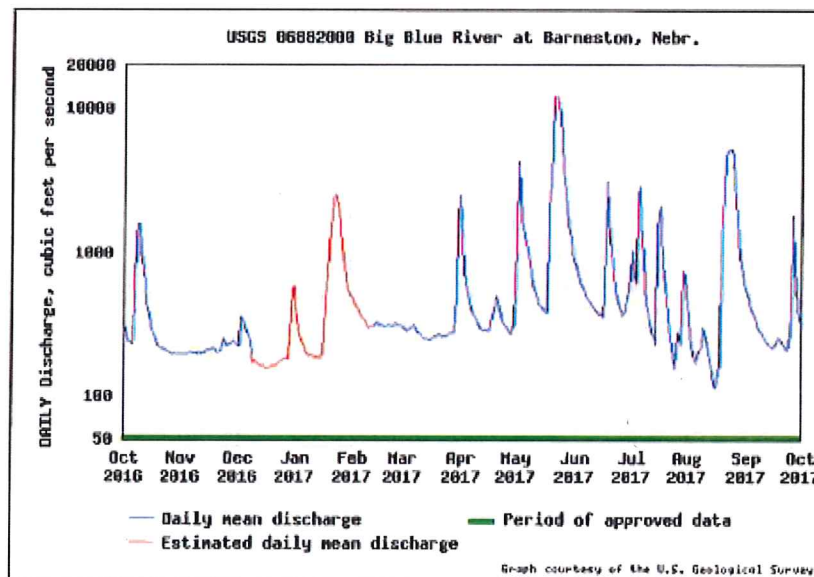
https://waterdata.usgs.gov/nwis/wys_rpt?dv_ts_ids=93783&wys_water_yr=2017&site_no=... 5/9/2018

Water-Data Report 2017
 06882000 Big Blue River at Barneston, Nebr. -- Continued

SUMMARY STATISTICS

	Water Year 2017		Water Years 1933 - 2017	
Annual total	268,800			
Annual mean	736.4		839.7	
Highest annual mean			2,781	1993
Lowest annual mean			115.0	1934
Highest daily mean	12,000	May 21	50,000	Jun 09, 1941
Lowest daily mean	118.0	Aug 16	1.00	Nov 30, 1945
Annual 7-day minimum	154.7	Aug 12	15.1	Aug 03, 1934
Maximum peak flow			57,700	Jun 09, 1941
Maximum peak stage			34.30 ^a	Jun 09, 1941
Annual runoff (cfsm)	0.166		0.189	
Annual runoff (inches)	2.25		2.56	
10 percent exceeds	1,614		1,700	
50 percent exceeds	313.0		280.0	
90 percent exceeds	194.0		108.0	

^a Gage height at different site and(or) datum



https://waterdata.usgs.gov/nwis/wys_rpt?dv_ts_ids=93783&wys_water_yr=2017&site_no=... 5/9/2018



USGS Water-Year Summary 2017

06884025 Little Blue River at Hollenberg, KS

LOCATION - Lat 39°58'49", long 97°00'17" referenced to North American Datum of 1983, in NE 1/4 SW 1/4 sec.8, T.1 S., R.4 E., Washington County, KS, Hydrologic Unit 10270207, on right bank just downstream from bridge on county road, 0.6 mi west of Hollenberg, 1.8 mi downstream from Nebraska-Kansas State line, and at mile 43.1.

DRAINAGE AREA - 2,752 mi².

SURFACE-WATER RECORDS

PERIOD OF RECORD - March 1973 to February 1974 (discharge measurements only), March 1974 to current year.

GAGE - Water-stage recorder with satellite telemetry. Datum of gage is 1,216.10 ft above sea level.

REMARKS - Accuracy of records for water years prior to 2014 are noted in the individual Annual Data Reports for those water years. For water years 2014 onward, records good except for estimated daily discharges, which are poor, unless otherwise noted. Discharge measurements made prior to 1974 water year are published in table of miscellaneous sites in WDR NE-73.

EXTREMES OUTSIDE PERIOD OF RECORD - A gage height of 23.07 ft, present datum, from floodmark, discharge not determined, occurred October 12, 1973.

U.S. Department of the Interior
U.S. Geological Survey

Suggested citation: U.S. Geological Survey. 2018. National Water Information System data available on the World Wide Web (USGS Water Data for the Nation), accessed [May 9, 2018].
https://nwis.waterdata.usgs.gov/nwis/wys_rpt?dv_ts_ids=93795&advr_begin_date=2016-10-01&advr_end_date=2017-09-30&site_no=06884025&agency_cd=USGS

https://waterdata.usgs.gov/nwis/wys_rpt?dv_ts_ids=93795&wys_water_yr=2017&site_no=... 5/9/2018

Water Data Report 2017
 06884025 Little Blue River at Hollenberg, KS -- Continued

DISCHARGE, CUBIC FEET PER SECOND
YEAR 2016-10-01 to 2017-09-30
DAILY MEAN VALUES
 [e, Value has been estimated.]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
	2016	2016	2016	2017	2017	2017	2017	2017	2017	2017	2017	2017
1	91.2	93.2	104	e107	190	141	330	1,710	457	184	96.4	53.8
2	88.7	92.4	104	e106	180	139	264	1,530	651	200	87.0	52.3
3	87.1	93.3	105	e106	174	137	228	1,040	1,010	143	112	50.5
4	87.9	93.1	118	e105	e175	137	201	704	635	121	109	47.9
5	170	94.5	119	e105	e175	136	185	489	465	109	207	45.3
6	925	94.0	113	e105	e173	135	173	386	378	103	200	42.6
7	822	96.3	108	e104	e170	131	171	321	325	99.5	171	40.9
8	526	98.9	e96.6	e103	e165	129	159	278	292	91.1	145	40.8
9	308	101	e91.1	e103	e156	129	156	246	264	89.2	128	40.8
10	224	102	e90.7	e104	e166	128	150	226	237	79.8	116	40.4
11	183	101	e90.7	e106	163	128	145	220	219	72.1	103	40.6
12	151	101	e90.6	e107	159	131	142	250	209	64.3	92.8	40.7
13	133	101	e90.6	e107	155	131	142	235	199	62.7	83.8	39.5
14	121	101	e90.6	e107	155	130	144	212	187	61.1	77.2	39.1
15	115	102	e90.6	e133	152	132	143	191	180	60.1	75.4	37.7
16	111	103	e90.1	e321	152	133	140	276	210	59.3	75.7	39.6
17	108	101	e89.5	e1,340	152	132	145	1,100	258	56.6	98.7	43.5
18	89.1	97.5	e89.3	e1,700	150	130	157	887	206	65.6	172	42.2
19	98.5	97.3	e89.5	e1,550	150	130	171	4,010	178	367	115	44.8
20	98.9	98.3	e89.6	e1,400	149	129	188	12,000	166	1,700	94.2	45.9
21	98.4	97.1	e89.6	1,220	148	127	174	11,700	154	1,010	92.7	43.3
22	96.5	105	e89.5	907	145	125	152	7,340	147	654	99.8	40.9
23	95.7	110	e89.6	686	143	126	142	3,080	138	413	88.9	39.7
24	92.4	105	e90.3	554	152	128	137	2,070	131	293	80.7	39.3
25	92.3	104	e103	454	151	134	134	1,540	127	192	76.8	64.9
26	91.8	104	e121	e348	148	136	132	1,160	128	147	68.1	68.0
27	91.6	105	e122	e271	145	138	132	939	136	134	66.0	55.8
28	93.2	107	e115	252	144	137	159	796	131	122	69.0	51.7
29	94.0	106	e111	239		234	170	673	137	113	63.0	50.3
30	93.1	103	e109	220		758	515	558	133	107	68.8	49.7
31	94.5		e108	201		581		489		105	58.7	
Total	5,572	3,008	3,098	13,270	4,437	5,272	5,381	56,660	8,083	7,078	3,192	1,373
Mean	180	100	100.0	428	158	170	179	1,828	269	228	103	45.8
Max	925	110	122	1700	190	758	515	12000	1010	1700	207	68.0
Min	87.1	92.4	89.3	103	143	125	132	191	127	56.6	58.7	37.7
Ac-ft	11,050	5,966	6,146	26,320	8,801	10,460	10,670	112,400	16,030	14,040	6,331	2,722

https://waterdata.usgs.gov/nwis/wys_rpt?dv ts ids=93795&wys_water_yr=2017&site_no=... 5/9/2018

**STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1975 - 2017, BY WATER YEAR
(WY)**

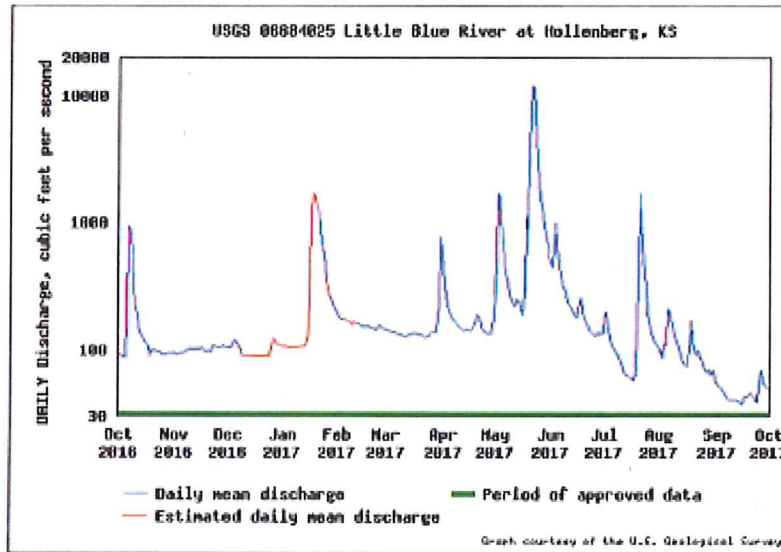
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	316	214	169	178	290	617	450	849	978	795	470	338
Max	2,163	1,113	424	577	1,059	3,816	2,379	2,638	4,654	9,014	2,572	1,320
(WY)	(1987)	(1997)	(1993)	(1984)	(1993)	(1993)	(1987)	(2015)	(2015)	(1993)	(1985)	(1977)
Min	45.3	81.1	87.2	84.4	96.9	118	118	109	151	68.1	51.5	32.0
(WY)	(1992)	(1992)	(2013)	(2015)	(2015)	(1981)	(2014)	(1992)	(1981)	(2013)	(2012)	(1991)

https://waterdata.usgs.gov/nwis/wys_rpt?dv_ts_ids=93795&wys_water_yr=2017&site_no=... 5/9/2018

Water-Data Report 2017
 06884025 Little Blue River at Hollenberg, KS -- Continued

SUMMARY STATISTICS

	Water Year 2017		Water Years 1975 - 2017	
Annual total	116,400			
Annual mean	319.0		473.9	
Highest annual mean			1,891	1993
Lowest annual mean			172.9	2006
Highest daily mean	12,000	May 20	39,300	Jul 26, 1992
Lowest daily mean	37.7	Sep 15	24.2	Sep 12, 2012
Annual 7-day minimum	39.7	Sep 10	26.0	Sep 06, 2012
Maximum peak flow			59,200	May 07, 2015
Maximum peak stage			22.97	May 07, 2015
Annual runoff (cfsm)	0.116		0.172	
Annual runoff (inches)	1.57		2.34	
10 percent exceeds	537.2		773.0	
50 percent exceeds	129.0		188.0	
90 percent exceeds	64.7		96.5	



https://waterdata.usgs.gov/nwis/wys_rpt?dv_ts_ids=93795&wys_water_yr=2017&site_no=... 5/9/2018

Water Year 2017 Discharge Measurements

Site #	Meas. #	Meas. Date & Time	Meas. Used	Meas. Party	Meas. Agency	Gage Height	Discharge	Meas. Rating	Control Condition
06882000	1444	10/21/2016 10:14	Yes	nds	USGS	3.76	220	Fair	Clear
06882000	1445	12/5/2016 10:55	Yes	bhi	USGS	3.98	277	Fair	Clear
06882000	1446	1/23/2017 14:21	Yes	jtc	USGS	7.32	2500	Fair	Clear
06882000	1447	3/8/2017 9:56	Yes	jtc	USGS	3.85	272	Fair	Clear
06882000	1448	4/10/2017 17:59	Yes	bhi	USGS	4.00	314	Fair	Clear
06882000	1449	5/21/2017 15:40	Yes	LWN/NDS	USGS	16.42	11300	Fair	DebrisLight
06882000	1450	5/23/2017 10:38	Yes	bhi/jtc	USGS	14.78	9810	Fair	Clear
06882000	1451	7/5/2017 17:30	Yes	bhi	USGS	7.63	2610	Fair	Clear
06882000	1452	7/12/2017 10:54	Yes	LWN	USGS	3.96	293	Fair	Clear
06882000	1453	8/23/2017 10:00	Yes	bhi	USGS	10.55	5250	Fair	Clear
06882000	1454	9/15/2017 9:20	Yes	bhi	USGS	3.72	229	Fair	Clear
06882000	1455	10/12/2017 7:45	Yes	bhi	USGS	7.42	2520	Fair	Clear
06884025	555	11/1/2016 10:41	Yes	bhi	USGS	1.80	94	Fair	Clear
06884025	556	12/5/2016 13:00	Yes	bhi	USGS	1.90	120	Fair	Clear
06884025	557	1/18/2017 11:01	Yes	bhi/lwn	USGS	4.66	1640	Fair	Clear
06884025	558	1/27/2017 11:38	Yes	bhi/nds	USGS	2.38	269	Fair	IceShore
06884025	559	3/8/2017 10:00	Yes	nds	USGS	1.94	127	Fair	Clear
06884025	560	4/11/2017 8:00	Yes	bhi	USGS	2.00	145	Fair	Clear
06884025	561	5/22/2017 13:00	Yes	MJA/NDS	USGS	9.92	8130	Fair	Clear
06884025	562	7/3/2017 11:11	Yes	LWN	USGS	2.18	147	Fair	Clear
06884025	563	7/12/2017 11:45	No	J.V.	NeDNR	1.87	57.6	Fair	
06884025	564	7/12/2017 12:03	Yes	LWN	USGS	1.86	63.7	Fair	Clear
06884025	565	7/20/2017 9:24	Yes	bhi	USGS	5.20	2050	Fair	Clear
06884025	566	8/1/2017 10:18	Yes	JTC	USGS	1.98	97.7	Fair	Clear
06884025	567	8/14/2017 10:25	Yes	bhi/nds	USGS	1.87	76.5	Fair	Clear
06884025	568	8/23/2017 12:46	Yes	bhi	USGS	1.90	91.7	Fair	Clear
06884025	569	9/5/2017 10:52	Yes	LWN	USGS	1.74	48.3	Fair	Clear
06884025	570	9/15/2017 13:35	Yes	bhi	USGS	1.66	37.1	Fair	Clear
06884025	571	10/11/2017 14:02	Yes	bhi	USGS	2.86	518	Fair	Clear

Attachment I

**REPORT OF THE ENGINEERING COMMITTEE
TO THE
KANSAS-NEBRASKA BIG BLUE RIVER COMPACT ADMINISTRATION**

May 24, 2018

The engineering committee was not given any special assignments from the Compact Administration and did not meet during the past year. The 2017 data for this report were collected as provided by the United States Geological Survey (USGS) and the Lower Big Blue Natural Resources District (LBBNRD).

Review of Streamflow Data

The Compact sets forth the following streamflow targets at the stateline gaging stations:

	Big Blue River	Little Blue River
May	45 cfs	45 cfs
June	45 cfs	45 cfs
July	80 cfs	75 cfs
August	90 cfs	80 cfs
September	65 cfs	60 cfs

During the May through September time period of the 2017 water year (October 1, 2016 through September 30, 2017) only the Little Blue River Basin fell below Compact target flows. The mean daily streamflow at the Barneston gage on the Big Blue River (Exhibit A) met or exceeded target flows throughout the year. The mean daily streamflow on the Little Blue River at the Hollenberg gage (Exhibit B) was below target flows for 45 days.

Real-time and historical data for these gaging stations can be found at the following websites:

Big Blue River – http://waterdata.usgs.gov/ne/nwis/uv/?site_no=06882000

Little Blue River – http://waterdata.usgs.gov/ne/nwis/uv/?site_no=06884025

Review of Groundwater Data

The Lower Big Blue Natural Resources District provided the groundwater levels (Exhibit C) for the Big Blue Basin near Beatrice.

Review of Wells in the Regulatory Reaches

Exhibit D is a listing of the irrigation wells within the regulatory reaches. There were no new wells drilled in the Big Blue River regulatory area and no new wells drilled in the Little Blue River regulatory area during this reporting period. There was one well, G-139240 in the Little Blue River regulatory area that was decommissioned on 12/18/2017.

Respectively Submitted,



Jeremy F. Gehle, Chair
Nebraska



Chris Beightel, P.E.
Kansas

Water-Data Report 2017

06882000 Big Blue River at Barneston, Nebr.

SUMMARY STATISTICS				
	Water Year 2017		Water Years 1933 - 2017	
Annual total	268,800			
Annual mean	736.4		839.7	
Highest annual mean			2,781	1993
Lowest annual mean			115.0	1934
Highest daily mean	12,000	May 21	50,000	Jun 09, 1941
Lowest daily mean	118.0	Aug 16	1.00	Nov 30, 1945
Annual 7-day minimum	154.7	Aug 12	15.1	Aug 03, 1934
Maximum peak flow			57,700	Jun 09, 1941
Maximum peak stage			34.30 ^a	Jun 09, 1941
Annual runoff (cfsm)	0.166		0.189	
Annual runoff (inches)	2.25		2.56	
10 percent exceeds	1,614		1,700	
50 percent exceeds	313.0		280.0	
90 percent exceeds	194.0		108.0	

^a Gage height at different site and(or) datum

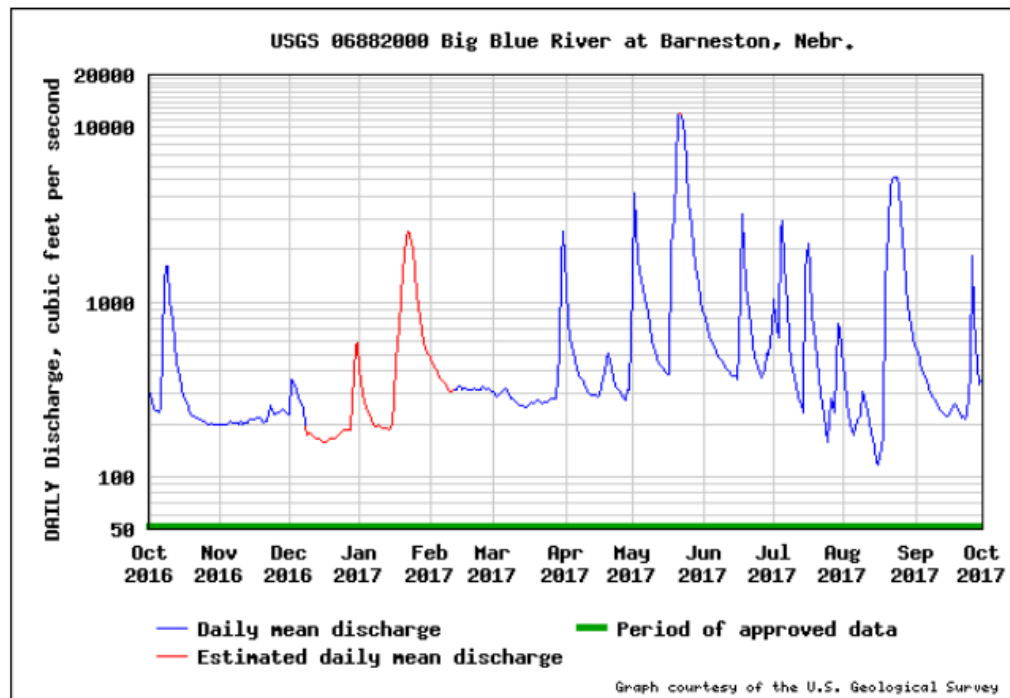


Exhibit A

Water-Data Report 2017

06884025 Little Blue River at Hollenberg, KS

SUMMARY STATISTICS

	Water Year 2017		Water Years 1975 - 2017	
Annual total	116,400			
Annual mean	319.0		473.9	
Highest annual mean			1,891	1993
Lowest annual mean			172.9	2006
Highest daily mean	12,000	May 20	39,300	Jul 26, 1992
Lowest daily mean	37.7	Sep 15	24.2	Sep 12, 2012
Annual 7-day minimum	39.7	Sep 10	26.0	Sep 06, 2012
Maximum peak flow			59,200	May 07, 2015
Maximum peak stage			22.97	May 07, 2015
Annual runoff (cfs)	0.116		0.172	
Annual runoff (inches)	1.57		2.34	
10 percent exceeds	537.2		773.0	
50 percent exceeds	129.0		188.0	
90 percent exceeds	64.7		96.5	

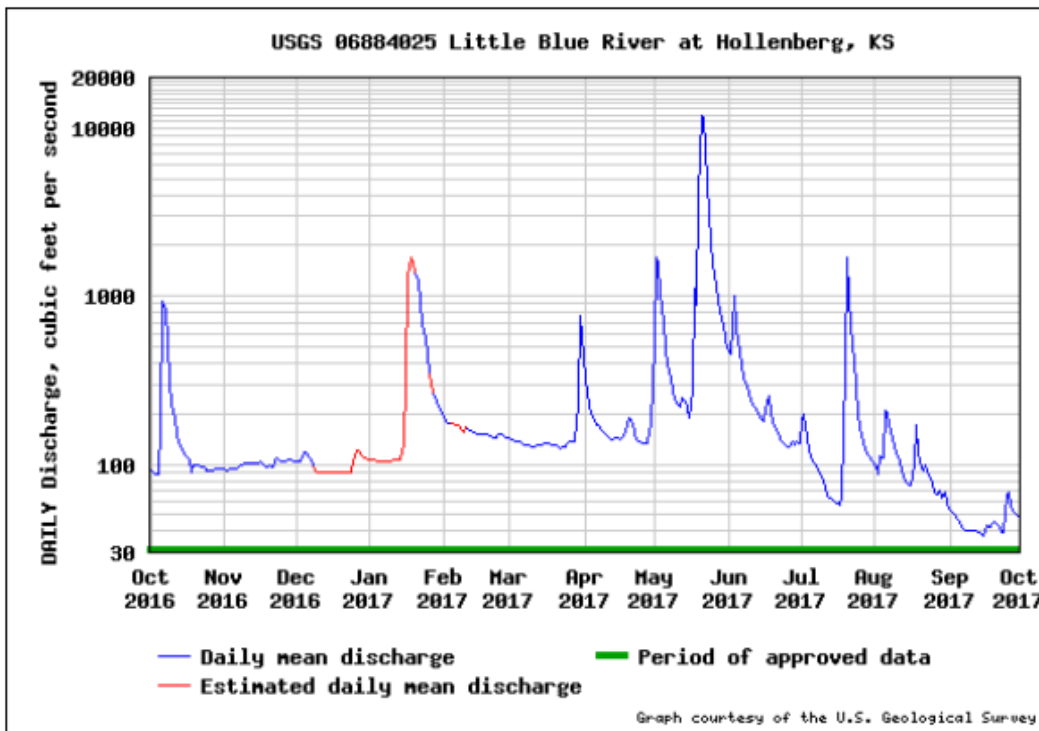


Exhibit B

BIG BLUE RIVER COMPACT STATIC WATER LEVELS 2017

LEGAL	SECT	SITE	TYPE	Spring 2017	Fall 2017
4N-5E	2	AAAA	OW	94.19	95.58
4N-5E	2	DDAA	IW	19.05	20.33
4N-5E	4	BBBC	IW	21.37	21.92
4N-5E	9	CBCC	IW	75.09	75.26
4N-5E	10	DDAA	IW	28.6	26.55
4N-5E	11	DACA	IW	17.02	17.02
4N-5E	14	ABBB	IW	14.05	13.78
4N-5E	25	AACD	IW	19.66	19.15
5N-4E	12	ABBA	IW	19.17	19.12
5N-4E	13	BADD	IW	16.45	15.77
5N-4E	23	BABB	IW	17.56	17.94
5N-4E	24	AACD	IW	18.72	18.33
5N-5E	7	CADD	IW	62.38	62.78
5N-5E	20	BCCD	IW	19.96	20.12
5N-5E	21	DDBB	IW	54.8	58.42
5N-5E	29	CBBB	IW	15.06	15.37
5N-5E	33	AADD	IW	16.58	20.11

OW - OBSERVATION WELLS

IW - IRRIGATION WELLS

Exhibit C

Big Blue River Regulatory Area Wells					
Registration Number	Location T-R-S	Completion Date	Depth (FT)	Registration Pumping Capacity (GPM)	Filing Date
G-036485	4N-5E-11BC	3/28/1972	82	750	4/24/1972
G-038314	4N-5E-2DD	1/16/1973	188	1,300	1/29/1973
G-047820	4N-5E-12BB	11/1/1975	117	1,200	12/4/1975
G-050086	5N-5E-33AD	5/26/1976	123	800	6/9/1976
G-054047	4N-5E-24BB	3/1/1976	84	800	1/6/1977
G-054260	4N-5E-14AA	6/1/1974	70	800	1/14/1977
G-054261	4N-5E-14AB	5/2/1970	70	800	1/14/1977
G-056152	4N-5E-4BB	4/14/1977	91	1,000	5/11/1977
G-059128	5N-5E-29AA	4/25/1977	60	400	1/4/1978
G-059727	5N-5E-33CB	4/19/1978	91	1,200	4/20/1978
G-081769	4N-5E-13CD	4/22/1994	65	250	6/24/1994
G-100788	5N-5E-29AB	3/19/1999	65	500	6/2/1999
G-110669	4N-5E-13CC	7/12/1995	64	375	6/29/2001
G-110847	4N-5E-3DA	5/4/1979	82	800	7/2/2001
G-110849	5N-5E-29DD	4/30/1983	102	800	7/2/2001
G-151969	5N-5E-33BB	12/11/2008	112	800	1/20/2009
G-155061	4N-5E-10BB	12/4/2009	98	800	1/27/2010
G-166637	5N-5E-33BC	3/20/2013	120	1,200	3/28/2013

Little Blue River Regulatory Area Wells					
Registration Number	Location T-R-S	Completion Date	Depth (FT)	Registration Pumping Capacity (GPM)	Filing Date
G-058158	2N-2E-16AD	8/15/1977	29	650	9/6/1977

Exhibit D

Attachment J

Nebraska 303d listings, TMDL development, and 319 Activities

Blue River Basin

May 15, 2018

Assessment categories for waterbodies in the 2018 Integrated Report:

Category 1 – Waterbodies where all designated uses are met.

Category 2 – Waterbodies where some of the designated uses are met but there is insufficient information to determine if all uses are being met.

Category 3 – Waterbodies where there is insufficient data to determine if any beneficial uses are being met.

Category 4 – Waterbody is impaired, but a TMDL is not needed. Sub-categories 4A-C and R outline the rationale for the waters not needing a TMDL:

Category 4a – Waterbody assessment indicates the waterbody is impaired, but all of the required TMDLs have been completed.

Category 4b – Waterbody is impaired, but “other pollution control requirements” are expected to address the water quality impairment(s) within a reasonable period of time. Other pollution control requirements include, but are not limited to, National Pollutant Discharge Elimination System (NPDES) permits and best management practices.

Category 4c – Waterbody is impaired but the impairment is not caused by a pollutant. This category also includes waters where natural causes/sources have been determined to be the cause of the impairment. In general, natural causes/sources shall refer to those pollutants that originate from landscape geology and climactic conditions. It should be noted, this definition is not inclusive.

Category 4r – Waterbody data exceeds the impairment threshold however a TMDL is not appropriate at this time. The category will only be used for nutrient assessments in new or renovated lakes and reservoirs. Newly filled reservoirs usually go through a period of trophic instability – a trophic upsurge followed by the trophic decline (Holdren, et. al. 2001). Erroneous water quality assessments are likely to occur during this period. To account for this, all new or renovated reservoirs will be placed in this category for a period not to exceed eight years following the fill or re-fill process. After the eighth year monitoring data will be assessed and the waterbody will be appropriately placed into category 1, 2, or 5.

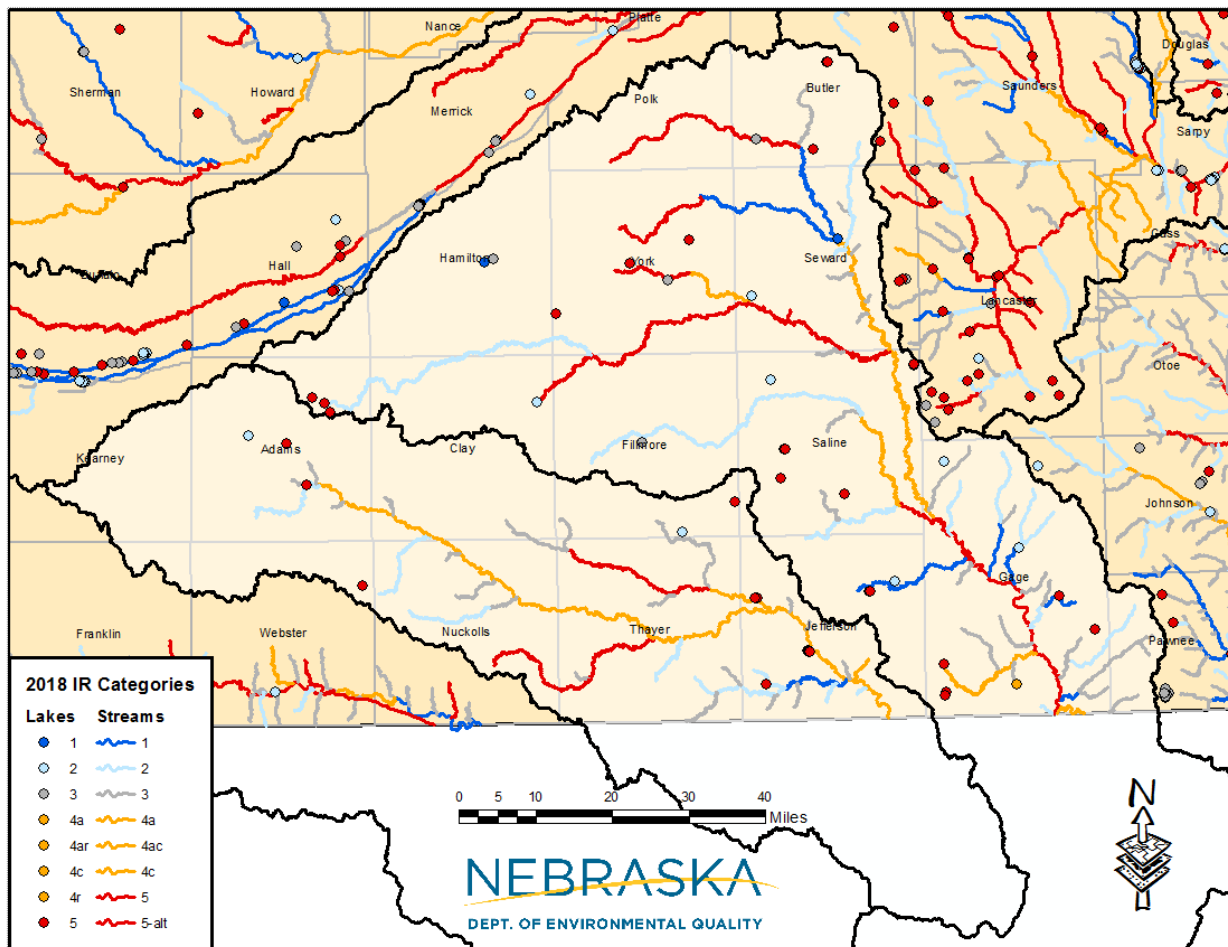
Category 5 – Waterbodies where one or more beneficial uses are determined to be impaired by one or more pollutants and all of the TMDLs have not been developed. **Category 5 waters constitute the Section 303(d) list subject to EPA approval/disapproval.**

Category 5alt – Waterbody is impaired, but “other pollution control alternatives besides a TMDL” are expected to address the water quality impairment(s) within a reasonable period of time. Other pollution control alternatives include, but are not limited to, watershed management plans and best management practices.

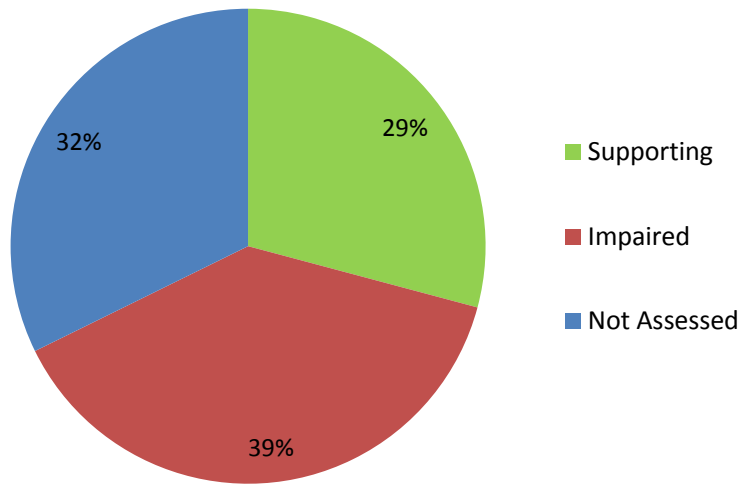
303d Listing: 2018 Integrated Report Assessment Statuses and changes from the 2016 IR.

Basin	Category								Basin Total
	1	2	3	4A	4B	4C	4R	5	
Big Blue Streams	7	15	24	8	0	0	NA	9	63
Big Blue Lakes	2	6	4	0	0	0	1	18	31
Little Blue Streams	1	9	19	6	0	0	NA	3	38
Little Blue Lakes	0	2	0	0	0	0	0	10	*12

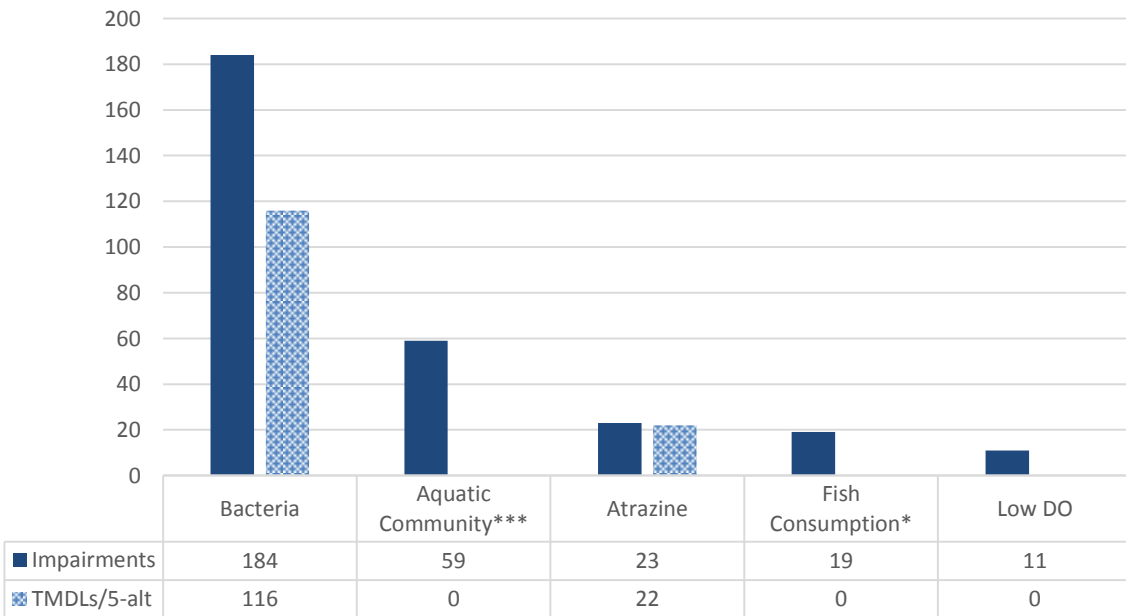
*Big Blue River (BB1-10000), Big Sandy Creek (LB2-10100), and Little Blue River (LB2-20000) moved from category 5 to 4a. Lincoln Creek (BB4-20800) was moved from category 5 to 1 and Cub Creek (BB1-11900) was moved from category 2 to 1. No additional category 3 waters were monitored between listing cycles.



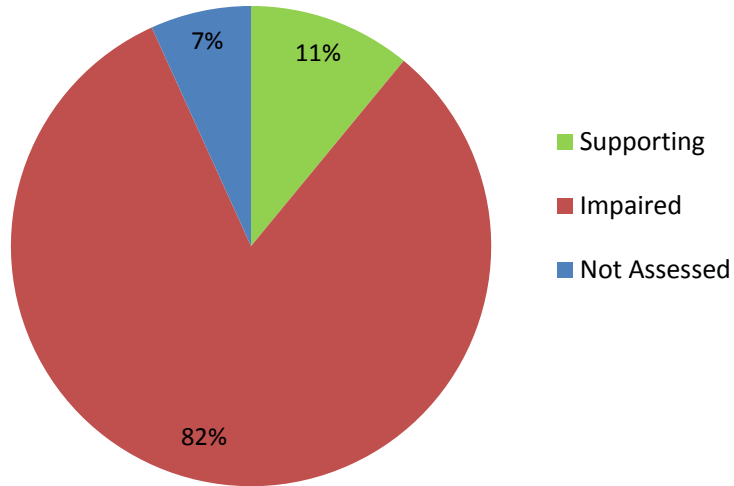
Status of Nebraska streams in miles as reported in the 2018 Integrated Report



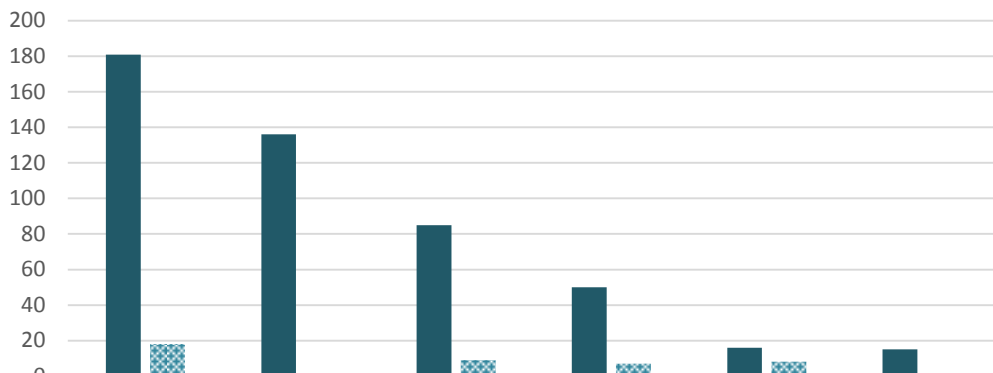
2018 Common Stream Impairments



Status of Nebraska lakes in acres as reported in the 2018 Integrated Report



2018 Common Lake Impairments



	Nutrients	Fish Consumption*	Chlorophyll a	High pH	Low DO	Bacteria**
■ Impairments	181	136	85	50	16	15
▨ TMDLs/5-alt	18	0	9	7	8	1

TMDL Development: Blue River Basin Waterbodies with Established/Approved TMDLs

Basin	ID	Waterbody Name	Impaired Use	Impairment	WMP	Notes
BB	BB1-10000	Big Blue River	Primary Contact Recreation	E coli	Lower Big Blue River Basin	revised TMDL
			Aquatic Life	Atrazine	Lower Big Blue River Basin	
	BB1-10100	Mission Creek	Aquatic Life	Atrazine	Lower Big Blue River Basin	
			Primary Contact Recreation	E coli	Lower Big Blue River Basin	
	BB1-10800	Big Indian Creek	Aquatic Life	Atrazine	Lower Big Blue River Basin	
			Primary Contact Recreation	E coli	Lower Big Blue River Basin	
	BB1-10900	Big Indian Creek	Aquatic Life	Atrazine	Lower Big Blue River Basin	
	BB1-20000	Big Blue River	Primary Contact Recreation	E coli	Lower Big Blue River Basin	revised TMDL
			Aquatic Life	Atrazine	Lower Big Blue River Basin	
	BB1-L0030	Big Indian Lake	Aesthetics, Aquatic Life	T.Phosphorus	Big Indian Reservoir	
			Aesthetics, Aquatic Life	Sediment	Big Indian Reservoir	
	BB2-10000	Turkey Creek	Aquatic Life	Atrazine	Lower Big Blue River Basin	
			Primary Contact Recreation	E coli	Lower Big Blue River Basin	
	BB2-20000	Turkey Creek	Primary Contact Recreation	E coli	Lower Big Blue River Basin	
			Aquatic Life	Atrazine	Lower Big Blue River Basin	
	BB3-10000	West Fork Big Blue River	Primary Contact Recreation	E coli	None	revised TMDL
			Aquatic Life	Atrazine	None	
	BB3-10300	Beaver Creek	Aquatic Life	Atrazine	None	
	BB3-20000	West Fork Big Blue River	Primary Contact Recreation	E coli	None	
			Aquatic Life	Atrazine	None	
BB4-10000	Big Blue River	Primary Contact Recreation	E coli	None		
		Aquatic Life	Atrazine	None		
BB4-20000	Big Blue River	Primary Contact Recreation	E coli	None		
BB4-20800	Lincoln Creek	Aquatic Life	Atrazine	None		
BB4-40000	Big Blue River	Aquatic Life	Atrazine	None		
LB	LB1-10000	Little Blue River	Primary Contact Recreation	E coli	Draft Little Blue River Basin	revised TMDL
			Public Drinking Water Supply	Atrazine	Draft Little Blue River Basin	
			Aquatic Life	Atrazine	Draft Little Blue River Basin	
	LB1-10200	Rock Creek	Primary Contact Recreation	E coli	Draft Little Blue River Basin	
	LB2-10000	Little Blue River	Primary Contact Recreation	E coli	Draft Little Blue River Basin	revised
			Aquatic Life	Atrazine	Draft Little Blue River Basin	
	LB2-10100	Big Sandy Creek	Aquatic Life	Atrazine	Draft Little Blue River Basin	
	LB2-10100	Big Sandy creek	Primary Contact Recreation	E coli	Draft Little Blue River Basin	
	LB2-20000	Little Blue River	Aquatic Life	Atrazine	Draft Little Blue River Basin	
Primary Contact Recreation			E coli	Draft Little Blue River Basin		
LB2-30000	Little Blue River	Primary Contact Recreation	E coli	Draft Little Blue River Basin		

Clean Water Act Section 319 (Nonpoint Source) Activities in the Blue River Basin:

Little Blue NRD

- LBNRD has a draft 9-element basin plan near completion at NDEQ. Submittal for EPA R7 review is expected in May 2018.
- LBNRD participated in a NWQI Pilot Project for the Big Sandy Watershed. Approval for the Big Sandy Watershed as a new NWQI area was approved in 2018. NWQI funding is in question however, as federal rescissions are being made as announced in May 2018.
- LBNRD is in the initial stages of a 319 project for rehabilitation of Crystal Lake in Ayr, NE. This project will serve as a watershed management demonstration project.

Upper Big Blue NRD

- UBBNRD is currently in the process of developing a 319 9-element watershed management plan for their district. It is unique in the fact that they are concurrently undergoing a Voluntary Integrated Management Plan in conjunction with the Nebraska Department of Natural Resources. By coordinating both efforts between multiple agencies, the overall goal is to produce two separate plans that have complementary goals and objectives.

Lower Big Blue NRD

- LBBNRD has a 9-element basin plan in place, effective 2013.
- Following the LBBNRD's 319 project to treat the Cub Creek 12A watershed, the Cub Creek 12A reservoir is slated to be rehabilitated in 2018-2019.

NPDES Permits in the Nebraska Counties in the Big and Little Blue River Basins - 2018

FACILITY	Program/ NPDES #	NDEQ ID/ IIS #	Municipal, Industrial, Private or SID	NPDES or NPP	CITY	COUNTY
Ag Processing, Inc -aka- AGP Corn Processing, Inc.	NE0131679	62574	I	NPP	Omaha	Adams
Chief Ethanol Fuels Inc	NE0114243	58049	I	NPDES	Hastings	Adams
Dutton-Lainson Company	NE0000221	125	I	NPDES/NPP	Hastings	Adams
Eaton MDH Company, Inc	NE0132381	63629	I	NPP	Kings Mountain	Adams
Equalizer Midwest, Inc -fka- Farmland Ind Hastings	NE0000035	139	I	NPDES	Hastings	Adams
Hastings Aquifer Storage and Restoration Water Storage F	NE0139343	104254	I	NPDES	Hastings	Adams
Hastings Irrigation Pipe Co.	NE0130079	55714	I	NPP	Hastings	Adams
Hastings Maxon Avenue WWTF	NE0113298	66037	M	NPDES	Hastings	Adams
Hastings North Denver Power Station	NE0000141	55721	I	NPDES/NPP	Hastings	Adams
Hastings Whelan Energy Center	NE0113506	58048	I	NPDES/NPP	Hastings	Adams
Hastings WWTF - Pollution Control Facility	NE0038946	58339	M	NPDES	Hastings	Adams
Juniata WWTF	NE0028100	57744	M	NPDES	Juniata	Adams
Kenesaw WWTF	NE0021555	57747	M	NPDES	Kenesaw	Adams
Nebraska Aluminum Castings Inc	NE0133337	127	I	NPP	Hastings	Adams
Noah's Ark Processors, LLC -fka- Nebraska Prime Group L	NE0132919	756	I	NPP	Hastings	Adams
Thermo King Corporation - Ingersoll Rand	NE0114588	133	I	NPP	Hastings	Adams
Well #3 Subsite; Hastings GWCS	NE0131911	71693	I	NPDES	Hastings	Adams
Bellwood WWTF	NE0046094	57655	M	NPDES	Bellwood	Butler
David City WWTF	NE0021199	4034	M	NPDES	David City	Butler
Dwight WWTF	NE0046175	57957	M	NPDES	Dwight	Butler
Henningsen Foods, Inc - David City	NE0133108	3873	I	NPP	Omaha	Butler
Rising City WWTF	NE0046299	57819	M	NPDES	Rising City	Butler
SID 1, Butler Co, Clear Lake Residential Association WWT	NE0114901	57942	SID	NPDES	Columbus	Butler
Timpte, Inc	NE0138193	3875	I	NPP	David City	Butler
Ulysses WWTF	NE0024368	58222	M	NPDES	Ulysses	Butler
Bioiberica Nebraska, Inc	NE0133710	22136	I	NPP	Barcelona	Fillmore
Exeter WWTF	NE0040941	57712	M	NPDES	Exeter	Fillmore
Fairmont WWTF	NE0042374	57714	M	NPDES	Fairmont	Fillmore
Flint Hills Resources Fairmont, LLC	NE0137839	86026	I	NPDES	Ames	Fillmore
Fortigen, LLC	NE0139351	107214	I	NPDES	Geneva	Fillmore
Geneva WWTF	NE0031763	22320	M	NPDES	Geneva	Fillmore
Grafton WWTF	NE0045217	57723	M	NPDES	Grafton	Fillmore
IPSCO Tubulars	NE0132357	22412	I	NPDES	Geneva	Fillmore
Metal-Tech Partners	NE0132829	73092	I	NPP	Geneva	Fillmore
Milligan WWTF	NE0039853	58118	M	NPDES	Milligan	Fillmore
Adams Washout - Jim Young	NE0134139	83497	I	NPDES	Adams	Gage
Adams WWTF	NE0045055	57628	M	NPDES	Adams	Gage
Agrium U S, Inc - Homestead Nitrogen Operations	NE0111805	23052	I	NPDES		Gage
Barneston WWTF	NE0121711	57887	M	NPDES	Wymore	Gage
Beatrice WWTF	NE0020915	57650	M	NPDES	Beatrice	Gage
Clatonia WWTF	NE0045101	57930	M	NPDES	Clatonia	Gage
Cortland WWTF	NE0027782	57936	M	NPDES	Cortland	Gage
Duonix Beatrice, LP - fka- Flint Hills Resources-Beatrice-fk	NE0137774	86751	I	NPP	Beatrice	Gage
E Energy Adams, LLC	NE0137804	86373	I	NPDES	Adams	Gage
Exmark Manufacturing Company Inc, The Toro Company -f	NE0124605	23151	I	NPP	Beatrice	Gage
Koch Fertilizer Beatrice, LLC -fka- Koch Nitrogen Co LLC -f	NE0000060	23383	I	NPDES	Wichita	Gage
Northern Natural Gas Beatrice - Beatrice Compressor Stati	NE0000108	23382	I	NPDES	Omaha	Gage
NPPD Beatrice Station	NE0134236	76739	I	NPDES	Columbus	Gage
Odell WWTF	NE0040975	57787	M	NPDES	Odell	Gage
Pickrell WWTF	NE0045276	57804	M	NPDES	Pickrell	Gage
Wymore WWTF	NE0021130	57874	M	NPDES	Wymore	Gage
Diller WWTF	NE0129500	57953	M	NPDES	Diller	Jefferson
Fairbury WWTF	NE0024384	57713	M	NPDES	Fairbury	Jefferson
Harbine WWTF	NE0114171	57731	M	NPDES	Harbine	Jefferson
Jansen WWTF	NE0045233	57741	M	NPDES	Jansen	Jefferson

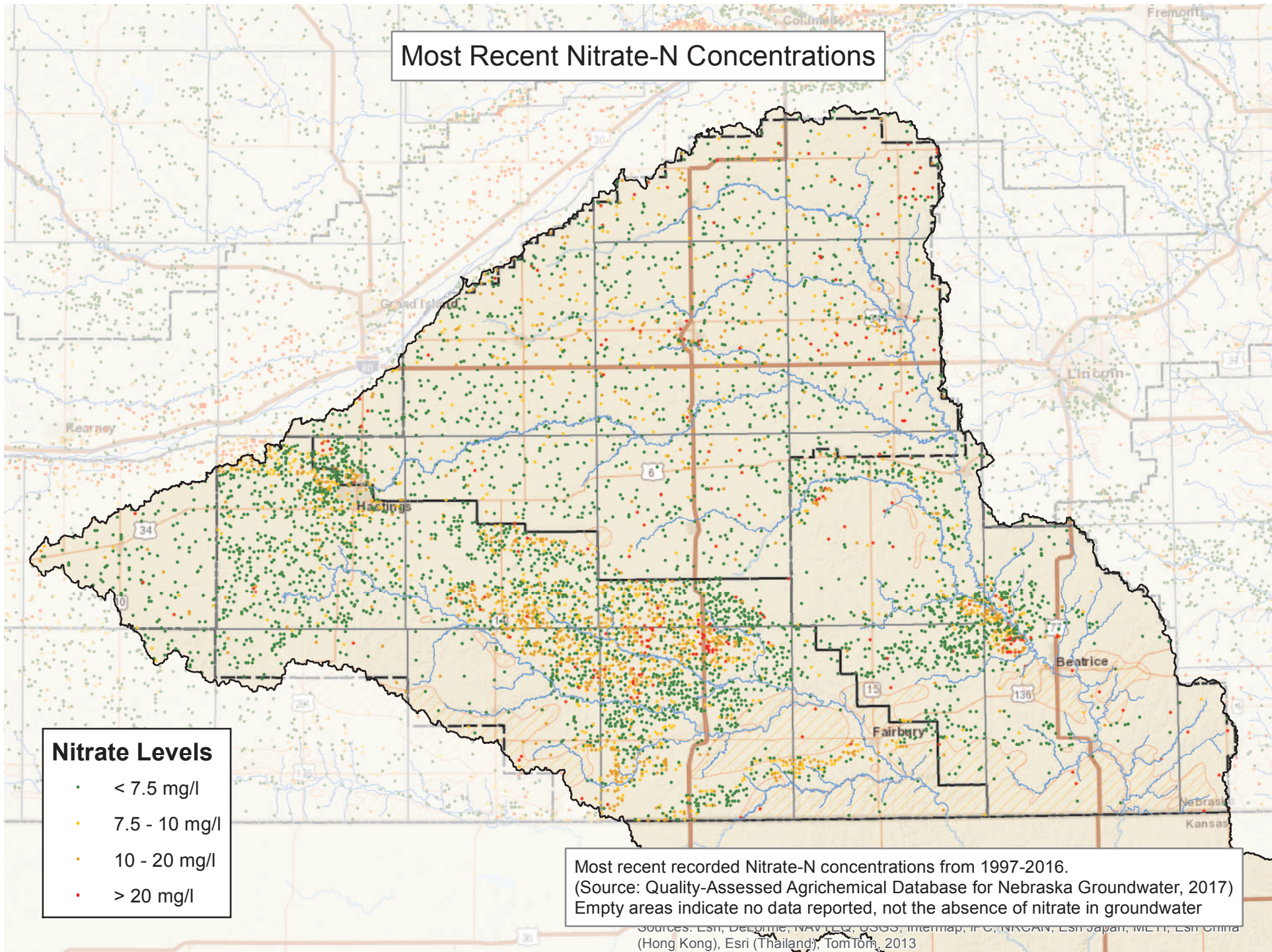
NPDES Permits in the Nebraska Counties in the Big and Little Blue River Basins - 2018

FACILITY	Program/ NPDES #	NDEQ ID/ IIS #	Municipal, Industrial, Private or SID	NPDES or NPP	CITY	COUNTY
Loveland Products, Inc -fka- Agrium Advanced Technologies	NE0138347	27086	I	NPDES	Loveland	Jefferson
Plymouth WWTF	NE0040894	57810	M	NPDES	Plymouth	Jefferson
Westin Foods, Westin Packaged Meats -fka- Feaster Foods	NE0114081	27077	I	NPP	Fairbury	Jefferson
Archer Daniels Midland - Lincoln	NE0035157	28863	I	NPDES/NPP	Decatur	Lancaster
Bennet WWTF	NE0040916	57899	M	NPDES	Bennet	Lancaster
Bison, Inc -fka- Source One -fka- Industrial Powder Coating	NE0128082	29818	I	NPP	Lincoln	Lancaster
Bosch Security System Inc -fka- Telex Communications Inc	NE0043371	58079	I	NPDES	Lincoln	Lancaster
Cardwell Reserve Homeowners Assn WWTF	NE0137596	86259	P	NPDES	Lincoln	Lancaster
Cardwell Woods Homeowners Assn WWTF	NE0133841	72177	P	NPDES	Lincoln	Lancaster
Commercial Plastics Nebraska LLC -dba- MB Allanson	NE0114014	33555	I	NPDES	Mundelein	Lancaster
ConAgra Foods Packaged Foods Lincoln Plant -fka- Lincoln	NE0001309	58074	I	NPP	Lincoln	Lancaster
Contitech USA, Inc. -fka- Veyance Technologies Inc -fka- G	NE0000400	28956	I	NPDES	Fairlawn	Lancaster
CrossLinc Custom Coatings, LLC	NE0139262	107375	I	NPP	Lincoln	Lancaster
Dakota Springs HOA - SWL Development LLC	NE0137821	86736	P	NPDES	Roca	Lancaster
Davey WWTF	NE0024295	57695	M	NPDES	Davey	Lancaster
Denton WWTF	NE0046141	57699	M	NPDES	Denton	Lancaster
Firth WWTF	NE0112241	57997	M	NPDES	Firth	Lancaster
Foreman Ridge WWTF	NE0137553	85538	P	NPDES	Lincoln	Lancaster
Geist Manufacturing - Liebert Corporation, formally owned b	NE0138142	91484	I	NPP	Lincoln	Lancaster
General Dynamics Ordnance & Tactical Systems, Inc -fka-	NE0060062	31266	I	NPP	Lincoln	Lancaster
Hallam WWTF	NE0028282	57729	M	NPDES	Hallam	Lancaster
Hickman WWTF	NE0046183	31730	M	NPDES	Hickman	Lancaster
Hidden Valley Estates	NE0137669	86477	P	NPDES	Lincoln	Lancaster
Kawasaki Motors Manufacturing Corp, USA	NE0132811	28861	I	NPP	Lincoln	Lancaster
Kiechel Fine Art	NE0139033	103794	I	NPDES	Lincoln	Lancaster
LES Rokeby Generating Station	NE0123935	28950	I	NPDES	Lincoln	Lancaster
Lester Electrical of Nebraska, Inc	NE0060127	28963	I	NPP	Lincoln	Lancaster
Lincoln Electric System - Terry Bundy Generating Station -f	NE0133191	75273	I	NPP	Lincoln	Lancaster
Lincoln Industries Inc	NE0114367	28962	I	NPP	Lincoln	Lancaster
Lincoln MS4	NE0133671	999333	I	NPDES	Lincoln	Lancaster
Lincoln Northeast WWTF	NE0112488	31988	M	NPDES	Lincoln	Lancaster
Lincoln Theresa Street Water Resource Recovery Facility	NE0036820	32246	M	NPDES	Lincoln	Lancaster
Magellan Pipeline Co, LP - Lincoln -fka- Williams Pipelin	NE0123102	58177	I	NPDES	Tulsa	Lancaster
Malcolm WWTF	NE0024261	57762	M	NPDES	Malcom	Lancaster
Matheson Tri-Gas, Inc -fka- Linweld Mfg -fka- Lincoln Weld	NE0113921	31166	I	NPDES	New Johnsonville	Lancaster
Midlands Financial Benefits	NE0134309	84281	I	NPDES	Lincoln	Lancaster
Molex, LLC	NE0131776	64164	I	NPP	Lincoln	Lancaster
Nebraska State Penitentiary	NE0113565	28911	I	NPDES	Lincoln	Lancaster
Novartis Consumer Health, Inc	NE0000701	30269	I	NPP	Lincoln	Lancaster
NPPD Sheldon Power Station	NE0111490	33563	I	NPDES	Columbus	Lancaster
Panama WWTF	NE0046256	57798	M	NPDES	Panama	Lancaster
Prairieland Dairy, LLC	NE0139467	73762	I	NPDES	Firth	Lancaster
Raymond WWTF	NE0046281	57817	M	NPDES	Raymond	Lancaster
Ready Mixed Concrete Co - College View Plant	NE0131571	58601	I	NPDES	Lincoln	Lancaster
Ready Mixed Concrete Co - Havelock Plant	NE0033651	29708	I	NPDES	Lincoln	Lancaster
Ready Mixed Concrete Co - Y St. Plant	NE0033642	58600	I	NPDES	Lincoln	Lancaster
Robert V Denney Federal Building and Courthouse - Gener	NE0138819	52978	I	NPDES	Kansas City	Lancaster
Schneider Electric USA, Inc -fka- Square D Co	NE0114383	57743	I	NPP	Nashville	Lancaster
SID 5, Lancaster Co, Cheney WWTF	NE0129551	58249	SID	NPDES	Lincoln	Lancaster
Smithfield Packaged Meats Corp - Lincoln, Nebraska -fka-	NE0121428	32412	I	NPP	Lincoln	Lancaster
Source One	NE0138703	86954	I	NPP	Lincoln	Lancaster
Tecumseh Poultry LLC - Waverly, fka MBA Poultry LLC - W	NE0137723	86850	I	NPP	Waverly	Lancaster
Teledyne ISCO -fka- ISCO, Inc	NE0060011	52611	I	NPP	Lincoln	Lancaster
The Preserve at Cross Creek WWTF	NE0139076	83680	P	NPDES	Lincoln	Lancaster
TMCO Powdercoating	NE0133752	29963	I	NPP	Lincoln	Lancaster

NPDES Permits in the Nebraska Counties in the Big and Little Blue River Basins - 2018

FACILITY	Program/ NPDES #	NDEQ ID/ IIS #	Municipal, Industrial, Private or SID	NPDES or NPP	CITY	COUNTY
University of NE East Campus Utility Plant	NE0031631	58076	I	NPDES	Lincoln	Lancaster
University of NE Lincoln SMS4 East & City Campus	NE0133892	58076	I	NPDES	Lincoln	Lancaster
Waverly WWTF	NE0024406	57866	M	NPDES	Waverly	Lancaster
Yankee Hill Brick Mfg Co, Pacific Clay Products, Inc.	NE0046507	28865	I	NPDES	Lincoln	Lancaster
Zoetis, LLC -fka- Pfizer, Inc Lincoln	NE0132110	31278	I	NPDES/NPP	Lincoln	Lancaster
Superior WWTF	NE0023809	57843	M	NPDES	Superior	Nuckolls
Osceola WWTF	NE0046230	57794	M	NPDES	Osceola	Polk
Shickley WWTF	NE0030767	57828	M	NPDES	Shickley	Polk
Stromsburg WWTF	NE0024325	57841	M	NPDES	Stromsburg	Polk
Americold Logistics Inc	NE0134104	83459	I	NPDES	Crete	Saline
Crete Core Ingredients, LLC - Omaha Industries, Inc -fka-	NE0138746	87643	I	NPP	Omaha	Saline
Crete Municipal Power Plant	NE0111384	57951	I	NPDES	Crete	Saline
Crete WWTF	NE0034304	57688	M	NPDES	Crete	Saline
DeWitt WWTF	NE0024341	57697	M	NPDES	DeWitt	Saline
Doane University	NE0128775	40821	I	NPDES	Crete	Saline
Dorchester WWTF	NE0021539	57702	M	NPDES	Dorchester	Saline
Friend WWTF	NE0024007	57717	M	NPDES	Friend	Saline
Malco Products, Inc. - DeWitt	NE0139378	41000	I	NPDES	Annandale	Saline
Nestle Purina PetCare Co	NE0000116	41166	I	NPDES	Crete	Saline
Smithfield Fresh Meats Corp -fka- Smithfield Farmland Cor	NE0032191	40819	I	NPDES	Crete	Saline
Western WWTF	NE0042501	57869	M	NPDES	Western	Saline
Wilber WWTF	NE0045373	41092	M	NPDES	Wilber	Saline
Beaver Crossing WWTF	NE0023981	57652	M	NPDES	Beaver Crossing	Seward
Bee WWTF	NE0123200	57653	M	NPDES	Bee	Seward
Concordia University	NE0133124	44869	I	NPDES	Seward	Seward
Garland WWTF	NE0023931	58019	M	NPDES	Garland	Seward
Milford WWTF	NE0024333	45136	M	NPDES	Milford	Seward
NDOT Blue River Eastbound Rest Area	NE0031992	57569	I	NPDES	Lincoln	Seward
Seward Corrosion Control Plant	NE0134252	83596	I	NPDES	Seward	Seward
Seward WWTF	NE0023876	57827	M	NPDES	Seward	Seward
Staplehurst WWTF	NE0040959	57837	M	NPDES	Staplehurst	Seward
Utica WWTF	NE0045365	57854	M	NPDES	Utica	Seward
Alexandria WWTF	NE0029238	57631	M	NPDES	Alexandria	Thayer
Bruning WWTF	NE0045071	57664	M	NPDES	Bruning	Thayer
Deshler WWTF	NE0039802	57700	M	NPDES	Deshler	Thayer
Hebron WWTF	NE0024252	46003	M	NPDES	Hebron	Thayer
Reinke Manufacturing, Inc	NE0139092	45856	I	NPDES	Deshler	Thayer
Guide Rock WWTF	NE0021601	58039	M	NPDES	Guide Rock	Webster
Benedict WWTF	NE0114944	57656	M	NPDES	Benedict	York
Bradshaw WWTF	NE0121321	57909	M	NPDES	Bradshaw	York
DuPont Pioneer Hi-Bred Int., Inc. York Production -fka- Pior	NE0137936	52236	I	NPDES	York	York
Green Plains - York LLC -fka- Abengoa Bioenergy Corp	NE0131539	59094	I	NPP	Omaha	York
Gresham WWTF	NE0027359	57726	M	NPDES	Gresham	York
Hamilton Sundstrand Corp, a UTC Aerospace Systems Co	NE0134066	47643	I	NPP	York	York
Ply Gem Industries, Kroy Building Products -dba- Ply Gem	NE0133213	43456	I	NPP	York	York
Waco WWTF	NE0045004	57860	M	NPDES	Waco	York
York Cold Storage Co	NE0111317	47828	I	NPDES	York	York
York WWTF	NE0040932	47995	M	NPDES	York	York

Most Recent Nitrate-N Concentrations

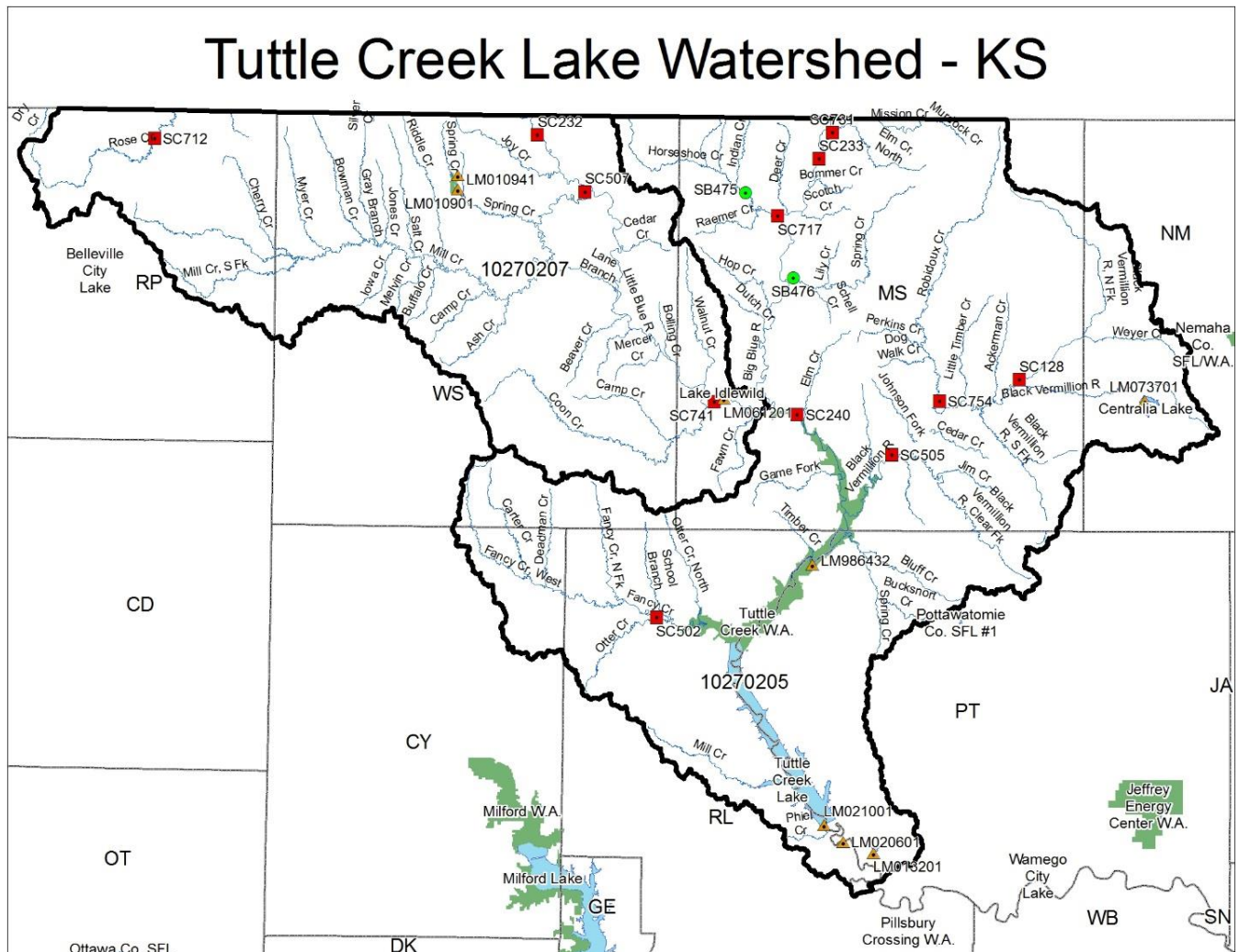


Attachment K



2018 Big Blue River Compact – Kansas Water Quality Summary

Prepared by the Kansas Department of Health and Environment
 Watershed Planning, Monitoring, and Assessment Section
 Bureau of Water



Kansas Monitoring Stations:

Lower Big Blue, HUC8: 1270205

STATION	NAME_PROPER	HUC8_CODE	Waterbodies
LM013201	Pottawatomie Co. SFL #2	10270205	1
LM020601	Rocky Ford W.A.	10270205	1
LM021001	Tuttle Creek Lake	10270205	1
LM073701	Centralia Lake	10270205	1
LM986432	Tuttle Creek W.A.	10270205	1
SB475	Horseshoe Creek	10270205	1
SB476	Spring Creek	10270205	1
SC128	North Fork Black Vermillion River Near Vliets	10270205	2
SC233	Big Blue River Near Oketo	10270205	3
SC240	Big Blue River Near Blue Rapids	10270205	14
SC502	Fancy Creek Near Randolph	10270205	6
SC505	Black Vermillion River Near Frankfort	10270205	19
SC717	Horseshoe Creek Near Marysville	10270205	5
SC731	North Elm Creek Near Oketo	10270205	1
SC754	Robidoux Creek near Frankfort	10270205	3

Lower Little Blue, HUC8: 10270207

STATION	NAME_PROPER	HUC8_CODE	Waterbodies
LM010901	Washington Co. SFL	10270207	1
LM010941	Washington W.A.	10270207	1
LM061201	Lake Idlewild	10270207	1
SC232	Little Blue River Near Hollenberg	10270207	5
SC507	Mill Creek Near Hanover	10270207	20
SC712	Rose Creek Near Narka	10270207	1
SC741	Little Blue River Near Waterville	10270207	14

Kansas 2018 303(d) Listings

Waterbody Name	CATEGORY	SITE_TYPE	IMPAIRMENT	STATION
Big Blue River Near Oketo	5	P	Total Phosphorus	SC233
Big Blue River Near Oketo	5	P	Total Suspended Solids	SC233
Big Blue River Near Oketo	5	P	Arsenic	SC233
Big Blue River Near Oketo	5	P	Biology	SC233
Big Blue River Near Oketo	5	P	pH	SC233
Fancy Creek Near Randolph	5	R	Sulfate	SC502
Black Vermillion River Near Frankfort	5	P	Total Suspended Solids	SC505
Black Vermillion River Near Frankfort	5	P	Total Phosphorus	SC505
Black Vermillion River Near Frankfort	5	P	Biology	SC505
Horseshoe Creek Near Marysville	5	R	Total Phosphorus	SC717
Horseshoe Creek Near Marysville	5	R	Sulfate	SC717
North Elm Creek Near Oketo	5	P	Total Phosphorus	SC731
Robidoux Creek near Frankfort	5	R	Total Phosphorus	SC754
Horseshoe Creek	5	B	Biology	SB475
Spring Creek	5	B	Biology	SB476
North Fork Black Vermillion River Near Vliets	5	R	Biology	SC128
Big Blue River Near Blue Rapids	5	P	Total Suspended Solids	SC240
Big Blue River Near Blue Rapids	5	P	pH	SC240
Big Blue River Near Blue Rapids	5	P	Total Phosphorus	SC240
Big Blue River Near Blue Rapids	5	P	Copper	SC240

Waterbody Name	CATEGORY	SITE_TYPE	IMPAIRMENT	STATION
Washington Co. SFL	5	L	Eutrophication	LM010901
Washington W.A.	5	W	Lead	LM010941
Little Blue River Near Hollenberg	5	P	Total Suspended Solids	SC232
Little Blue River Near Hollenberg	5	P	Total Phosphorus	SC232
Little Blue River Near Hollenberg	5	P	pH	SC232
Little Blue River Near Hollenberg	5	P	Copper	SC232
Little Blue River Near Hollenberg	5	P	Biology	SC232
Mill Creek Near Hanover	5	P	Total Suspended Solids	SC507
Mill Creek Near Hanover	5	P	Total Phosphorus	SC507
Rose Creek Near Narka	5	R	Arsenic	SC712
Rose Creek Near Narka	5	R	Total Phosphorus	SC712
Little Blue River Near Waterville	5	P	Total Suspended Solids	SC741
Little Blue River Near Waterville	5	P	Total Phosphorus	SC741

Kansas Approved TMDLs

Lower Big Blue				
HUC8: 10270205				
TMDLs - Category 4a				
Waterbody Name	CATEGORY	SITE_TYPE	IMPAIRMENT	STATION
Tuttle Creek Lake	4a	L	Eutrophication	LM021001
Tuttle Creek Lake	4a	L	Atrazine	LM021001
Tuttle Creek Lake	4a	L	Alachlor	LM021001
Tuttle Creek Lake	4a	L	Siltation	LM021001
Big Blue River Near Oketo	4a	P	E. coli	SC233
Big Blue River Near Oketo	4a	P	Atrazine	SC233
Fancy Creek Near Randolph	4a	R	Atrazine	SC502
Fancy Creek Near Randolph	4a	R	E. coli	SC502
Black Vermillion River Near Frankfort	4a	P	E. coli	SC505
Black Vermillion River Near Frankfort	4a	P	Atrazine	SC505
Horseshoe Creek Near Marysville	4a	R	Atrazine	SC717
Horseshoe Creek Near Marysville	4a	R	E. coli	SC717
North Elm Creek Near Oketo	4a	P	Atrazine	SC731
Centralia Lake	4a	L	pH	LM073701
Centralia Lake	4a	L	Eutrophication	LM073701
Centralia Lake	4a	L	Aquatic Plants	LM073701
Big Blue River Near Blue Rapids	4a	P	Atrazine	SC240
Big Blue River Near Blue Rapids	4a	P	E. coli	SC240

Lower Little Blue				
HUC8: 10270207				
TMDLs - Category 4a				
Waterbody Name	CATEGORY	SITE_TYPE	IMPAIRMENT	STATION
Washington Co. SFL	4a	L	Aquatic Plants	LM010901
Washington Co. SFL	4a	L	Dissolved Oxygen	LM010901
Washington W.A.	4a	W	Eutrophication	LM010941
Washington W.A.	4a	W	Siltation	LM010941
Lake Idlewild	4a	L	Eutrophication	LM061201
Little Blue River Near Hollenberg	4a	P	E. coli	SC232
Little Blue River Near Hollenberg	4a	P	Atrazine	SC232
Mill Creek Near Hanover	4a	P	E. coli	SC507
Mill Creek Near Hanover	4a	P	Atrazine	SC507
Rose Creek Near Narka	4a	R	Atrazine	SC712
Little Blue River Near Waterville	4a	P	E. coli	SC741
Little Blue River Near Waterville	4a	P	Atrazine	SC741

Kansas Delistings

Lower Big Blue				
HUC8: 10270205				
Delistings - Category 2				
Waterbody Name	CATEGORY	SITE_TYPE	IMPAIRMENT	STATION
Centralia Lake	2	L	Atrazine	LM073701
Big Blue River Near Oketo	2	P	Copper	SC233
Big Blue River Near Oketo	2	P	Lead	SC233
Big Blue River Near Blue Rapids	2	P	Lead	SC240
Big Blue River Near Blue Rapids	2	P	Berylium	SC240
Black Vermillion River Near Frankfort	2	P	Lead	SC505
Black Vermillion River Near Frankfort	2	P	Copper	SC505
Horseshoe Creek Near Marysville	2	R	Copper	SC717
Horseshoe Creek Near Marysville	2	R	Total Suspended Solids	SC717
Horseshoe Creek Near Marysville	2	R	Lead	SC717

Lower Little Blue				
HUC8: 10270207				
Delistings - Category 2				
Waterbody Name	CATEGORY	SITE_TYPE	IMPAIRMENT	STATION
Little Blue River Near Hollenberg	2	P	Lead	SC232
Mill Creek Near Hanover	2	P	Lead	SC507
Mill Creek Near Hanover	2	P	Copper	SC507
Rose Creek Near Narka	2	R	Lead	SC712
Rose Creek Near Narka	2	R	Copper	SC712
Rose Creek Near Narka	2	R	Total Suspended Solids	SC712
Little Blue River Near Waterville	2	P	Copper	SC741
Little Blue River Near Waterville	2	P	Lead	SC741

Kansas TMDL Development Schedule:

In accordance with the *Kansas TMDL Prioritization Framework*, Kansas has chosen to address excessive nutrients in state waters through a strategy of load reduction ahead of pursuing numeric nutrient criteria. This strategy is being implemented with the development of nutrient TMDLs, which primarily address Total Phosphorus stream impairments in the highest priority HUC 8s in the state. There are 16 HUC8s that were designated as top priority for 303(d) purposes addressing nutrient impairments, with the Lower Big Blue HUC8 being designated within these top priority HUC8s.

Total Phosphorus TMDLs are scheduled for development in 2019 to address nine TP impaired stations and contributing areas above Tuttle Creek Lake, covering 65 stream segments.

TMDLs Scheduled for development in 2019 in Lower Big Blue and Lower Little Blue watersheds:

Waterbody Name	CATEGORY	SITE_TYPE	IMPAIRMENT	STATION	Stream Segments
Big Blue River Near Oketo	5	P	Total Phosphorus	SC233	3
Black Vermillion River Near Frankfort	5	P	Total Phosphorus	SC505	19
Horseshoe Creek Near Marysville	5	R	Total Phosphorus	SC717	5
North Elm Creek Near Oketo	5	P	Total Phosphorus	SC731	1
Robidoux Creek near Frankfort	5	R	Total Phosphorus	SC754	3
Big Blue River Near Blue Rapids	5	P	Total Phosphorus	SC240	14
Little Blue River Near Hollenberg	5	P	Total Phosphorus	SC232	5
Rose Creek Near Narka	5	R	Total Phosphorus	SC712	1
Little Blue River Near Waterville	5	P	Total Phosphorus	SC741	14

Current Kansas TMDL Activities:

Kansas submitted Total Phosphorus TMDLs for the Kansas River to EPA for approval at the beginning of 2017, which were approved at the end of CY2017. Tuttle Creek Lake releases and water quality served as a major component of the Kansas River TMDLs. Ultimately, the existing eutrophication TMDLs associated with Tuttle Creek Lake and other reservoirs contributing significant flow to the Kansas River (Milford and Perry Lakes) are key to achieving the endpoints of the Kansas River TMDLs.

Kansas is preparing to submit a suite of TP TMDLs for the Arkansas River from Hutchinson to Arkansas City, along with a Nitrate TMDL focused on the Arkansas River near Wichita. 2018 TMDL development activities are focused in the Smoky Hill-Saline River Basin with TP TMDLs for the Smoky Hill River near Salina and Junction City. TP TMDLs are additionally being developed for impaired tributaries of the Smoky Hill River along with a Nitrate TMDL on the Smoky Hill near Salina.

Kansas will be developing TP TMDLs above Tuttle Creek Lake, Milford Lake, and Perry Lake in 2019.

Tuttle Creek Lake Chlorophyll-*a* Water Quality Standard

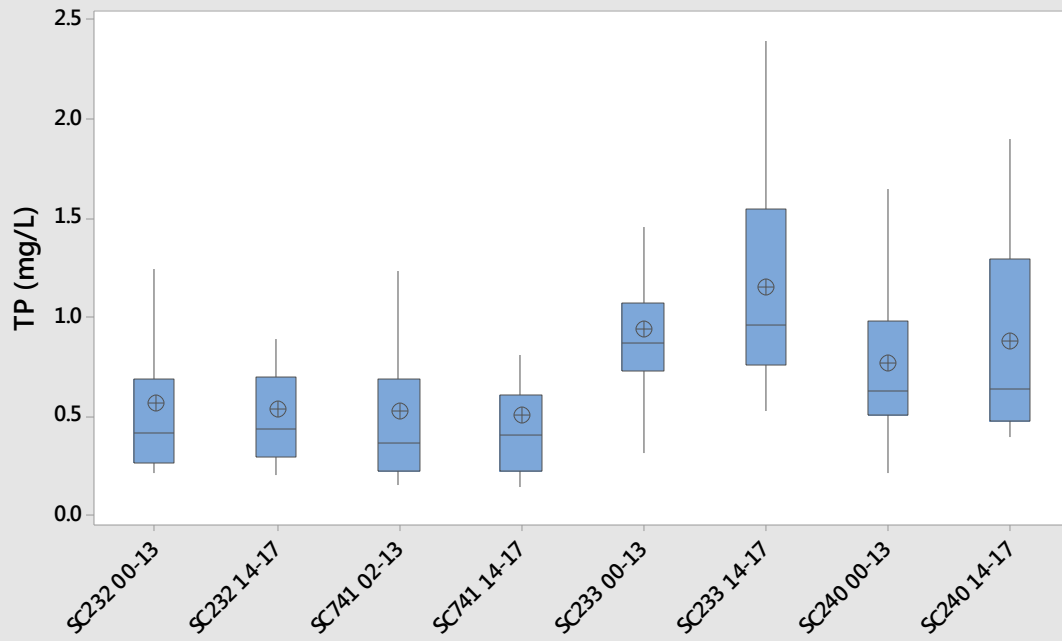
EPA recently approved the chlorophyll *a* water quality standard of 10 µg/L for Tuttle Creek Lake. The approval came on March 29, 2017 as part of the approval of 81 site-specific chlorophyll-*a* criteria established for the protection of the domestic water supply use for Kansas Lakes serving as primary or secondary public water supply lakes.

Kansas Water Quality Summary:

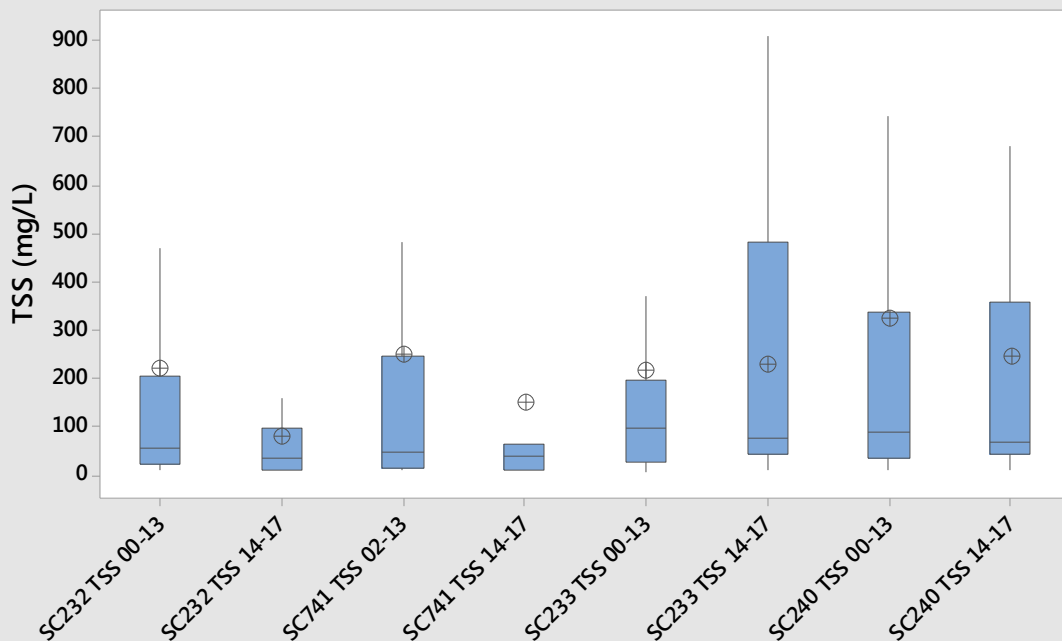
Kansas Lower Blue River Watershed Data Summary for Total Phosphorus (TP) and Total Suspended Solids (TSS):

Station	Waterbody	Period of Record	TP Avg	TP Median	TP Max		TSS Avg	TSS Median	TSS Max
SC233	Big Blue R near Oketo	2000-2013	0.937	0.866	2.648		215.7	97.5	1590
		2014-2017	1.15	0.97	2.4		229	76.5	910
SC240	Big Blue R near Blue Rapids	2000-2013	0.764	0.623	1.843		321.9	91	2052
		2014-2017	0.875	0.635	1.9		245.5	69.5	1000
SC502	Fancy Cr near Randolph	2000-2009	0.27	0.214	1.025		58.6	32	464
		2013-2017	0.225	0.089	1.21		202.75	11	1510
SC505	Black Vermillion R near Frankfort	2000-2013	0.351	0.26	2.84		188.7	44	5130
		2014-2017	0.413	0.23	2		205.69	33.5	1600
SC717	Horseshoe Cr near Marysville	1998-2013	0.378	0.249	1.35		111.5	21.5	624
		2017	0.108	0.099	0.15		11	10.5	13
SC731	North Elm Cr near Oketo	2001-2011	0.243	0.207	0.822		71.5	23	720
		2013-2017	0.157	0.18	0.39		17.7	15	27
SC754	Robidoux Cr near Frankfort	2009-2013	0.29	0.256	0.594		58.9	27	266
		2017	0.243	0.27	0.28		31.25	31	48
SC232	Little Blue R near Hollenberg	2000-2013	0.565	0.417	3.43		221.2	56.5	4160
		2014-2017	0.536	0.435	1.7		78.19	38	530
SC507	Mill Cr near Hanover	2000-2013	0.32	0.197	1.36		165.9	52	1780
		2014-2017	0.297	0.15	1.7		168.2	28	2000
SC712	Rose Cr near Narka	1997-2009	0.739	0.407	5.35		252.2	21	3210
		2013-2017	0.504	0.425	1.03		35.75	10	147
SC741	Little Blue R near Waterville	2002-2013	0.52	0.361	1.76		249.2	47	1970
		2014-2017	0.506	0.41	1.5		150.76	40	1300

Total P Concentrations in Blue R Watershed - KS



TSS Concentrations in the Blue R Watershed - KS



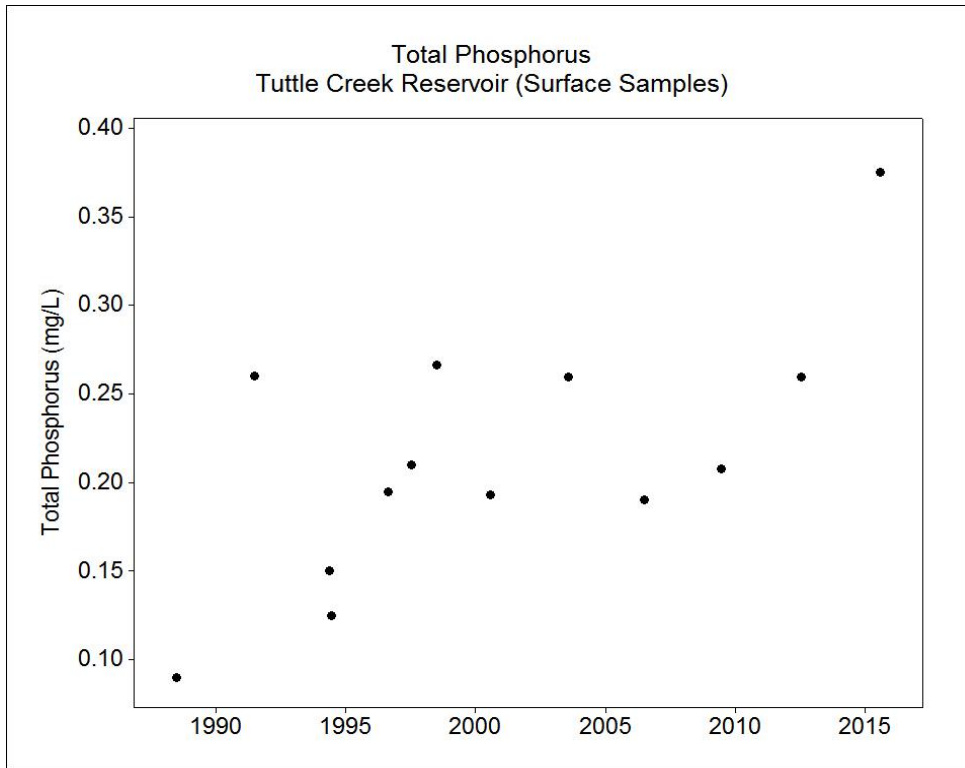
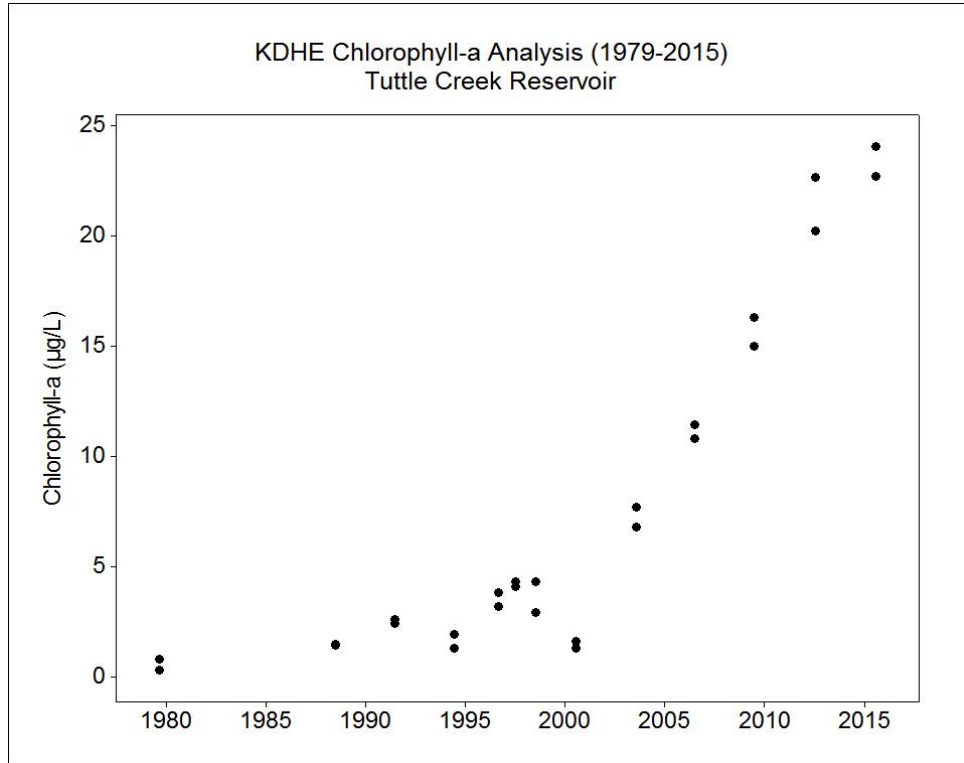
Lower Blue River Watershed Atrazine Data Summary for all samples:

Station	Waterbody	Period of Record	Number of Atrazine Samples	Number of Samples > 3 ppb	% of Samples > 3ppb
SC233	Big Blue R near Oketo	2000-2013	37	6	16.22
		2014-2017	12	2	16.67
SC240	Big Blue R near Blue Rapids	2000-2013	38	8	21.05
		2014-2017	12	1	8.33
SC502	Fancy Cr near Randolph	2000-2009	11	2	18.18
		2013-2017	4	0	0.00
SC505	Black Vermillion R near Frankfort	2000-2013	39	5	12.82
		2014-2017	12	1	8.33
SC717	Horseshoe Cr near Marysville	1998-2013	12	4	33.33
		2017	3	0	0.00
SC731	North Elm Cr near Oketo	2001-2009	23	6	26.09
		2011-2013	10	2	20.00
SC754	Robidoux Cr near Frankfort	2009-2017	9	1	11.11
SC232	Little Blue R near Hollenberg	2000-2013	37	7	18.92
		2014-2017	14	1	7.14
SC507	Mill Cr near Hanover	2000-2013	36	8	22.22
		2014-2017	11	1	9.09
SC712	Rose Cr near Narka	1997-2009	12	5	41.67
		2013-2017	5	0	0.00
SC741	Little Blue R near Waterville	2002-2013	30	6	20.00
		2014-2017	12	2	16.67

Lower Blue River Watershed Atrazine Data Summary for April-July Samples:

Station	Waterbody	Period of Record	April-July Number of Atrazine Samples	April-July Number of Samples > 3 ppb	April-July % of Samples > 3ppb
SC233	Big Blue R near Oketo	2000-2013	12	6	50.00
		2014-2017	4	2	50.00
SC240	Big Blue R near Blue Rapids	2000-2013	12	8	66.67
		2014-2017	4	1	25.00
SC502	Fancy Cr near Randolph	2000-2009	3	2	66.67
		2013-2017	2	0	0.00
SC505	Black Vermillion R near Frankfort	2000-2013	10	5	50.00
		2014-2017	4	1	25.00
SC717	Horseshoe Cr near Marysville	1998-2013	4	3	75.00
		2017	1	0	0.00
SC731	North Elm Cr near Oketo	2001-2009	9	6	66.67
		2011-2013	3	2	66.67
SC754	Robidoux Cr near Frankfort	2009-2017	3	1	33.33
SC232	Little Blue R near Hollenberg	2000-2013	12	7	58.33
		2014-2017	5	1	20.00
SC507	Mill Cr near Hanover	2000-2013	12	7	58.33
		2014-2017	4	1	25.00
SC712	Rose Cr near Narka	1997-2009	4	4	100.00
		2013-2017	1	0	0.00
SC741	Little Blue R near Waterville	2002-2013	11	6	54.55
		2014-2017	4	2	50.00

Tuttle Creek Lake Water Quality Glance



Tuttle Creek WRAPs / 319 Nonpoint Source Program Update:

- **Streambank Projects on Big Blue and Little Blue Rivers**
 - **2015: 11 sites completed accounting for reduction of 22,516 tons/year of sediment**
 - **2016 & 2017: 17 sites designed and constructed; reduction of 28,914 tons/year of sediment**
 - **Total project costs to date: ~\$2.5 million**
 - **Interagency project coordinated through Tuttle Creek WRAPs; 319 funded**
- **Tuttle Creek WRAPs:**
 - **Coordinator position is currently vacant**
 - **BMP focus**
 - **cover crops**
 - **livestock relocation**
 - **soil health**
 - **Aerial Assessments completed to reprioritize Livestock targeted areas**
 - **Reprioritized targeted area to cropland/winter feeding sites**
 - **Tuttle Creek WRAPs allocates \$100,000 per/year on BMP cost share**

Tuttle WRAPs Plan Update Summary (attached)

Kansas - NPDES Permitted Facilities

Lower Big Blue: 10270205								Nutrient Loading Potential
Permit Number	Facility Name	Facility Type	NPDES No.	Treatment Type	Design Flow	Receiving Stream	COUNTY	
M-BB13-0002	MARYSVILLE, CITY OF	MUNICIPAL	KS0092142	Lagoon Discharging	0.6	Big Blue R	Marshall	Yes
M-BB07-0001	FRANKFORT, CITY OF	MUNICIPAL	KS0024881	Lagoon Discharging	0.204	Black Vermillion R	Marshall	Yes
M-BB04-0001	BLUE RAPIDS, CITY OF	MUNICIPAL	KS0024775	Lagoon Discharging	0.16	Big Blue R	Marshall	Yes
M-BB05-0001	CENTRALIA, CITY OF	MUNICIPAL	KS0081418	Lagoon Discharging	0.0784	Black Vermillion River via Unnamed Tributary	Nemaha	Yes
M-BB01-0001	AXTELL, CITY OF	MUNICIPAL	KS0047228	Lagoon Discharging	0.0625	Big Blue R via North Fork Black Vermillion R	Marshall	Yes
M-BB18-0001	OLSBURG, CITY OF	MUNICIPAL	KS0093297	Lagoon Discharging	0.0304	Tuttle Cr Reservoir via Carnahan Cr via Booth Cr via Unnamed Trib	Pottawatomie	Yes
M-BB25-0004	UNIVERSITY PARK	MUNICIPAL	KS0079243	Mechanical	0.03	Tuttle Cr Reservoir	Riley	Yes
M-BB19-0001	RANDOLPH, CITY OF	MUNICIPAL	KS0031721	Lagoon Discharging	0.024	Tuttle Cr Reservoir Via Fancy Cr via Unnamed Trib	Riley	Yes
M-BB23-0001	SUMMERFIELD, CITY OF	MUNICIPAL	KS0025500	Lagoon Discharging	0.0217	Black Vermillion River via Robidoux Creek	Marshall	Yes
M-BB03-0001	BEATTIE, CITY OF	MUNICIPAL	KS0047236	Lagoon Discharging	0.0215	Robidoux Cr via Wolf Cr	Marshall	Yes
M-BB20-0001	VERMILLION, CITY OF	MUNICIPAL	KS0085529	Lagoon Discharging	0.021	Black Vermillion River	Marshall	Yes
M-BB27-0001	HOME CITY SEWER DIS. 1 - MARSHALL CO.	MUNICIPAL	KS0095435	Lagoon Discharging	0.02	Big Blue River via Spring Creek via Unnamed Tributary	Marshall	Yes
M-BB26-0002	BAILEYVILLE IMPROVEMENT DISTRICT #1	MUNICIPAL	KS0081442	Lagoon Discharging	0.0178	Black Vermillion R via N Fork Black Vermillion R via Unnamed Trib	Nemaha	Yes
M-KS79-0001	WHEATON, CITY OF	MUNICIPAL	KS0094013	Lagoon Discharging	0.016	Clear Fork of the Black Vermillion River	Pottawatomie	Yes
M-BB25-0005	TERRA HEIGHTS - RILEY CO.	MUNICIPAL	KS0086118	Lagoon Discharging	0.0135	Big Blue R via Unnamed Trib	Riley	Yes
I-BB07-PO02	FRANKFORT GROUNDWATER REMEDIATION	INDUSTRIAL	KS0099104	Mechanical	0.101	Black Vermillion River via Little Timber Cr via Unnamed Trib	Marshall	No
I-BB07-PO03	FRANKFORT, CITY OF -PWS #4 SOURCE WATER	INDUSTRIAL	KS0099775	Mechanical	0.036	Timber Cr via Unnamed Trib	Marshall	No
I-BB04-PO01	GP INDUSTRIAL PLASTERS - BLUE RAPIDS	INDUSTRIAL	KS0002135	Mechanical		Big Blue R via Unnamed Trib	Marshall	No
I-BB07-PO01	HAMM - LILLIS-GARDNER QUARRY #115	INDUSTRIAL	KS0098094	Quarry		Tuttle Cr Reservoir via Black Vermillion R via Clear Fk Cr	Marshall	No
I-BB19-PO04	BAYER CONSTRUCTION- STEVENS QUARRY	INDUSTRIAL	KS0098078	Quarry		Big Blue R via Tuttle Creek Reservoir via Mill Cr via unnamed tributary	Riley	No
I-BB13-PR01	MARYSVILLE READY MIX CO., INC.	INDUSTRIAL	KSG110114	Ready Mix		Lilly Creek via Unnamed Trib	Marshall	No
C-BB25-0004	ROCKY FORD TRAILER COURT	COMMERCIAL	KS0079201	Lagoon Discharging	0.0163	Big Blue R via Cedar Cr	Pottawatomie	Yes
M-BB25-NO05	RILEY COUNTY SD - LONGHORN SUBDIVISION	MUNICIPAL	KSJ000622	Lagoon Nondischarging			Riley	No
M-KS38-NO01	KDWP&T - TUTTLE CREEK (RIVER POND AREA)	MUNICIPAL	KSJ000405	Lagoon Nondischarging			Riley	No
I-KS38-CO01	MCCALL PATTERN COMPANY, INC	INDUSTRIAL	KS0091286	Lagoon Nondischarging			Riley	No
C-BB18-NO01	LIVING WATERS RANCH	COMMERCIAL	KSJ000590	Lagoon Nondischarging			Pottawatomie	No
C-BB18-NO02	BROKEN ARROW RANCH	COMMERCIAL	KSJ000591	Lagoon Nondischarging			Pottawatomie	No
C-BB25-NO02	LAKESIDE ASSOCIATION	COMMERCIAL	KSJ000592	Lagoon Nondischarging			Riley	No
C-KS38-NO09	TUTTLE TERRACE TRAILER COURT	COMMERCIAL	KSJ000576	Lagoon Nondischarging			Riley	No
C-KS62-NO01	SEDALIA MOBILE HOME COURT	COMMERCIAL	KSJ000201	Lagoon Nondischarging			Riley	No

Lower Little Blue: 10270207								Nutrient Loading Potential
Permit Number	Facility Name	Facility Type	NPDES No.	Treatment Type	Design Flow	Receiving Stream	COUNTY	
M-BB21-0001	WASHINGTON, CITY OF	MUNICIPAL	KS0089991	Lagoon Discharging	0.18	Mill Creek via Plum Creek	Washington	Yes
M-BB22-0001	WATERVILLE, CITY OF	MUNICIPAL	KS0048429	Lagoon Discharging	0.0925	Little Blue River	Marshall	Yes
M-BB06-0001	CUBA, CITY OF	MUNICIPAL	KS0027120	Lagoon Discharging	0.024	South Fork Mill Creek	Republic	Yes
M-BB10-0002	HANOVER, CITY OF	MUNICIPAL	KS0095745	Lagoon Discharging	0.08	Little Blue R	Washington	Yes
M-BB08-0001	GREENLEAF, CITY OF	MUNICIPAL	KS0048411	Lagoon Discharging	0.072	Coon Creek via Unnamed Tributary	Washington	Yes
IA27:L27-BB22-PO01	OR-AL QUARRIES, INC - HANOVER QUARRY	INDUSTRIAL	KS0095125	Quarry		Tuttle Cr Reservoir via Little Blue R via Fawn Cr	Marshall	No
I-BB21-PR01	MIDWEST PRODUCTS - WASHINGTON PLANT	INDUSTRIAL	KSG110133	Ready Mix		Ashe Cr via Unnamed Trib	Washington	No
I-BB10-PR01	MIDWEST PRODUCTS - HANOVER PLANT	INDUSTRIAL	KSG110131	Ready Mix		Little Blue River via Cottonwood Cr via Unnamed Trib	Washington	No
M-BB16-NO01	NARKA, CITY OF	MUNICIPAL	KSJ000430	Lagoon Nondischarging			Republic	No
M-BB24-NO01	CHESTER (NE), VILLAGE OF	MUNICIPAL	KSJ000202	Lagoon Nondischarging			Republic	No
M-BB15-NO01	MUNDEN, CITY OF	MUNICIPAL	KSJ000429	Lagoon Nondischarging			Republic	No
M-BB12-NO01	MAHASKA, CITY OF	MUNICIPAL	KSJ000427	Lagoon Nondischarging			Washington	No
M-BB14-NO01	MORROWVILLE, CITY OF	MUNICIPAL	KSJ000428	Lagoon Nondischarging			Washington	No
M-BB09-NO01	HADDAM, CITY OF	MUNICIPAL	KSJ000665	Lagoon Nondischarging			Washington	No
M-BB02-NO01	BARNES, CITY OF	MUNICIPAL	KSJ000436	Lagoon Nondischarging			Washington	No
M-BB22-NO01	USD #498 VALLEY HEIGHTS	MUNICIPAL	KSJ000431	Lagoon Nondischarging			Marshall	No
C-BB10-NO01	PONY EXPRESS SERVICE CENTER	COMMERCIAL	KSJ000589	Lagoon Nondischarging			Washington	No

Tuttle Creek Reservoir – Lower Big Blue River and Lower Little Blue River Watersheds

9 Element Watershed Plan Overview

Directly addressing High Priority TMDLs for:

- Bacteria – Big Blue River above Tuttle Creek
- Bacteria- Little Blue River
- Bacteria – Black Vermillion River
- Atrazine – Tuttle Creek Lake Watershed
- Atrazine – Tuttle Creek Lake and Watershed
- Atrazine – Tuttle Creek Lake
- Siltation – Tuttle Creek Lake
- Eutrophication – Tuttle Creek Lake

Directly addressing many 303d listed impairments throughout the project area for Phosphorus, Total Suspended Solids, and pH

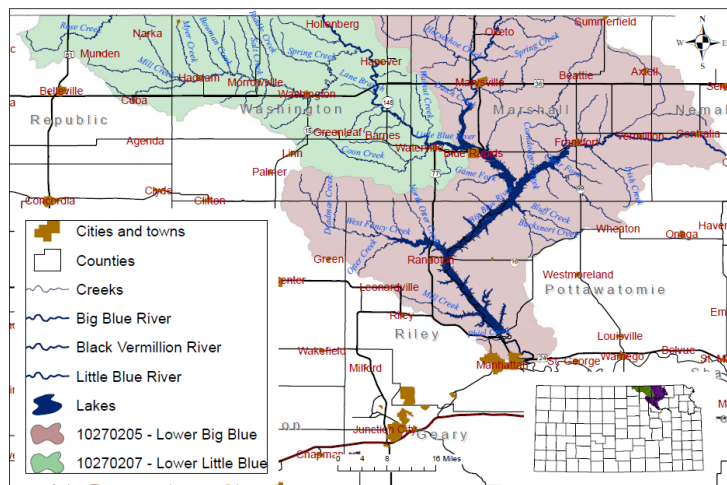
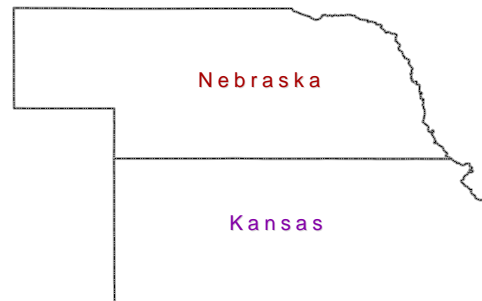
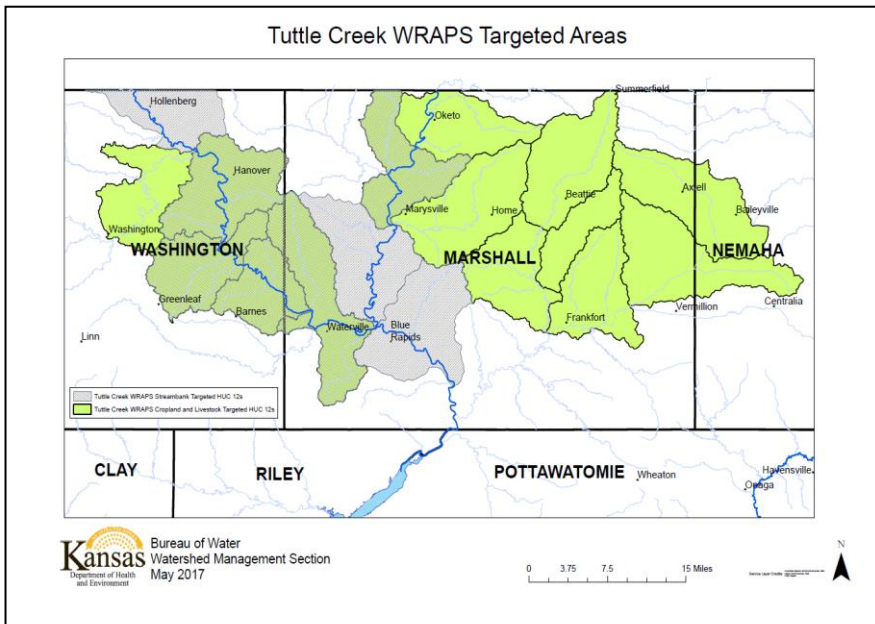


Figure 1. Map of Lower Big Blue/Lower Little Blue Rivers Watershed.

Targeting Determinations



- Cropland BMP Targeted areas were identified through SWAT (Soil and Water Assessment Tool) modeling to determine areas of high overland runoff contributing sediment and nutrients to the watershed and Tuttle Creek Lake.
- Livestock BMP Targeted areas were identified through analysis of Aerial Assessments, Stakeholder Input, and correlation with SWAT identified areas for high phosphorus runoff potential and the locations of existing High Priority Bacteria TMDLs.
- Streambank Targeted areas were identified through GIS analyses of the main stem of the Big Blue and Little Blue Rivers targeting

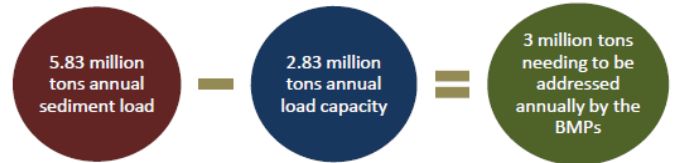
Best Management Practices and Load Reduction Goals

Best Management Practices (BMPs) to address nutrients, sediment, atrazine, and bacteria in the watershed were chosen by the SLT based on local acceptance/adoption rate and amount of load reduction gained per dollar spent.

Sediment Reducing Cropland

- Buffers
- Continuous No-till
- Cover Crops
- Grassed Waterways
- Streambank Stabilization
- Terraces

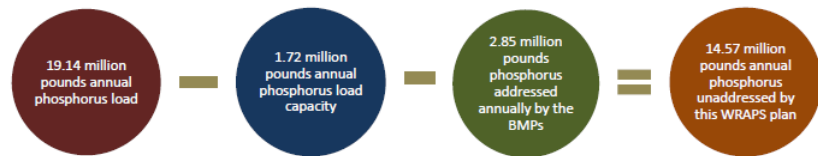
The total load reduction needed to meet the sediment TMDL is 3,000,000 tons of sediment.



Phosphorus Reducing Cropland, Streambank and Livestock BMPs:

- Buffers
- Continuous No-till
- Cover Crops
- Nutrient Management Plans
- Grassed Waterways
- Streambank Stabilization
- Terraces
- Relocation of small feeding operations away from streams
- Relocation of pasture feeding sites away from streams
- Extended Grazing via cover crops
- Promotion of alternative watering sites away from streams

A 95% reduction would be needed to meet the TMDL. At the end of this forty year plan, if all BMPs have been implemented, 2,850,393 pounds will have been reduced from the watershed.



Atrazine Reducing Cropland BMPs:

- Promotion of the Use of Alternative Herbicides
- Vegetative Buffers
- Split Application
- Apply before April 15

The current estimated pollutant load for atrazine is 63,145 pounds in the months of May and June in Tuttle Creek Lake. The load needs to be reduced by 55,883 pounds to meet the TMDL.



Bacteria Reducing Livestock BMPs:

- Vegetative filter strips between small feeding operations and streams
- Relocation of small feeding operations away from streams
- Relocation of pasture feeding sites away from streams
- Extended Grazing via cover crops
- Promotion of alternative watering sites away from streams

APPENDIX

APPENDIX “A”

**RULES AND REGULATIONS
OF THE
KANSAS-NEBRASKA BIG BLUE RIVER COMPACT ADMINISTRATION**

PREAMBLE

Pursuant to Article III (3.4) of the Kansas-Nebraska Big Blue River Compact, these rules and regulations were adopted by the Kansas-Nebraska Big Blue River Compact Administration on the 24th day of April, 1973. Pursuant to Article VI.2 of these rules, Article II.5 and Article IV.8 were amended May 18, 2008, Article VII.2 was amended on May 19, 2010, and Article VII.4 and Article VIII.2 were amended on May 18, 2011; these amendments were integrated into the rules and the rules readopted on May 18, 2011. They are, namely:

**ARTICLE I
THE ADMINISTRATION**

1. The administration shall be that interstate administrative agency referred to in Article III (3.1) of the Kansas-Nebraska Big Blue River Compact.
2. The administration shall be composed of one ex officio Member and one advisory Member from each State plus a Federal Member to be appointed by the President of the United States if he so desires.
3. The credentials of each Member shall be filed with the Secretary of the Administration.
4. Each Member shall advise in writing the Secretary of the Administration as to his or her address to which all official notices and other communications of the Administration shall be sent and shall further promptly advise in writing the Secretary of the Administration as to any changes of such address.
5. Each ex officio Member shall advise in writing the Secretary of the Administration as to the person designated as his or her representative.

ARTICLE II OFFICERS

1. The Officers of the Administration shall be:

Chair

Vice-Chair

Secretary

Treasurer

2. The Federal Member representing the United States shall be the Chair of the Administration. If no Federal representative is appointed, an ex officio Member of the Administration shall be selected by the Administration to serve as Chair for a term ending June 30 of even numbered years. The Chair shall preside at the meetings of the Administration. His or her duties shall be such as are usually imposed upon such officer and such other additional duties as may be assigned to him or her by the Administration.

3. The Vice-Chair shall be an ex officio Member of the Administration. The Vice-Chair shall be selected by the Administration for a term ending on June 30 of even numbered years. The Vice-Chair shall perform all duties of the Chairman when the latter is unable for any reason to act or when there is a vacancy in the office of the Chairman.

4. The Secretary shall be selected by the Administration and shall serve at the pleasure of the Administration and receive such salary and perform such duties as the Administration may direct. The Secretary need not but may be a Member of the Administration.

5. The Treasurer shall be selected by the Administration and shall serve at the pleasure of the Administration. The Treasurer need not but may be a Member of the Administration. The Treasurer shall receive, hold and disburse funds and keep records of all funds of the Administration. The Treasurer shall furnish a bond for the faithful performance of his or her duties in an amount satisfactory to the Administration. The cost of such bond shall be paid by the Administration. If the Treasurer is an employee of the agency charged with the duty of administering the laws of his or her state pertaining to water rights, the bond may be waived by approval of both ex officio members.

6. In the case of vacancy in either of the Offices of Secretary or Treasurer, the Administration shall proceed as expeditiously as possible to select a new Secretary or Treasurer for their respective offices.

7. The Offices of Secretary and Treasurer may be held by the same person.

ARTICLE III
PRINCIPAL OFFICE

1. The principal office of the Administration shall be the office of the Secretary unless otherwise designated by the Administration.
2. The principal office shall be open for business at such hours and on such days as the Administration may direct.
3. All books and records of the Administration shall be kept in the principal office of the Administration and shall be open to inspection by the public during the hours the principal office is open for business.

ARTICLE IV
MEETINGS

1. The annual meeting of the Administration shall be held during the month of May of each year upon call of the Chair.
2. Meetings of the Administration shall be held at such places as the Administration may designate.
3. Special meetings of the Administration shall be called by the Chair upon written request of the ex officio Member of either of the signatory States setting forth the matters to be considered at such special meetings.
4. Notice of all special meetings of the Administration shall be sent by the Secretary to all members of the Administration by mail at least ten (10) days in advance of each meeting and such notice shall state the purpose thereof.
5. Minutes of the Administration shall be preserved in a suitable manner. Unapproved minutes shall not be official and shall be furnished only to Members of the Administration, its employees and committees. Distribution of the officially approved minutes shall be made by the Secretary as directed by the Administration.
6. A meeting quorum shall consist of the ex officio Members from both States, or their designated representatives.
7. Each State shall have but one vote which shall be cast by the ex officio Member or, in his or her absence, by his or her designated representative. The Federal Member representing the United States shall not have the right to vote.

8. All actions of the Administration must be approved by both ex officio Members or their representatives. Both ex officio Members, or designated representatives, must execute documents binding the Administration to actions approved by the Administration.

9. At each meeting of the Administration, the order of business, unless agreed otherwise, shall, be as follows:

Call to Order;
Introductions and Announcements;
Reading of the Minutes of the Last Meeting;
Correction and Approval of Minutes of the Last Meeting;
Report of Chair;
Reports of Other Members;
Report of Secretary;
Report of Treasurer;
Reports of Committees;
Unfinished Business;
New Business;
Adjournment.

10. All meetings of the Administration, except executive sessions, shall be open to the public. Executive sessions shall be open only to Members of the Administration and such advisors as may be designated by each ex officio Member, and to such employees and others as may be permitted by the Administration.

11. Any meeting of the Administration may be recessed from the time and place set for the meeting to another time and place at the discretion of the Administration.

ARTICLE V **COMMITTEES**

1. There shall be the following standing committees:

Engineering Committee;
Legal Committee;
Budget Committee.

2. The standing committees shall have the following respective duties:

- (a) The Engineering Committee shall advise the Administration on all engineering matters which may be referred to such committee by the Administration.
- (b) The Legal Committee shall advise the Administration on all legal matters which may be referred to such committee by the Administration.

- (c) The Budget Committee shall prepare the annual budget and advise the Administration on all fiscal matters which may be referred to such committee by the Administration.

3. Members of standing committees may or may not be Members of the Administration. The number of Members of each standing committee shall be determined by the Administration. The ex officio Member from each State shall name the Member or Members representing that State to serve on each standing committee.

4. The Administration may create special committees to perform such tasks as the Administration may determine.

5. The Chair of each committee shall be designate from the committee membership by the Administration.

6. Formal committee reports shall be made in writing and filed with the Administration.

ARTICLE VI **RULES AND REGULATIONS**

1. Rules and regulations of the Administration may be compiled and copies may be prepared for distribution to the public under such terms and conditions as the Administration may prescribe.

2. Amendments to the rules and regulations, or any changes in them, may be made at any annual meeting of the Administration; Provided, that all such proposed amendments or changes shall be mailed to each Member of the Administration at least fifteen (15) days prior to the date of the meeting.

ARTICLE VII **FISCAL**

1. All funds of the Administration shall be received by the Treasurer and deposited by him or her in a depository, or depositories, designated by the Administration under the name of the Kansas-Nebraska Big Blue River Compact Administration Fund which shall be initiated and maintained by equal payments of each State into the fund.

2. Disbursements of Administration funds shall be made by checks signed by the Treasurer or the Treasurer's designee upon vouchers approved by the Budget Committee Chair. The Treasurer's designation must be made in a writing provided to the Administration.

3. The Administration shall adopt and transmit annually to the Governors of the two States a budget covering anticipated expenses for the following fiscal year and the equal amounts payable by each State.

4. All receipts and disbursements of the Administration shall undergo a review examination by a certified public accountant to be selected by the Administration. The review examination report shall be included and become a part of the annual report of the Administration.

5. The Treasurer shall prepare and keep an up-to-date inventory of all the property of the Administration.

6. The fiscal year of the Administration shall begin July 1 of each year and end June 30 of the next succeeding year.

ARTICLE VIII **ANNUAL REPORT**

1. The Administration, following the annual meeting, shall make and transmit to the Governors of the States of Kansas and Nebraska and to the President of the United States a report covering the activities of the Administration for the fiscal year.

2. The annual report shall include, among other things, the following:

- (a) The anticipated budget of the Administration;
- (b) The receipts and expenditures of the funds of the Administration;
- (c) The report of the annual review of the Kansas-Nebraska Big Blue River Compact Administration Funds;
- (d) Hydrologic data which the Administration deems pertinent;
- (e) Statements as to cooperative studies of water supplies and other hydrologic investigations made during the preceding year;
- (f) Findings of facts made by the Administration during the preceding year;
- (g) Other pertinent matters as the Administration may direct.

ARTICLE IX **MISCELLANEOUS**

1. The Administration shall on request make available to the Governor of each of the State of Kansas and Nebraska any information within the Administration's possession at any time, and shall provide free access to its records by the Governors of each State, or their representatives, or authorized representatives of the United States.

2. The cost of furnishing available information which is in the Administration's possession shall be paid by the person seeking it at such rates as may be fixed by the Administration. Available information requested by the Governor of each of the States of Kansas

and Nebraska, or by authorized representatives of the United States, shall be supplied without charge.

ARTICLE X **HEARINGS**

1. The Administration may hold hearings, and take testimony and receive evidence at such times and places that it deems necessary. Such hearings may be held to determine violations of the Kansas-Nebraska Big Blue River Compact or to collect, analyze and report on data as to stream flows, conservation storage, and such other information as is necessary for the proper administration of the Compact. Such hearings may also be conducted for the purpose of securing information, suggestions, estimates and statistics as the Administration may need or believe to be useful for carrying out its functions. All reasonable notices of such hearings shall be given in manner determined by the Administration.

ARTICLE XI **FINDINGS**

1. When the Administration finds, as a result of a hearing, that a violation of the Kansas-Nebraska Big Blue River Compact has occurred, the ex officio Member of the State or States in which the violation has occurred shall take the action necessary to correct the violation.

2. In the case of a hearing held to collect, analyze and report on data as to stream flows, conservation storage, and such other information as is necessary for the proper administration of the Compact, and the gathering of information, suggestions, estimates and statistics as it may need or believe to be useful for carrying out its functions, the information obtained at the hearing, together with the Administration's final determination, shall be forwarded to the proper agencies of each State, and a copy shall also be maintained in the office of the Administration. Said final determination may include suggestions to the various State agencies as to action which could be taken to aid in the enforcement of this Compact.

ARTICLE XII **PUBLICITY**

1. When directed by the Administration, the Chair, prior to the close of any meeting, shall draft a press release and submit it to the Administration for approval. All releases approved by the Administration may be made available to the press by any Member.

2. All other press releases that do not pertain to actions by the Administration may be released by and through the Chair.

These rules were last amended and approved by the Administration at the 2014 annual meeting.