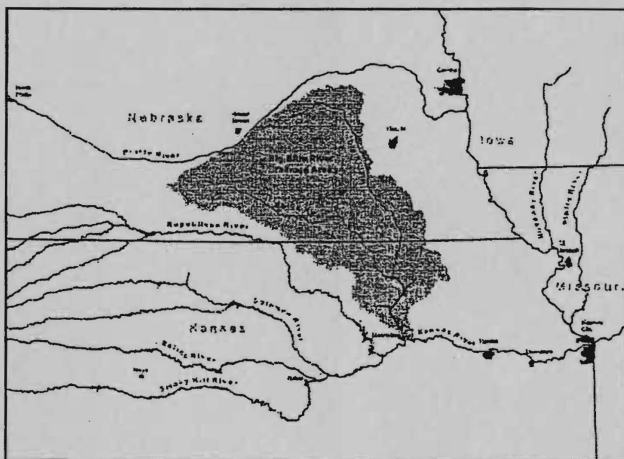


KANSAS-NEBRASKA BIG BLUE RIVER COMPACT

THIRTY-EIGHTH ANNUAL REPORT



FISCAL 2011

Marysville, Kansas
May 18, 2011

**KANSAS – NEBRASKA BIG BLUE RIVER
COMPACT ADMINISTRATION**

June 22, 2012

The Honorable Barack H. Obama
President of the United States of America

The Honorable Sam Brownback
Governor of Kansas

The Honorable Dave Heineman
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 Thirty-Eighth Annual Report. The report covers the activities of the Administration of the compact for the Fiscal Year 2011.

Respectfully,



Gary R. Mitchell
Compact Chairman

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Sam Brownback, Governor

April 14, 2011

Gary Mitchell, Chairman
Kansas-Nebraska Big Blue River Compact
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Kansas-Nebraska Big Blue River Compact
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2051 20th Road
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Kenneth Reiger, Nebraska Advisor
Kansas-Nebraska Big Blue River Compact
215 Donegal
Aurora, NE 68818

Dear Compact Members:

Kansas is hosting the annual meeting of the Big Blue River Compact Administration on May 18th, 2011 at 9:30 a.m. The meeting will be held at the City Hall in Marysville, Kansas located at 209 N. Eighth Street.

Due to another commitment, I will not be able to attend the meeting this year. Assistant Chief Engineer, Paul Graves, will be attending on my behalf.

A tentative agenda has been included with this meeting notice. If there is anyone who did not receive a copy of this letter who you believe should be aware of the meeting, please inform them.

Sincerely,

David W. Barfield, P.E.
Chief Engineer

PC: Andrea Kessler, Keith Paulsen, Pat Rice, Annette Kovar, Rich Reiman, Will Myers, Dan Howell, Tom Stiles, Katie Tietsort, Burke Griggs, Paul Graves, John Turnbull, Dave Clabaugh, Daryl Anderson, Mike Onnen, Jason Lambrecht



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April 14, 2011

Mr. Gary Mitchell, Chairman
Kansas-Nebraska Big Blue Compact Administration
325 2600 Avenue
Solomon, Kansas 67480

Dear Mr. Mitchell:

Due to an unavoidable conflict, I will be unable to attend the annual meeting of the Kansas-Nebraska Big Blue River Compact Administration scheduled on May 18, 2011 in Marysville, Kansas. I apologize for the short notice; however, this conflict just recently presented itself.

Therefore, I hereby appoint Mr. Paul Graves, Assistant Chief Engineer of the Kansas Department of Agriculture's Division of Water Resources, to act on my behalf at the 2011 annual meeting in accordance with Article III, section 3.2 of the Compact.

Best wishes for a successful meeting.

Sincerely,

David W. Barfield, P.E.
Chief Engineer

Kansas Commissioner, Big Blue River Compact

c: Brian Dunnigan
Kenneth Reiger
Sharon Schwartz
Bob Lytle

**KANSAS – NEBRASKA BIG BLUE RIVER COMPACT ADMINISTRATION
38TH ANNUAL MEETING**

May 18, 2011
9:30 a.m.
Marysville City Hall
209 N. Eighth Street
Marysville, KS

AGENDA

1. Call to Order
2. Introductions and Announcements
3. Minutes of the 37th Annual Meeting
4. Chairman's Report
5. Nebraska Report
6. Kansas Report
7. Secretary's Report
8. Treasurer's Report
9. Committee Reports
 - a) Legal
 - b) Engineering
 - c) Budget
 - d) Water Quality
10. USGS
11. Old Business
12. New Business
13. Adjourn

**MINUTES OF THE 38TH ANNUAL MEETING
OF THE
KANSAS-NEBRASKA BIG BLUE RIVER COMPACT ADMINISTRATION**

Call to Order

The Thirty-eighth annual meeting of the Kansas-Nebraska Big Blue River Compact Administration was held on May 18, 2011 in the offices of the City Hall, Marysville, Kansas. The meeting was called to order at 9:35 am by Compact Chairman, Gary Mitchell. Mr. Mitchell introduced himself and suggested that those in attendance introduce themselves.

Introductions

Those in attendance were:

Gary Mitchell	Compact Chairman and Federal Member
Brian Dunnigan	Nebraska Ex Officio Member, Director of the Nebraska Department of Natural Resources
Ken Regier	Nebraska Compact Advisory Member
LeRoy Sievers	Legal Counselor for the Nebraska Department of Natural Resources
Jeremy Gehle	Nebraska Department of Natural Resources, Lincoln Field Office,
Tom O' Connor	Nebraska Department of Natural Resources, Eastern Field Offices Supervisor
Tom Stiles	Kansas Department of Health and Environment
Will Myers	Nebraska Department of Environmental Quality
Jason Lambrecht	United States Geologic Survey, Lincoln Data Chief
Bob Lytle	Compact Secretary, Compact Engineering Committee Chair and Budget Committee, Kansas Department of Agriculture, Division of Water Resources
Katie Tietsort	Topeka Field Office Water Commissioner, Kansas Department of Agriculture, Division of Water Resources
Paul Graves	Assistant Chief Engineer, Kansas Department of Agriculture, Division of Water Resources
Sharon Schwartz	Kansas Compact Advisory Member, Kansas Legislative Representative
Dave Clabaugh	Lower Big Blue Natural Resource District Manager
Norman Stokebrand	Lower Big Blue Natural Resources District
Marty Link	Associate Director, Nebraska Department of Environmental Quality
Robert Swanson	Director, United States Geological Survey, Nebraska Water Science Center
Rachel Gerlach	Nebraska Department of Natural Resources
Rod DeBuhr	Upper Big Blue Natural Resource District
Daryl Anderson	Little Blue Natural Resource District
Bob Lorenz	Lower Big Blue Natural Resource District
Doug Hallum	Integrated Water Management Coordinator, Nebraska Department of Natural Resources
Pat Goltl	Nebraska Department of Natural Resources, Bridgeport Field Office

Approval of the Minutes of the 37th Annual Meeting

Compact Chairman Mitchell noted that the minutes of the 2010 Annual Meeting were e-mailed to the appropriate parties back in January of this year (2011) for comments, corrections and additions. Compact Secretary, Bob Lytle handed out copies of the minutes to those who needed them and stated that he had received comments from some and that those were made part of the minutes. Chairman Mitchell inquired if there were any additional comments or corrections. Hearing none, the minutes of the 37th annual meeting of the Big Blue River Compact were approved by the Compact Commissioners.

Kansas Report

Assistant Chief Engineer Paul Graves distributed copies of a letter from Ex Officio Member David Barfield delegating him to serve on his behalf at the 38th Annual Meeting. Mr. Graves also passed out copies of the Report of the Kansas Commissioners to the Big Blue Compact Administration which he highlighted. Since the last Compact meeting, Kansas has a new Governor, Sam Brownback, a former two term US Senator, as the 46th Governor of Kansas replacing Mark Parkinson. Governor Brownback appointed a new Secretary of Agriculture, Dale Rodman, who has a long history in agribusiness including 37 years with the Cargill Company. The Department of Agriculture acquired three small departments, the Kansas Conservation Commission who provides cost share for soil and water conservation projects, and the Animal Health Department and the Ag Marketing Program.

Legislation

Mr. Graves summarized the Water Resources Legislation that was addressed at the last session. These are listed in the Kansas Report. 13 bills were being tracked by the Division of Water Resources (DWR) as they would affect the Agency, and of those, eight have moved on to final action or have been signed by Governor Brownback. Mr. Graves highlighted a few that are most significant for the Division of Water Resources.

SB 191 This bill established the Water Rights Conservation Program which is to be a contract between the Chief Engineer and a water right holder for up to 10 years which allows the water right holder to not use any water but there is no abandonment issues because the Program is considered due and sufficient cause for non-use.

HB 2231 This bill authorizes Multiyear Flex Account Program which authorizes water right holders to receive a five year term permit which allows for better flexibility by allowing a user to use more water than his yearly allotment in a dry year but then make that amount up later during the five year term.

Sub HB 2272 This bill allows for minor stream crossings in rural areas such as culverts to be constructed without approval from the Chief Engineer unless such crossing may cause property damage to another land owner.

Regulations

It has been a number of years since DWR's regulations had been updated. Currently being updated is the regulation pertaining to governing stream obstructions, channel changes, levees and floodplain fills and non jurisdictional dams. Also being drafted is a regulation to clarify when water rights in an area that has been closed to new permits to appropriate water are deemed to have due and sufficient cause for non-use and shall not be deemed abandoned.

Litigation

Of particular importance to Kansas is the Republican River case before the Supreme Court. A special master has been appointed by the U.S. Supreme Court, William J. Kayatta, Jr., of Portland, Maine, who has put forth a very aggressive schedule for hearing the case.

Climate Conditions

As a result of La Nina, Kansas is currently experiencing its worst drought since 2006. The U.S. Drought Monitor of May 10 showed less than 1 percent of the state is experiencing exceptional drought, 40 percent is experiencing severe drought, 38 percent is designated as moderate drought, and 13 percent of the state is abnormally dry. Only 8 percent of Kansas along the eastern border is deemed to have normal moisture at this time. The National Weather Service's Climate Prediction Center indicates drought conditions are expected to weaken over the next few months.

Mr. Graves concluded his remarks by welcoming the representatives from Nebraska to Marysville, and noted that at this time next year's annual meeting is scheduled for May 16, 2012 in Blue Rapids, Kansas near the confluence of the Big and Little Blue Rivers.

Chairman Mitchell noted that normally the visiting State presents their report first, and requested that Nebraska give their report at this time, to be followed by any comments from Kansas Representative Sharon Schwartz and others from Kansas.

Nebraska Report

Nebraska Commissioner, Brian Dunnigan, thanked Kansas and the City of Marysville for hosting this year's meeting and is looking forward to meeting in Blue Rapids next year.

As required by Nebraska law, basins not currently in an integrated management planning process are required to be evaluated to determine whether they are fully appropriated. The 2011 Annual Report of Nebraska River Basins included a preliminary determination that no new basins, including the Big and Little Blue River Basins, were found to be fully appropriated. Although the Lower Platte Basin was not found to be fully appropriated, the Lower Platte South Natural Resources District is seeking to collaborate with the Department of Natural Resources (DNR) to jointly develop an integrated management plan for its jurisdiction. Additional integrated management planning is occurring in other basins across the state as more refined management planning approaches are desired. A number of basins are seeking to amend their joint integrated management plans to more effectively achieve objectives contained in the plans. This planning is currently active in technical studies, namely the Cooperative Hydrology Study in the Central Platte Valley and several other ongoing technical studies, and is also responsible for insuring Nebraska stays compliant with the Big Blue River Compact.

While Nebraska is in much better fiscal shape than many other states, all State Agencies participated with planned budget cuts in preparation for potential legislative action. Fortunately DNR maintained funding levels to continue carrying out all of its statutory duties and objectives.

Commissioner Dunnigan highlighted a few legislative bills adopted that had no fiscal impact to the Nebraska Department of Natural Resources. LB 27 clarifies two current statutes, appropriations for water power, and well capacity limits. LB 31 removes a mandatory grant established in the 1950s for purposes of adaptation to more modern ratios of appropriated natural flow quantities to acres. LB 32 changes a requirement for the simultaneous grant of appropriation and dam permit in the safety of

dams and reservoirs act. LB 229 is a bill to replace future funding for our water resources cash fund lost two years ago. This fund was established to provide funding to meet objectives in integrated management plans with a grant approach to Nebraska's Environmental Trust using State lottery funds.

Compact Advisor for Nebraska, Ken Regier, indicated that Rod DeBuhr, Manager of the Upper Big Blue Natural Resources District (NRD) will be reporting in more detail on the activities in his District. Mr. Regier commented that in his District they have had some rains but they have been spotty, with some areas of the District receiving 3 to 5 inches of rain and others having none. Groundwater levels readings this spring have been completed and overall there was a rise of 1.27 feet across the District. The District is working with the City of Hastings on issues related to their water supply which is high in nitrates. A committee has been formed comprised of Little Blue and Upper Big Blue NRD board members and staff, and people from the City Council and the Hastings Utilities to develop a plan to address this problem.

Nebraska Administrative Report

Jeremy Gehle gave an update on the administrative activities in Nebraska. 2010 started with a significant snowpack due in large part to the largest Christmas snow storm in recent memory. The snow from that storm stayed on the ground and additional storms piled on until many county roads to gaging stations were nearly impassible. The snow stayed until the end of January. During the spring, north-central and northeast Nebraska experienced severe flooding, the Blue Basins received ample rains, yet most of the rainfall kept in the banks. Through the entire water year the basins received normal or just slightly below normal precipitation.

The flow in both basins exceeded target values over the May through September administration period. The Little Blue River at Hollenberg stayed above 100 CFS throughout the year, while the Big Blue River at Barneston stayed well above 200 CFS throughout the administration period.

Flows in both basins have been hovering around median values thus far in 2011. The current U.S. Seasonal Drought Outlook indicates that no drought is posted or predicted for the entire State of Nebraska; however the U.S. Drought Monitor shows Southeast Nebraska as being abnormally dry. If precipitation stays at normal levels, Jeremy indicated he is hopeful that flows will remain above the target values again in 2011.

Upper Big Blue NRD Report

Rod DeBuhr distributed copies of his report and summarized it. Following up on Mr. Regier's comments, the City of Hastings', population of 25,000, well field area is at the upper end of the basin and is experiencing nitrate problems. The NRDs is working with the producers in the area to help reduce these levels. It would cost in the area of 70 million dollars to have a new treatment facility on line, making it a major effort to avert some of that cost.

The Upper Big Blue is heavily irrigated with groundwater, having 11,534 irrigation wells registered. 115 new permits were issued in 2010 (80 new wells and 35 replacement wells). As part of the certification of irrigated acres and annual reporting requirement is an effort to identify unused or abandoned wells. The 2010 total registration is down 182 wells as a result.

As noted by Mr. Regier, groundwater levels in the District were up 1.27 feet overall. The average groundwater level is 7.0 feet above the allocation trigger. Mandatory reporting of irrigated acres and water withdrawals began in 2006. As of May 2011 there were 1,168,780 groundwater irrigated acres certified by the NRD. The average water withdrawal for irrigation in 2010 was 5.2 inches per acre.

The Upper Big Blue District is divided into 12 zones for water quality management, with the primary concern being nitrates. There are two zones that have been designated as Phase II areas which requires farm operators to attend a training session on best management practices related to fertilizer and irrigation management and deep soil sampling, irrigation scheduling and BMP reports. Since being designated Phase II the nitrate levels have been dropping. The District is also working with producers on water conservation practices. CROP-Tip is a demonstration site where different irrigation and nitrogen management techniques are used.

The Nebraska Agriculture water Management Demonstration Network is another very popular program. It encourages the use of ET gages and Watermark sensors. ET gages simulate crop water use through evaporation through ceramic and green canvas membrane, and the sensors are used to measure soil moisture in a nearby field to confirm the ET gage's accuracy. The NRD is selling this equipment to irrigators at a reduced cost to encourage adoption of scheduling practices, and this year the University of Nebraska is planning to have an interactive website up to allow cooperators to post data where it can be used by other irrigators. As of May 15, the District has sold over 800 sensors and related equipment which will be used to schedule irrigation of approximately 35,000 acres.

The District offers cost share assistance for soil and water conservation activities and projects. During FY09 and 10 almost \$200,000 (\$199,188) was spent with the funding coming from Nebraska Soil and Water Conservation Program and local NRD property tax revenue. The Upper Big Blue is the leading agency for the Blue Basin groundwater modeling effort to identify the hydrologic connection of the aquifer and the Blue River system. The model is currently revised and expanded to include parts of the Upper and Lower Platte River Basins along the northern border of the Upper Blue NRD. You can learn more about the model and the District at www.upperbigblue.org.

The following questions were asked of Mr. DeBuhr: Advisor Schwartz: What is the cost of the soil moisture sensors? They are about \$500 to \$600 per field. Chairman Mitchell: Referring to the groundwater level map attached to the District Report, the areas of the most decline, are they associated with the edges of the aquifer? Not necessarily, more just a reflection of pockets that received little precipitation. Secretary Lytle: Is the reason John Turnbull of the District is not in attendance today because the comparable test plots, one using irrigation scheduling and the other not, results were not what he predicted at last year's meeting? No, the District's plot had 2 bushel corn better yield using 2 inches less water.

Lower Big Blue NRD Report

Dave Clabaugh, District Manager, distributed copies of his report and summarized it. The Lower Big Blue NRD is considered the watershed capitol of Nebraska, with 280 flood control dams that it manages. The District has 11 completed watershed projects and is working on a 12th. About one third of the District is protected by flood protection from these dams. A lot of these structures were built in the 50s and 60s so maintenance costs are considerable. The District is trying something new in terms of maintenance. Instead of replacing an old principal spillway pipe that that has become damaged, they are being lined with a product from a company called Utility Maintenance out of Wichita. The DNR is very interested in seeing how well this method works. (David's report has several good photos of the liner being placed into a pipe at a dam on the Big Indian Project) This technology could be an excellent option to digging up an old pipe and replacing it. The liner only occupies about 1 inch of the inside diameter of the pipe and is smoother so no problems with flow capacities.

Ongoing is the Turkey Creek Watershed Project located in the upper part of the basin in Saline County. The project entails seven dams, three of which have been constructed with one under construction currently. Just completed is work in the Big Indian Watershed Project in the southern part of Gage County. This lake was rehabilitated starting in 2008 for phosphorus and sedimentation. 160,000 cubic yards of sediment were removed, and many improvements were made such as new camping facilities and a swimming cove and beach. Another good project that the District has been heavily involved with is the Tuttle Creek Project started in 2006. The Lower Big Blue was the lead NRD on this project, and it is a good example of a cooperative effort between the states. It is scheduled to be completed in September of 2011. Finally, groundwater level measurements have been taken. The Lower Big Blue does not have as much irrigation as other NRDs, there are about 2,500 wells in the District. Levels were about the same as last year. Measurements were also taken on the Compact wells which are found in the Engineering Report.

Little Blue NRD Report

Daryl Anderson distributed the Little Blue NRD Report and summarized portions of it. The District's biggest project is the installation of monitoring wells equipped with data loggers. Currently there are 44 wells installed, four more wells will complete the network and these will be completed by July 1st. Good information is expected as the network records data into the future.

Groundwater levels in the District are up as well with an average rise of about $\frac{3}{4}$ of a foot across the District. The District has a voluntary crop water use and pumpage report program. Mr. Anderson highlighted an attached table of reported water use which shows a reduction in application rates.

Work continues on cleanup of contaminated groundwater at the Naval Ammunition Depot near Hastings, NE. The plan has evolved into a pump-treat-recycle project. 20 extraction wells will be drilled, a central treatment facility constructed and then use the treated water for livestock and for recharging the aquifer with ponds. This is better use of the water than dumping it into the river as was originally planned.

The NRD received a grant through the IWMPP to conduct a hydrogeologic study of the entire district. Several consulting groups will be working with the District to consolidate hydrologic data to determine where additional measures may be needed to support the long term management of water resources. From this data a "Risk Map" will be developed which will identify the most sensitive aquifers.

The irrigation management project has been successful with the use of soil moisture sensors and ET gages. These sensors, cost shared by the NRD, are not only being used by agriculture, but also in urban areas to avoid wasteful lawn watering after rainfall events.

Mr. Anderson addressed briefly the important issue of nitrate levels in several areas in the District. The levels have continued to rise over the last 10 years, with over 55% of the communities' wells over 5PPM and 40% over 6 PPM. One effort has been to develop wellhead protection plans. 22 communities have approved plans, with three more currently under development.

Mr. Anderson explained for Katie Tietsort who inquired about the "Risk Map" that as she suggested the map does identify high priority areas of potential water shortages which could require additional management steps. He also clarified for Advisor Schwartz that at this time water meters are voluntary in his District and that there is no State requirement for metering, rather meter requirements are established by the NRDs.

Report from Advisor Sharon Schwartz

Ms. Schwartz indicated that Paul Graves had done a nice job of covering what she had to say, in particular the new administration and the consolidation of agencies into the Department of Agriculture. She believes the consolidations were ultimately a good thing, although many fear such change and view it as a threat to losing their political voice. She speculated about the Kansas Water Office and discussion about it merging with the Department of Agriculture.

During the past legislative session the projected 2012 budget shortfall was \$500 million, but managed to end up with a \$50 million balance after several budget cuts. The House of Representatives passed a rule this year called "Pay Go" whereby any proposed piece of legislation that would require additional spending, a funding mechanism has to be identified. This made it difficult for water related incentives, the Department of Agriculture and rural Kansas in general.

Report of the Kansas Water Commissioner

Katie Tietzort, Topeka Field Office Water Commissioner, distributed copies of her report and summarized its high points. The climate conditions in both the Big and Little Blue River Basins in terms of precipitation were at or just above the average with the basins receiving 30 – 40 inches of rainfall compared to an average of 30 – 35 inches. Temperature ranged from 2 degrees cooler to 1 degree warmer.

There were no administrative activities within the Big and Little Blue River Basins for the 2010 water year as required by minimum desirable streamflow (mds) values on the Big Blue River at Marysville, and the Little Blue River at Barnes. In fact, no minimum desirable streamflow was administered on any eastern Kansas rivers in 2010. Administration is initiated after the minimum is not met for 7 consecutive days.

Commissioner Tietzort highlighted the hydrographs of the mds gages in Kansas as well as hydrographs for the state compact gaging stations, Hollenberg and Barneston and noted that there was no administration on the compact gages as well. Also during the summer of 2010, the Topeka Field Office worked with the USGS in Lawrence to develop an automatically generated data page that arrives at their office each morning with data from Corps and Reclamation sites, as well as stream gages readings. This has been very helpful with administration of mds and other agreements related to stream trigger flows.

There was very little permitting activity in the Blue River Basins with only three new groundwater permits in the Big Blue in 2010.

Last year it was reported that meter orders had been issued to water right holders in the Little Blue and Mill Creek Basins. The Topeka Field Office has nearly completed the inspections of the meter installations. This proved to be good for working with these users in addressing any issues or questions related to their water rights. There was a group of about 50 water right holders that opted to not make the investment in the meter installation resulting in there being in non-compliance and having to cease diversions until they comply with the order. This year meter orders were issued in the Big Blue Basin and the Black Vermillion Basin and inspections are ongoing.

Water Commissioner Tietsort discussed the Blatant and Reoccurring Overpumping Program, BRO, which identifies users who divert more than their authorized amount of water. The first violation results in a notice being sent that informs the user of his authorized amount. The second, a \$500 civil penalty is issued and the authorized amount for the following year is reduced by the amount exceeded. The third, a \$500 per day penalty is issued and 2 times the amount over-pumped is removed from the next year. The 4th violation results in a one year suspension and the 5th the right is revoked. This past year there were no civil penalties related to overpumping in the compact area.

The Corps of Engineers Tuttle Creek Dam has in the past had to alter the releases to comply with the Endangered Species Act as it relates to the downstream nests of the Piping Plover and Least Turn. In 2010 the nesting habitat area was flooded the majority of the season so release schedules were not affected. Lake level management plans are being developed. These are plans for operating the levels of the reservoirs through the year and are agreed to by several water agencies. The Tuttle Creek plan should be much as it was last year.

Jeremy Gehle wondered if the meter requirements had any cost sharing for the operators. Katie explained that there is none and that the meters are inspected once for proper installation and specification requirements, but could be revisited if there are major changes to their water right or if their water use report has questionable diversions.

Secretary's Report

Compact Secretary, Bob Lytle, asked for everyone to be sure to sign the attendance sheet and to include a current e-mail address so that he can forward the draft minutes of today's meeting for everyone's review and comments/corrections later this fall or next winter. He indicated that the Annual Report from the 37th Annual Meeting held in Beatrice NE in May of 2010 will be printed and distributed in June or early July to those on the annual report mailing list.

Treasurer / Budget Report

Tom O'Conner distributed the Treasurer's Report, a Budget Analysis Table and a few copies of the Auditor's Report. He indicated that he was filling in for Andrea Kessler, the Compact Treasurer. Mr. O'Conner summarized the Treasurer's Report by indicating the Compact Budget is doing well with the balance on hand as of July 1, 2010 being \$22,114.55 and the estimated balance at the end of the Fiscal Year 2010 to be \$21,909.66. He then summarized the Budget Analysis Table by indicating the column highlighted in yellow is what Treasurer Kessler is recommending be adopted today for the Fiscal Year 2012. The only real change from the past budget is an increase of \$500 to offset the increase in the cost to maintain the stateline gaging stations. It was also recommended that the State's assessments remain at \$8,000 per State. The proposed 2012 budget was unanimously approved by the Compact Administration. In addition a motion was made and approved to have future budgets be reviewed and analyzed by the Budget Committee and to clarify when the audit will begin being performed biannually.

Committee Reports

Legal Committee Report

LeRoy Sievers gave the Legal Committee Report. He noted that the Legal Committee was assigned at last year's meeting, the duty of updating the Compact Rules and Regulations to include recent changes that have been approved by the Administration. Mr. Sievers had with him a draft of the amended Rules and Regulations to be signed by the Compact Commissioners. Mr. Sievers summarized the changes of which there are three. The first was to make the Rules and Regulations read gender neutral, the second was to change the audit requirement to biannually beginning in 2012 with audits on even years, and the third was to allow for the Treasurer to assign a designee to act on his or her behalf with fiscal activities. A motion was made approved to adopt the Rules and Regulations as drafted by the Legal Committee. This cleared up the question of why the 2012 budget has a line item for an audit.

Engineering Committee Report

Bob Lytle, Engineering Committee Chairperson, distributed the Engineering Committee Report. He indicated that the crux of the compact lies with the stateline gages and the flows occurring there during the May through September administrative time frame. As Jeremy Gehle indicated in his report, the compact target flows were met on both the Big Blue and Little Blue River gages. Mr. Lytle briefly went through the Committee Report, its hydrographs and historic water data. There were no new wells drilled in the regulatory areas, the river alluvium of the Big Blue and Little Blue Rivers. The Engineering Committee report was approved by the Administration.

Water Quality Committee

Will Myers with the Nebraska Department of Environmental Quality, Water Assessment Section, distributed the Water Quality Committee Report. The Water Quality Committee met on March 23rd at the Lower Big Blue NRD Office in Beatrice. Approximately 25 people attended. Mr. Myers noted a few updates that are included in the report. First, the Department of Environmental Quality 2010 Integrated Report, which contains the water quality impairments, was submitted March 30, 2010 and was approved by the EPA on January 26, 2011. Mr. Myers went through briefly the categories of impairment and the associated Total Maximum Daily Loads of contaminants. Of primary concern in the Blue Basins are E. coli and Atrazine.

The Big Blue/Tuttle Creek Lake Interstate Targeted Watershed Project is in its final year and is to be completed in September. It is a collaborative effort between Kansas and Nebraska to address water quality problems associated with excess runoff of sediment, nutrients, herbicides and bacteria. There has been good cooperation implementing conservation practice contracts with landowners by the NRDs and cost-sharing was helpful. Better than 80 percent of the conservation practice work has been completed. Historical monitoring data and current monitoring will be used to document water quality conditions before and after this watershed project effort especially in terms of load reductions of constituents into the reservoir.

The Nebraska Department of Agriculture is working with Syngenta, the University Extension Service and the Nebraska Corn growers Association to monitor atrazine levels in watersheds mainly in the

Southeastern and South Central part of the State. This effort involves implementing BMPs, buffer strip initiatives and spray setbacks near water bodies and groundwater wells.

Tom Stiles with the Kansas Department of Health and Environment provided comments from the State of Kansas perspective. Kansas is encouraged by the efforts and activities in Nebraska, in particular those associated with Tuttle Creek. Conditions will be re-evaluated in 2015 with the revision of TMDLs in the basin for nutrients and sediment as the Kansas Lower Republican Basin cycle for updating comes around.

The Watershed Restoration Protection Strategy Group for Tuttle Creek completed its 9 Element Watershed Plan. Then plan was approved by Kansas and submitted to the EPA and was considered to be an excellent model for watershed restoration. They are beginning to implement the plan using the various funding sources that are available. They are primarily concentrating on cropland and livestock management, as well as stream bank stabilization projects.

Mr. Stiles mentioned that last year there was a serious algae bloom in Centralia Lake on a tributary to the Black Vermillion characterized by a wet spring followed by very hot and dry conditions.

Chairman Mitchell noted that lead and copper were identified as impairments in some water bodies. Mr. Stiles explained that they attach to sediment and occur as an impairment mostly during large runoff events.

A discussion of measurement techniques for sediment monitoring was had with the two states explaining the various methods used including both turbidity and total suspended solids monitoring.

United States Geological Survey Report

Jason Lambrecht, USGS Data Chief, Lincoln, distributed a written report as well as gaging station data for the Compact stateline gaging stations, the Big Blue River at Barneston and the Little Blue River at Hollenberg. Also distributed were bookmarks which has information about a new USGS on-line feature called Water Alert. This product was described last year and is now readily available. By subscribing you can set up thresholds of river flow levels or groundwater levels and when the threshold is exceeded a text message is sent notifying you.

These gaging stations provide 15 minute data that are transmitted every hour for streamflow and water level information updates. This information can be found on the USGS website. Several visits are made to these gages to calibrate them so rating curves can be made to determine accurate discharges.

The annual mean discharge at the Big Blue River at Barneston for the 2010 Water Year was 1,096 cubic feet per second which was 1.6 times greater than the WR2009 discharge of 673 cubic feet per second. The annual mean discharge at the Little Blue River at Hollenberg was 559 cubic feet per second which was 1.4 times greater than the WR2009 discharge of 388 cubic feet per second. All of the data for the USGS can be viewed at the website <http://water.usgs.gov/>

Robert Swanson, USGS Director Nebraska Water Science Center described another feature available on the website called Groundwater Watch, which is one of several watch pages like flood watch and water watch with good graphics and statistics. There is also a page dedicated to the Nebraska Natural Resource Districts.

Old Business

There was no old business to be discussed.

New Business

The location and date of the next annual meeting was discussed. The compact rotates on a two year cycle so the meeting will be hosted by Kansas again next year and is tentatively planned for Blue Rapids on May 16, 2012. Paul Graves noted that there will be one change to the Kansas Committee assignments. Greg Foley the Director of the Kansas State Conservation Commission will be taking the place of Katie Howard, who is no longer with the Department of Agriculture, on the Water Quality Committee.

Committee Membership and Special Assignments

Committee appointments were made as follows:

Budget Committee

Andrea Kessler NE Chair
Bob Lytle KS Member

Legal Committee

Burke Griggs KS Chair
LeRoy Sievers NE Member

Water Quality Committee

Pat Rice NE Chair
Annette Kovar NE Member
Rich Reiman NE Member
Greg Foley KS Member
Tom Stiles KS Member
Dan Howell KS Member

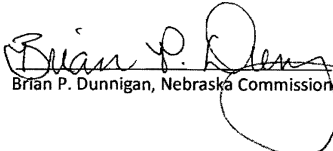
Engineering Committee

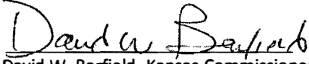
Bob Lytle KS Chair
Katie Tietsort KS Member
Jeremy Gehle NE Member
Keith Paulsen NE Member

Adjournment

At 11:45 am Chairman Gary Mitchell declared the Thirty Eighth Annual Meeting of the Big Blue River Compact Administration adjourned.


Gary R. Mitchell, Compact Chairman


Brian P. Dunnigan, Nebraska Commissioner


David W. Barfield, Kansas Commissioner

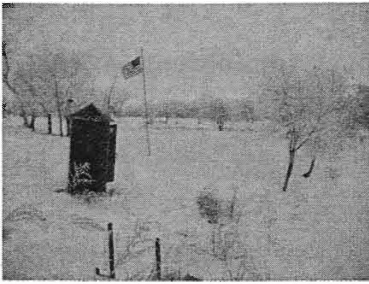
2011 Big Blue River Compact Administration Report

2010 Water Administration Activities in Nebraska

2010 started with fairly significant snow pack due in large part to one of the biggest Christmas snow storms in recent memory. The snow from that late December storm stayed on the ground and additional storms piled on until county roads were nearly impassable in places. The snow hung around until the end of January 2010. The spring was a little dryer. Then June came. While north-central and northeast Nebraska experienced severe flooding, the Blue Basins received ample rains, yet were able to keep most of the water between its banks. Through the entire water year the basins received normal or just slightly below normal precipitation.

The flow in both basins exceeded target values over the May through September administration period. The Little Blue River at Hollenberg stayed above 100 CFS throughout the year while Big Blue River at Barneston stayed well above 200 CFS throughout the administration period.

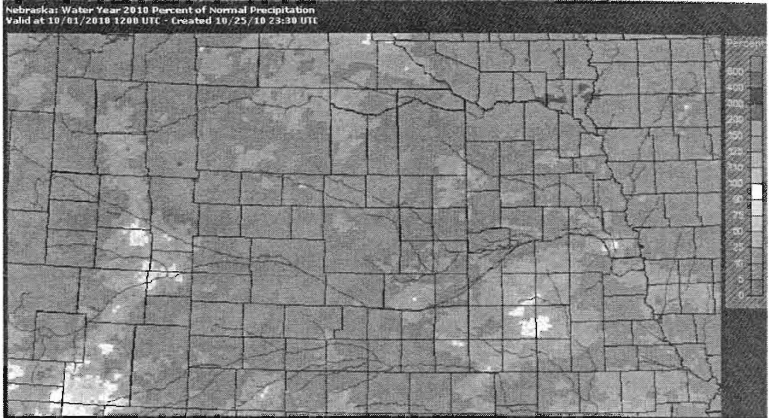
Flows in both basins in Nebraska have been hovering around the median value thus far in 2011. The current U.S. Seasonal Drought Outlook indicates that no drought is posted or predicted for the entire State of Nebraska; however the U.S. Drought Monitor shows southeast Nebraska as being abnormally dry. If precipitation stays at normal levels, I'm hopeful that we will stay above target flows throughout the year.



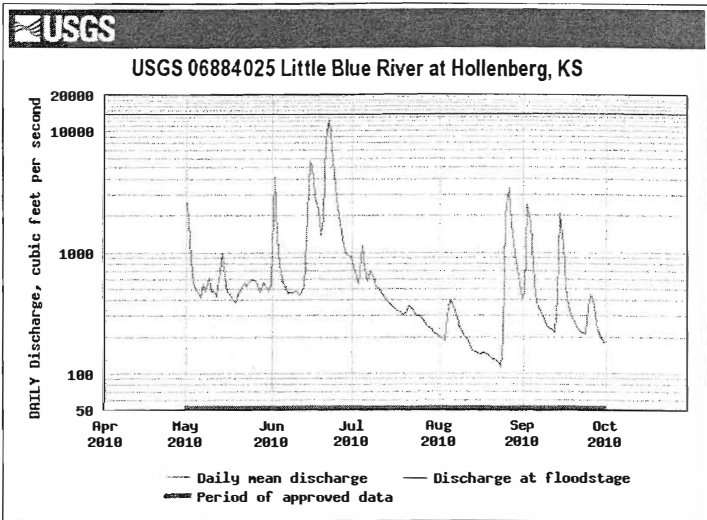
Big Blue River at Surprise



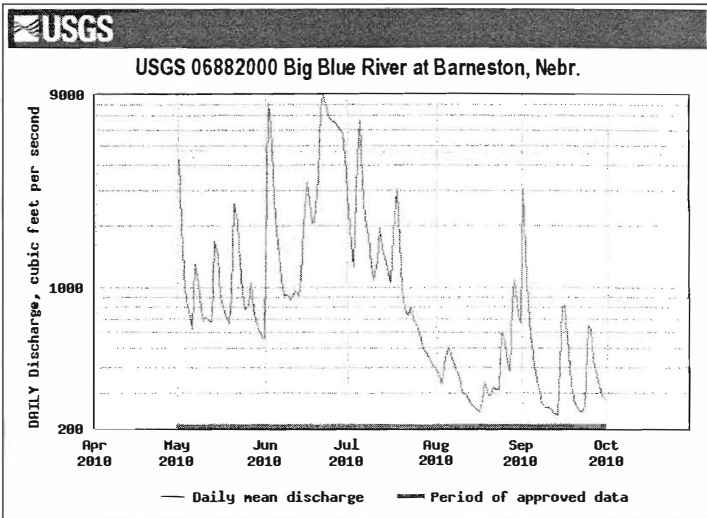
Butler County Road South of Surprise



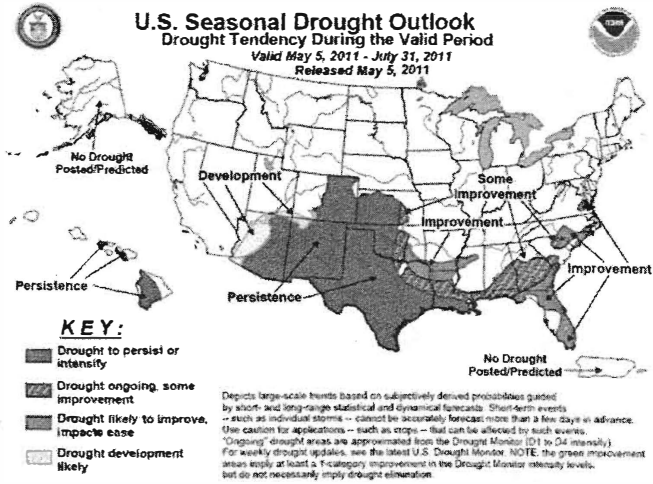
2010 Water Year Percent of Normal Precipitation



Minimum flow during the administration period at Hollenberg, 111CFS on 8/23/2011

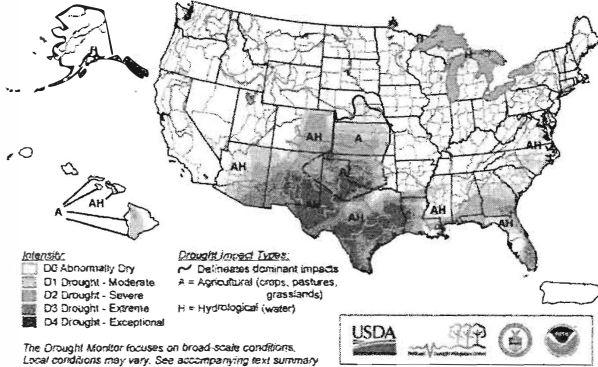


Minimum flow during the administration period at Barneston, 235 CFS on 9/13/2011



U.S. Drought Monitor

May 10, 2011
Valid 6 a.m. EDT



<http://drought.unl.edu/dm>



Released Thursday, May 12, 2011
Author: Rich Tinker, NOAA/NWS/NCEP/CPC

KANSAS-NEBRASKA BIG BLUE RIVER COMPACT

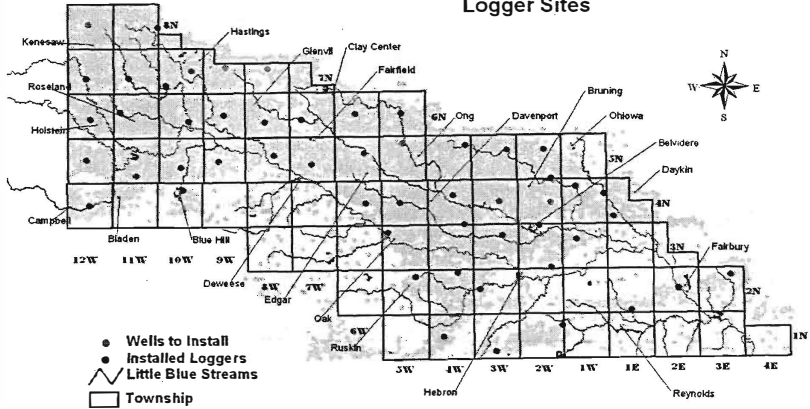
Report by Little Blue Natural Resources District

MAY 2011

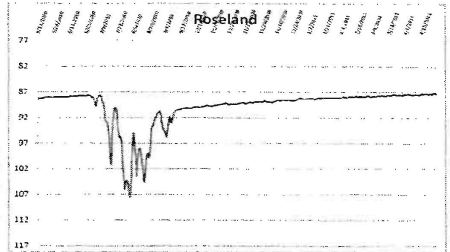
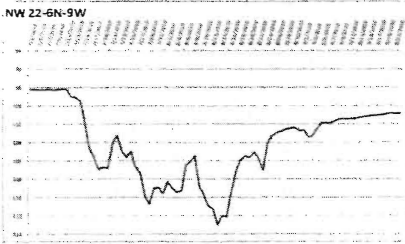
Monitoring Wells Installation

The Little Blue NRD continues add to our dedicated monitoring water well network which began in the spring of 2010. We currently have 44 wells drilled and equipped with data loggers. Four more wells remain to complete the network and should be constructed by July 1st. The drilling logs provided some outstanding geologic information which helped fill voids in our understanding of the aquifer. The review of the logger shows excellent detail of water table response to pumping and recharge for the first season of operation. Funding for the project was possible through a grant from the Nebraska Integrated Water Management Plan Program (IWMPP).

Little Blue Natural Resources District Logger Sites



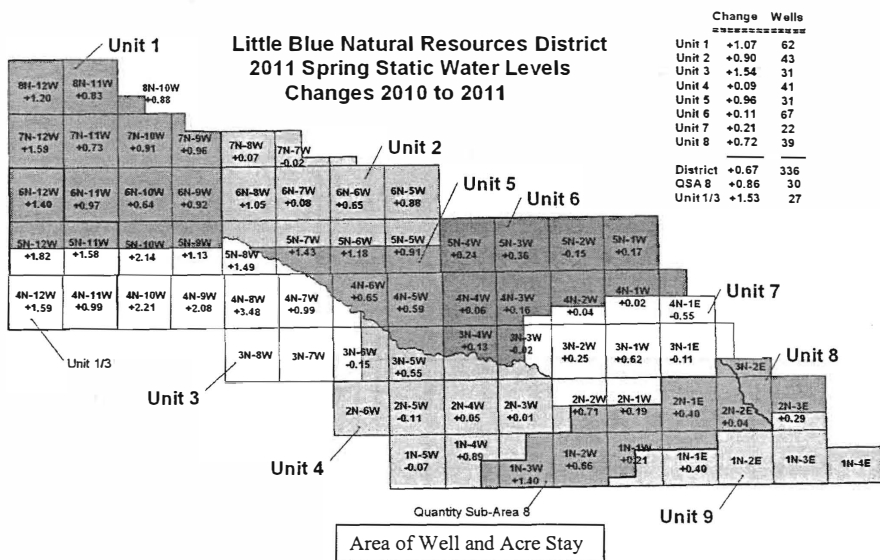
Here are two charts obtained from the 2010 monitoring well data loggers. The first runs from July 3 through September 21 of last year; the second is from May 14 through April 15, 2011.



Spring 2011 Groundwater Levels-

Spring 2011 static groundwater level of 336 irrigation and monitoring wells showed an average rise of 0.67 feet since the spring of 2010. The greatest rises occurred in the western portion of the district in Adams and Webster Counties with some wells as high as 3' above last year's levels. The area showing the slightest rise was in Fillmore County where only 0.11' foot rise was experienced. The isolated paleovalley aquifer in the southern portion of the district near the Kansas border showed a rise of 0.72'. This is the area where a stay on new irrigation wells and irrigated acres is in effect.

The data logger data is not incorporated into the annual monitoring network at this time but will slowly be integrated as we establish more historic data. Below find the 2011 spring results by township and pre-determined hydrogeologic regions.



Crop Water Use and Pumpage Reports

We've provided this information below in the past and believe it gives a valuable picture as to what our irrigators are pumping annually for the crops, and how those applications are changing over time with improvements in crop varieties, technology and management. The District collects voluntary groundwater pumpage data from nearly 15% of all of our irrigators each year.

Note that the period of about 2000 through 2006 was fairly severe drought throughout our district. Even then, applications are often times much lower than the 18 to 20" applications that were common in the late 70s and early 80s. The reports also indicate the transition from gravity to pivot systems which are proven to provide water savings and more uniform irrigation distribution.

District Wide

Irrigation Pumpage Summary

Cropping Year	Acres Report by Producers						Water Applied		
	Corn	Beans	Milo	Alfalfa	Other	Total	Pivot	Gravity	All Acres
1999	77,538	31,962	618	3,966	1,031	115,115	10.1	15.7	11.4
2000	65,755	30,611	191	3,481	316	100,354	11.1	17.0	13.6
2001	64,192	38,192	948	3,145	988	107,465	8.2	13.9	10.6
2002	61,973	38,608	294	3,799	2,469	107,143	13.6	19.9	16.5
2003	71,046	32,133	876	3,632	1,994	109,681	10.3	16.9	12.8
2004	72,418	33,679	372	3,388	2,146	112,003	7.6	13.1	10.4
2005	74,790	38,748	487	2,764	2,709	119,498	8.5	13.5	10.7
2006	74,489	41,976	185	3,247	2,108	122,005	7.8	13.0	10.0
2007	80,366	27,049	127	2,660	2,714	112,916	6.8	10.6	7.9
2008	71,112	33,139	112	2,559	2,102	109,024	4.4	7.3	5.2
2009	72,585	37,860	145	2,358	2,337	115,285	7.5	13.5	8.8
2010	73,424	35,828	82	2,542	2,068	113,944	5.4	9.1	6.2
Average							8.4	13.6	10.3

Groundwater Cleanup on Naval Ammunition Depot

Work continues on the Naval Ammunition Depot (NAD) just southeast of Hastings developing a remediation plan for groundwater contamination clean-up. You recall that contamination occurred in the vicinity as a result of ammunitions production and by-product disposal during World War II. The contamination includes volatile organic compounds (VOCs), primarily TCE and TCA, and explosives residues, primarily TNT and RDX.

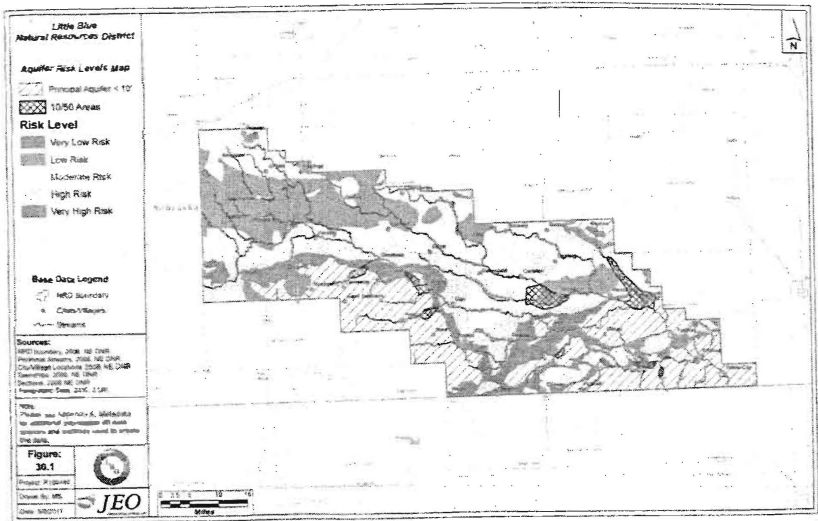
The plan has evolved into a pump-treat-recycle project. The Corps plans to install about 20 extraction wells of varying capacities (totaling 3,400 gpm) in an effort to intercept and contain the contamination. The water will be pumped to a central treatment facility, treated to drinking water standards and made available to the Federal Meat Animal Research Center (MARC) near Clay Center. MARC officials are planning to use the water for livestock and irrigation purposes but also intend to create some shallow groundwater recharge ponds to allow water to infiltrate back into the aquifer downstream of the contaminated plumes. A large existing watershed dam of the District will be utilized as a catch all for any runoff water that escapes the MARC recharge ponds. This reservoir has already proven to be an effective recharge facility.

Hydrogeologic Study Approved

The NRD received another grant through the IWMPP to conduct a hydrogeologic study of the entire district. We contracted with JEO Consulting Group from Lincoln who is also partnering with LBG Inc. out of Minnesota and H2O Options of Lincoln to consolidate hydrogeologic data for our area and assist us in a review of our groundwater management plan to determine if

additional measures are needed to support long-term management of our water resources. Preparation of maps has been completed and we are currently in review of those maps and offering suggestions on improvement. The next phase includes analysis of the information gathered and tying the data to our management plan.

One of the maps developed which we believe will be useful for the Board is called a “Risk Map”. This map will help the board identify those areas which additional management strategies would be beneficial. Below find the risk map which shows those areas in red that have the most sensitive aquifers, therefore presenting vulnerability of declines or potential conflicts between water users.



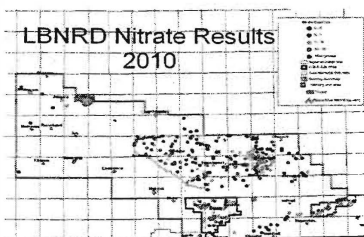
Along with this study, the board contracted with a retired NRCS person to do a detailed analysis of the various soils of the district to help create a formula which could assist us in making better determinations about the suitability of sites for irrigation development from a soils and surface water perspective. The board is anxious to combine both studies and use this information as they consider future well permit requests. Ultimately, all the information will be used to offer modifications to our Groundwater Management Plan to support our goal of protecting the aquifer for all future water uses.

Irrigation Management Project Successful

LBNRD has been involved in Nebraska Ag Water Management Demonstration Network for 6 years. The NRD started with 5 producers and will have over 200 producers in 2010 covering about 125,000 irrigated acres. The goal of the project is to save producers 1 inch of water, but by post surveys most producers have saved themselves 2 inches of water. The project includes soil moisture sensors and ET gages that are cost-shared by the NRD.

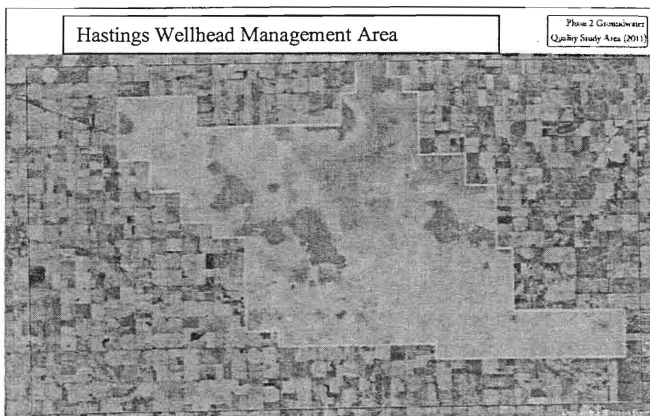
A website hosted by UNL also displayed ET information for over 100 producer's sites within the Little Blue District. Agronomist utilizes this site weekly to help them determine irrigation scheduling for producer's neighbors. Remote access to this equipment is becoming the popular trend.

Summer 2010 Water Quality Sampling Results



Nitrate levels for the Water Quality Sub-Areas are Bruning – 13.33 PPM, Byron-Deshler-Ruskin – 10.56 PPM, Clay-Nuckolls – 9.82 PPM, and Fairbury 8.68 PPM. District wide the NRD sampled 360 irrigation wells.

The Little Blue, Upper Big Blue and Hastings Utilities sampled an additional 500 groundwater wells in Hastings Wellhead Management Area. The map below shows areas in red exhibiting higher concentration of nitrates. Along with the water sampling, this area is doing vadose testing, isotope water sampling and will be expanding its water sampling area in 2011. A committee has been formed to discuss management options.



A growing concern of contaminants in drinking water supplies, especially nitrates, doubled in the Little Blue District in last 10 years. Over 55% of the community's wells are over 5 PPM with 40% actually over 6 PPM. The Little Blue has taken a pro-active approach in assisting communities in managing community's Wellhead Protection Areas. Wellhead Protection Management Areas can receive extra cost-share for best management practices, expanded education for rural and urban citizens and/or more restrictions. The City of Edgar received a grant to do an in-depth study of the high nitrate concentration in its management area. This study is nearly complete and will give the City and NRD a guideline on management options.

Our assistance with communities to develop wellhead protection areas has been fruitful. Out of the 32 communities which have public water systems, we now have 22 communities with approved wellhead protection plans, and 3 additional communities which are currently in the process.

Little Sandy Creek Watershed Progress

The District finally received our 404 permit for the last project on the Little Sandy Creek Watershed in April, 2011. Dam Site 73 is located one mile west of Tobias, NE and has a 3,994 acre drainage area. It will store 345 acre feet of water and will have 859 acre feet of detention storage. Bids have been advertised for the first portion of the project and construction should be completed this fall. When complete, the Little Sandy Creek Watershed will provide 5,450 acre feet of detention storage in the basin.

All-Hazard Mitigation Planning

The Little and Lower Blue River All-Hazard Mitigation Plan for Gage, Saline, Jefferson, Thayer, Fillmore, Nuckolls, Clay, Adams and Webster Counties was completed last fall and approved by FEMA on January 4, 2011. Upper Big Blue NRD is also a contributor for the project. Local entities are now eligible for pre-disaster mitigation funding and a number of those entities are busy preparing applications for various projects. In the Little Blue, we have been visiting with two communities about flood plain management and possible mapping revisions.

Well Drilling Activities

One hundred and fifteen permits were issued for irrigation wells (80 new & 35 replacements) in 2010. At the end of 2010 there were registered 11,534 irrigation wells in the District. This is a reduction of 182 active irrigation wells compared to the end of 2009. As part of our certification of irrigated acres and annual groundwater withdrawal reporting requirement we are identifying unused well and trying to get the owners to abandoned them or place them on inactive status and cap them properly to protect groundwater quality.

Ground Water Level Changes

The average groundwater level change for the District from spring 2010 to spring 2011 was a rise of 1.27 feet. The attached map shows the area of greatest changes and the county averages. With this change, the average ground water level is 7.00 feet above the allocation trigger. Mandatory reporting of irrigated acres and other water uses began in 2006. As of May 1, 2011, there were 1,168,780 ground water irrigated acres certified by the NRD.

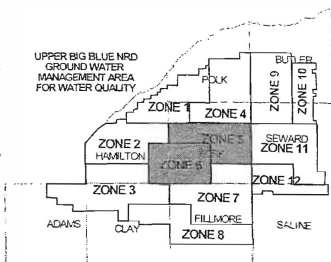
2010 was the fourth year that ground water withdrawal reports were required in the Upper Big Blue NRD. Metering is not required at this time. Wells that are not metered must provide an estimate of pumping rate and time of operation. The average water withdrawal for irrigation in 2010 was 5.2 inches per acre. The following table is a summary of reported ground water withdrawal on the Upper Big Blue NRD in 2010.

UPPER BIG BLUE NATURAL RESOURCES DISTRICT SUMMARY OF 2010 GROUND WATER IRRIGATION WITHDRAWAL

Withdrawal /Irrigated Acre	Acres	Acre Inches	Average Inches per acre	% of acres	% of withdrawal	No. of Pools	Average Acres/Pool	
Not Irrigated *	9,259	0	0	0.8%	0.0%	105	88	
0.1" TO 4"	409,586	1,202,668	2.9	35.2%	19.7%	2,233	183	
4.1" to 8"	609,859	3,440,800	5.6	52.4%	56.5%	3,076	198	
8.1" to 12"	104,184	982,237	9.4	9.0%	16.1%	639	163	
12.1" to 16"	21,297	286,852	13.5	1.8%	4.7%	169	126	
> 16"	8,914	181,237	20.3	0.8%	3.0%	95	94	
Total	1,163,099	6,093,794	5.2			6,317	184	
Reported wells								
Metered							4,403	38%
Not metered							7,131	
Total							11,534	
Average acres/well							101	

Groundwater Nitrates

The district is divided into twelve management zones for ground water quality management. The primary ground water quality management concern is nitrate. A ten township area York County and two townships in Hamilton County (Zones 5 & 6) were designated a Phase II management area to address increased ground water nitrate levels. The 2010 median ground water nitrate level in Zone 5 dropped from 12.0 ppm to 11.0 ppm. In Zone 6 the median nitrate dropped from 10.0 ppm to 9.1



ppm. Phase II management requires farm operators to attend a training session on best management practices related to fertilizer and irrigation management. It also requires deep (36") soil sampling, irrigation scheduling and annual BMP reports. The rest of the district remains in phase I management for groundwater nitrates. Under phase I management the application of anhydrous ammonia may not occur until November 1, while application of dry and liquid nitrogen fertilizers must wait until March 1.

The District is also working with the City of Hastings and the Little Blue NRD on a potential management area to address nitrate contamination in the Hastings Wellhead Protection Area.

CROP-TIP

CROP-TIP is an irrigation demonstration sponsored by The District and Cornerstone Bank near York. The purpose of the project is to show producers ways to reduce groundwater withdrawal and reduce nitrate leaching through improvements in irrigation methods. Corn was grown in the 20 acre demonstration field in 2010. In the spring of 2007 a subsurface drip irrigation system was installed on one-half of the project acres. Gated pipe irrigation is used on the other half of the field. In 2010, which was the seventh year of the project, 0.0 – 6.5 inches was applied to the gate pipe irrigation plots while 2.1 inches was applied the subsurface drip irrigation plots. The yield goal for corn was 230 bu. / ac. The corn yields ranged from 186 to 230 bu. / ac.

Nebraska Agricultural Water Management Demonstration Network

This is another program to encourage producers improve irrigation scheduling using Etagages and Watermark sensors to determine crop water use. The Etagage simulates crop water use through evaporation through 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 Upper Big Blue NRD with a collaborative effort with the University of Nebraska Extension. The program is now being implemented in several NRDs. The Upper Big Blue NRD is selling this equipment to irrigators at a reduced cost to encourage adoption of the scheduling practice. The data collected has been posted on the NRD's website. This year the University of Nebraska plans to have an interactive website up and running to allow cooperators to post data directly to the website where it can be used by other irrigator. This program, which originated in the Upper Big Blue NRD, has expanded to several other parts of Nebraska. As of May 15th the District has sold over 800 sensors and related equipment this year. These sensors will be used to schedule irrigation on approximately 35,000

acres. This will more than double the real time soil moisture irrigation scheduling in the District. It is estimated that approximately 140,000 acres will use real time soil moisture to schedule irrigation.

Soil and Water Conservation Cost-share Assistance

In FY09-10 the District funded 68 soil and water conservation projects with landowners. These ranged from irrigation practices such as buried pipelines and conversion to center pivot or subsurface drip irrigation to construction of terraces, waterways and planting of trees for windbreaks and wildlife. The funds totaling \$199,188.13 came from the Nebraska Soil and Water Conservation Program (\$95,816.00) and local NRD property tax revenue (\$103,372.13).

Groundwater Modeling

The Upper Big Blue NRD is the lead agency for the Blue Basin groundwater modeling effort to identify the hydrologic connection of the aquifer and the Blue River system. This is a cooperative effort among the NRDs in the basin. The District is currently working on revision o the model and expanding the model area to include parts of the Upper and Lower Platte river basins along the northern border of the Upper Big Blue NRD.

Visit our Website

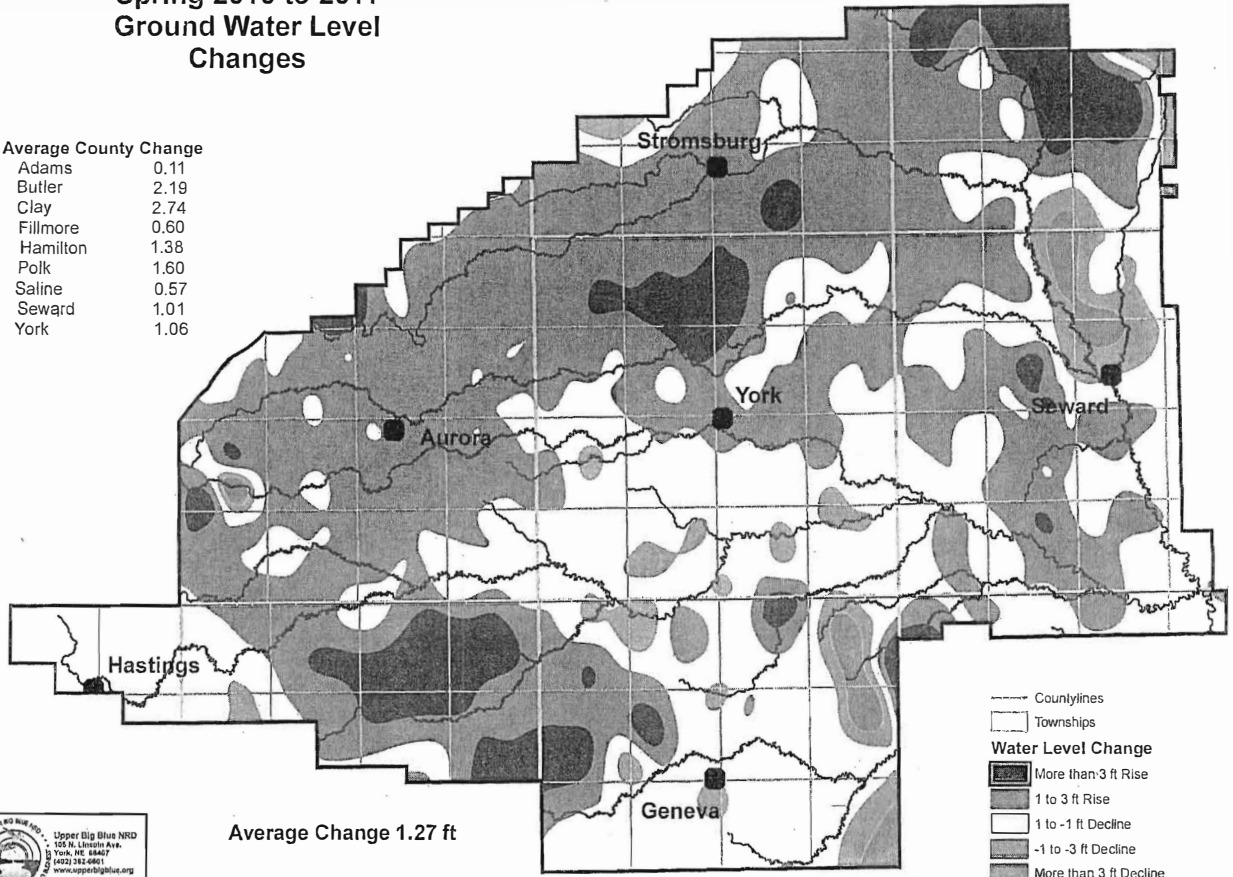
You can learn all about the District's programs and activities at www.upperbigblue.org.

Upper Big Blue Natural Resources District Spring 2010 to 2011 Ground Water Level Changes

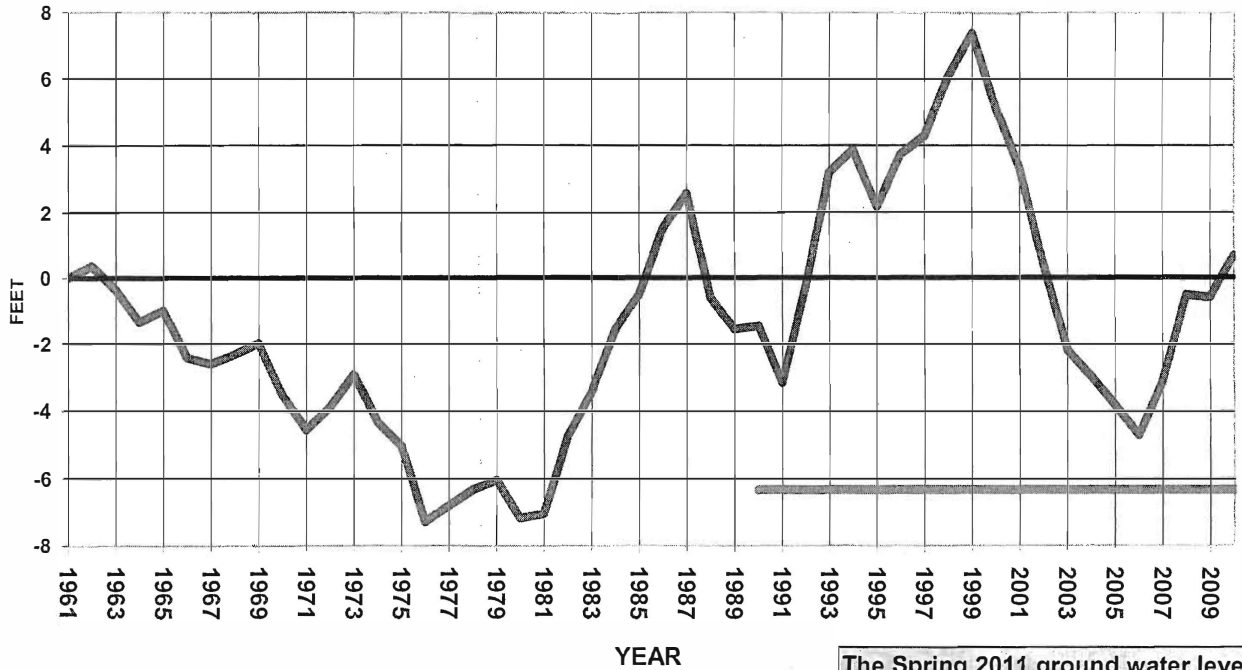




Average County Change

Adams	0.11
Butler	2.19
Clay	2.74
Fillmore	0.60
Hamilton	1.38
Polk	1.60
Saline	0.57
Seward	1.01
York	1.06



**UPPER BIG BLUE NRD - AVERAGE GROUND WATER LEVELS
TRIGGERS COMPARED TO HISTORIC LEVELS
SPRING 2011**



 District Ground Water Level
 Allocation Trigger

The Spring 2011 ground water level change shows a rise of 1.27 feet. This average level also correlates into being 7.00 feet above the "Allocation Trigger".

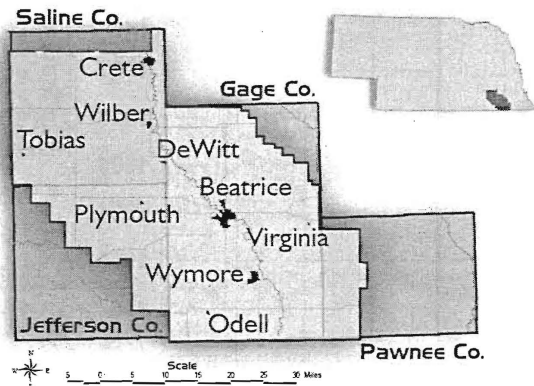
KNOW YOUR NRD

LOWER BIG BLUE
Natural Resources District
Beatrice, NE

2011

Nebraska's Natural Resources Districts
Making the Good Life Better Since 1972

LOWER BIG BLUE NRD



LBBNRD QUICK FACTS:

Watershed Capital

*The Lower Big Blue NRD serves parts of 4 counties and includes over 1 million acres.

*273 dams control 362,137 acres and provide 97,900 acre-feet of flood control in 11 completed watersheds

*9 NRD Public Recreation and Wildlife Management Areas on 1,153 acres

*District tracks groundwater levels and has established water quality areas.

Protecting Lives

Water Quality:

The Lower Big Blue NRD (LBBNRD) tests domestic drinking water wells at no charge to rural residents of the district.

A water test for nitrates is highly recommended by the LBBNRD for households with infants, pregnant women, nursing mothers, or elderly people, as these groups are most susceptible to nitrate poisoning.

Without a test, nitrates in water are undetectable because they are colorless, odorless and tasteless.

The LBBNRD samples approximately 400 irrigation wells each year for nitrates and other chemicals.

The LBBNRD collects surface water samples at public recreation areas and tests surface water samples during rainfall events.

Protecting Property

The Lower Big Blue NRD manages several programs that protect property throughout the district including:

-The LBBNRD is responsible for flood control and grade stabilization structures that protect roads, bridges, villages, and lives.

-The LBBNRD assists local communities in the establishment of Wellhead Protection Areas and the development of Community Wellhead Protection Plans.

-The LBBNRD provides cost-share and technical assistance for the installation of conservation practices including terraces, tile and waterways to improve water quality.

-The LBBNRD establishes tree windbreaks for the protection of communities, farmsteads, livestock, and wildlife.

Protecting the Future

Rural Water Supply:

The Lower Big Blue NRD with assistance from a USDA grant will fund a new rural water project in southern Gage County.

The project will supply 150 rural Gage County users and 21 users in the Village of Holmesville. These rural residents were in great need of a quality water supply as quality and quantity are both issues due to a lack of water bearing groundwater formations.

The district operates and maintains the Beatrice Rural Water Project that supplies water to rural residents west of Beatrice and to the Homestead National Monument.

This project was developed because of a lack of groundwater and the need for quality water for rural residents and the National Monument.

Community-Based Planning Process

In 2007, the Lower Big Blue NRD partnered with several local, state and federal agencies to initiate a community-based planning process for Big Indian Lake Watershed. This locally-led process resulted in a Watershed Management Plan that has incorporated a unique mix of cost-share and incentives for a host of agricultural management practices.



The primary goal of the community-based planning process is to conduct necessary planning to facilitate the implementation of watershed protection measures. A locally-led group comprised of Big Indian landowners and stakeholders developed the watershed management plan.

Today, the 3,470-acre watershed is seeing that plan become a reality. Fifteen landowners and stakeholders have begun to install over \$600,000.00 worth of land treatment. Additionally, construction on the \$1.2 million lake-renovation project is underway. The addition of mainstream sediment dikes, several breakwaters, a new boat ramp and dock, more camp ground and improved fish habitat will address

issues of water quality and vastly improve the recreational opportunities at the lake. Look for in-lake work to be completed by late 2010, and the lake to be re-opened Spring 2011.



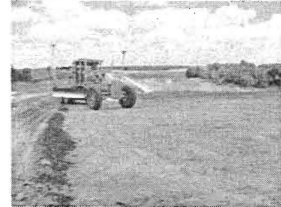
Lower Turkey Creek Watershed Project

The NRD started construction of the Lower Turkey Creek project in the spring of 2008. The project involves the construction of seven new flood control structures that will control approximately 43,600 acres in the Lower Turkey Creek Watershed drainage area.

The seven flood control structures will reduce damages of the 100-year storm event by \$2,000,000 dollars and will have a \$400,000 average annual benefit to the district. Benefits of the project include

sediment storage, improved water quality, reduced damage to public roads and bridges, fish and wildlife habitat enhancement, and stream augmentation.

As of Fall 2010, 3 of the 7 Dams will be completed, with construction of 2 more dams set to begin in the winter 2010 and Spring 2011.



- Protect Lives and Property Through Flood Control
- Provide Soil Conservation Through the Installation of Terraces, Tile, Waterways and Buffer Strips

Formed in 1972, Nebraska's Natural Resources Districts are local government entities with broad responsibilities to protect our natural resources.

The Lower Big Blue NRD is governed by a 13-member board of directors elected by voters within the district. The board sets policy for the district and works with the staff to carry out the district's goals. LBBNRD staff work cooperatively with other local and state groups to promote good stewardship of natural resources in the district.

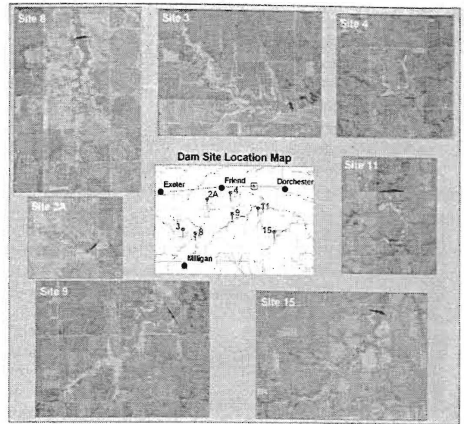
Major Nebraska river basins form the boundaries of the 23 NRDs. This system is unique to the State of Nebraska. The system allows Nebraska to effectively and efficiently manage natural resources through a watershed-based plan.

NRDs help Nebraskans respond to natural resource challenges with local control and local solutions.

Find out more about Nebraska's NRDs at www.nrdnet.org and www.lbbnrd.org

Lower Turkey Creek Watershed Project Sponsored by Lower Big Blue NRD

The Lower Turkey Creek Watershed Project includes the construction of 7 flood control structures that will control approximately 43,600 acres or 31% of the 131,200 acre Lower Turkey Creek drainage area located in Saline and Fillmore Counties. The seven sites will have approximately 490 surface acres of permanent pool, 1,450 acres of flood pool, and 3,500 acre feet of sediment storage. The project will reduce annual flood damages to urban areas, crops, pastures, roads, and bridges by approximately 31% or \$400,000 annually. The projects primary purpose is flood control but the project will also improve water quality, reduce sedimentation, enhance fish and wildlife, and provide stream flow augmentation.



The NRD completed the feasibility study for the project in two phases. Phase I of the study included survey/data gathering, hydrologic/hydraulics assessment, preliminary economics, dam locations and sizes, and determined the cost benefit ratio of building the structures. The NRD, in an effort to identify a combination of sites that would provide the highest benefit, looked at several alternative combinations of constructing between 1 and 18 flood control structures including a main stream flood control structure.

Phase I of the study, focused on identifying a technically and economically feasible combination of dams base on field visits, detailed hydrologic, hydraulic, and economic models, found that the combination of sites 2A, 3, 4, 8, 9, 11, and 15 provided the most flood protection and had the highest cost/benefit ratio.

Phase II of the study focused on land treatment inventory, woodland inventory, roadway impacts, cultural resources, and environmental assessment of the sites.

Construction of Site 4, Site 8 and Site 3 have been completed. Land Rights have been completed on Site 15, with construction scheduled for the spring of 2011.

The project requires the closing of two county roads which have been approved by both Saline and Fillmore Counties.

The NRD has received all the necessary permits except for final design approval for each site from DNR. The NRD expects to purchase easements and does not expect to hold fee title on the sites.

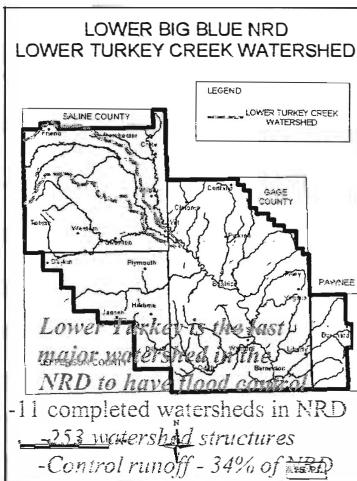
Significant increases in land values have occurred since the project was approved. The 2004 rate of return was 6.0% and with the 2007 actual land acquisition costs the projects rate of return without calculating the additional cost benefits is 5.7%.

Dam Site Data

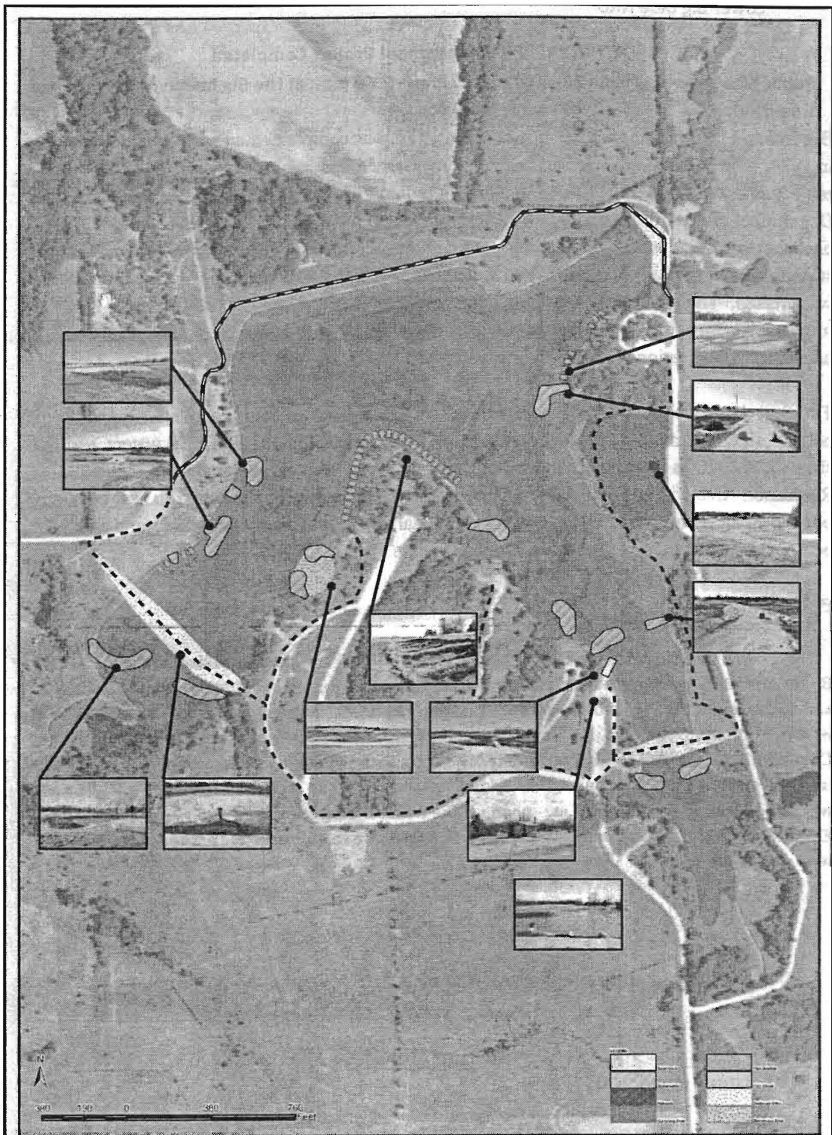
Site	Drainage Area (Ac)	Permanent Pool (Ac)	Flood Pool (Ac)	Project Purpose
2A	2,176	31	71	Flood Control,
3	11,968	117	391	water quality and recharge,
4	3,584	35	114	reduce sedimentation,
8	6,912	80	299	3,500 acre feet sediment storage,
9	9,984	108	311	enhance fish and wildlife habitat,
11	3,072	30	98	incidental public recreation and
15	5,632	73	217	stream augmentation
Total	43,328	474	1,501	\$400,000 ANNUAL BENEFIT

Lower Turkey Creek Funding

NRDF FUNDS	66%	\$ 4,411,735
LBBNRD AND COUNTY FUNDS	34%	\$ 2,272,712
TOTAL		\$ 6,684,447



Lower Turkey Creek Project Major Flooding: 1973, 1982, 1984, 1987, 1992, 1993, 1996, 1998, 2003, 2004, 2007



BIG INDIAN RECREATION AREA LAKE REHABILITATION
 GAGE COUNTY, NEBRASKA



IMMEDIATE NEWS RELEASE

From: J. Scott Sobotka, Assistant Manager
Lower Big Blue NRD

Big Indian Lake Improvement Project Completed

Public Site Showing - June 11, 2011, 11:00 a.m. - 2:00 p.m. at the Big Indian Archery Range

Big Indian 11A dam, originally constructed in 1972, was complemented with recreation facilities in 1974. The Big Indian Watershed Community-Based Planning Process and lake renovation project essentially began in 2007 when the Big Indian 11A watershed was listed on the Nebraska Department of Environmental Quality's Section 303(d) list of impaired water bodies for phosphorus loading and sedimentation. Through the cooperation of landowners, operators and stakeholders within the Big Indian 11A watershed, a Big Indian Watershed Management Plan was created. The plan established land treatment and water quality goals, and allowed the NRD to secure funding from federal, state and local agencies for both in-lake improvements, and for additional conservation work within the watershed.

Today, as land treatment work continues, the lake renovation project is complete. An emergency helipad, three sediment dikes, four maintenance breakwaters, nine in-lake breakwaters, and fish shoals and scallops have been constructed. Among other changes, visitors to Big Indian Recreation Area will notice improved shoreline stabilization, improved access, a new boat ramp, boat dock, handicap-accessible restroom, additional and improved camping areas and a new beach and swimming cove protected by breakwaters.

Public Site Showing:

In partnership with the Big Indian Advisory Council and the Big Indian Archers, the Lower Big Blue NRD is having a public site showing and Grand Opening on Saturday, June 11, 2011, 11 a.m. to 2 p.m., at the Big Indian Recreation Area. The lake is located 4 miles south and 2 miles west of Wymore, Nebraska. EA Engineering, NRD Staff and members of the Big Indian Advisory Council will be on hand to discuss the improvements with the public. A hayrack ride touring the lake will start at 11:00 a.m. and a free hotdog lunch will start at 11:30 a.m.. KUTT 99.5 FM radio will be on location from 10:00 a.m. - noon. If the weather cooperates and the lake is at full pool, EA Engineering will be giving boat rides. Please join us at the shelter near the archery range on the west side of the lake.



**Report of the Kansas Commissioner
to the
BIG BLUE RIVER COMPACT ADMINISTRATION
at the
2011 Annual Meeting
Marysville, Kansas
May 18, 2011**

1. **Administration Changes:** In January, Sam Brownback became Kansas' 46th Governor. Brownback is a former Kansas Secretary of Agriculture and two-term U.S. Senator. He appointed Dale Rodman the 15th Kansas Secretary of Agriculture. Rodman was retired from a career in agribusiness including 37 years at Cargill.
2. **Budget:** The FY 2012 budget has passed and is pending final action by Governor Brownback. It appears the budget passed by the Legislature will fund the Kansas Department of Agriculture's Division of Water Resources (DWR) at requested levels plus \$55,000 for Arkansas River gages, minus a \$150,000 reduction in state general funds, minus a 5 percent across-the-board IT reduction, minus a 20 percent across-the-board cell phone reduction, and an additional 0.6 percent across-the-board state general fund reduction.
3. **Agency Reorganization:** Shortly after taking office in January, Governor Brownback issued a series of Executive Reorganization Orders, including an order that moves other agencies or programs into Kansas Department of Agriculture. The State Conservation Commission (SCC), Animal Health Department, and Agriculture Marketing Program (currently part of the Department of Commerce) will become part of KDA effective July 1. From a water perspective SCC is most relevant – their primary responsibility is cost-sharing on a range of conservation projects including streambank stabilization, watershed dam construction and repairs, and water right retirement programs in over-appropriated areas. Chief Engineer David Barfield is an appointed member of the SCC board and DWR has had a close working relationship with SCC. This reorganization promises to strengthen the agencies by reducing overhead and promoting increased collaboration.
4. **Legislation:** As of May 17, eight of 14 water resources bills had been signed or were pending signature by Governor Brownback; some of the bills had been combined in legislative conference committees:
 - a) **SB 122** (conservation easements in navigable rivers) authorizes the KWO director to grant easements for streambank stabilization projects on state land in the Kansas, Arkansas, and Missouri Rivers within Kansas. Currently easements must be obtained through statutes passed by the Legislature. The proposed process is less cumbersome and timelier.
 - b) **SB 124** (Smoky Hill access district) establishes a special water district for releases from state-owned storage in Kanopolis Reservoir. The City of Salina and an irrigation district would likely be the initial members. Other bills inserted into SB 124 include:

- i. SB 191 (water rights conservation program) authorizes the chief engineer to implement a program to allow voluntary nonuse of water rights for up to a 10-year term with the possibility of re-enrollment for multiple terms. The legislation also authorizes a \$300 application fee to fund the program.
 - ii. HB 2231 (flex accounts) updates the water use base period and makes it easier to sign-up for 5-year allotments with a 10 percent conservation requirement.
 - iii. HB 2357 (Ark River gaging fund) establishes a fund to receive oil and gas royalties for leases on state property (except wildlife and parks land) in five western Kansas counties, which would then be available to fund operation and maintenance of USGS streamgages along the Arkansas River necessary to manage compact flows.
- c) H Sub SB 214 (redefining “person” in groundwater management district act) is intended to clarify eligibility for voting on district matters. One other bill was inserted into H Sub SB 214:
 - i. Sub HB 2272 (stream obstructions) allows some minor stream crossings in rural areas to be constructed without prior approval of the chief engineer but retains jurisdiction in case problems develop at those locations.
 - d) S Sub HB 2133 (interstate water litigation fund, formerly SB 147) changes the manner in which damage moneys from two interstate water compacts would be distributed.
5. **Regulations:**
- a) **Stream obstructions:** DWR is in the process of updating a comprehensive set of regulations governing stream obstructions, channel changes, levees and floodplain fills other than jurisdictional dams. A second stakeholder review process is planned this spring before commencing the formal regulatory approval process.
 - b) **Means of diversion:** DWR is drafting regulations to define the phrase, “where means of diversion are available to put water to a beneficial use within a reasonable time” to clarify legislation enacted in 2010 that stipulates when groundwater rights in areas closed to new appropriations are deemed to have due and sufficient cause for nonuse and shall not be deemed abandoned (K.S.A. 82a-718(d)).
6. **Litigation:**
- a) **Kansas v. Nebraska and Colorado:** On April 4, 2011, the U.S. Supreme Court issued an order accepting Kansas’ May 3, 2010 request to file suit seeking enforcement of the Republican River Compact and the Court’s decree approving the final settlement stipulation of 2003. The Court also issued an order appointing William J. Kayatta, Jr., of Portland, Maine as Special Master in the case. The Special Master will direct the proceedings and make recommendations and reports to the Supreme Court.
 - b) **Cochran v. KDA and City of Wichita:** On March 25, 2011, the Kansas Supreme Court ruled that the Cochrans, neighboring water right owners, have standing to appeal water appropriation permits issued to the City of Wichita for diversion of groundwater from the Equus Beds aquifer and Bentley well field. The matter has been remanded to district court.

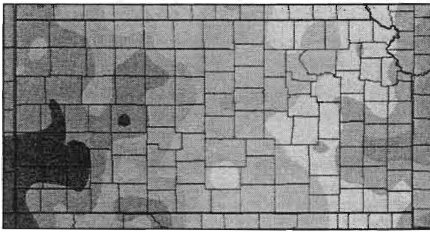
7. **Climate Conditions:** As a result of La Niña, Kansas is currently experiencing its worst drought since 2006. The U.S. Drought Monitor of May 10 showed less than 1 percent of the state is experiencing exceptional drought, 1 percent is experiencing extreme drought, 40 percent of Kansas is experiencing severe drought, 38 percent is designated as moderate drought, and 13 percent of the state is abnormally dry. Only 8 percent of Kansas along the eastern border is deemed to have normal moisture at this time. The National Weather Service's Climate Prediction Center indicates drought conditions are expected to weaken over the next few months.
8. **News from the Big Blue River Compact Area in Kansas:**
 - a) **Disaster declarations:** During the past year there was one federal disaster declaration in Kansas related to severe weather, which included most of the Big Blue River basin in Kansas: August 10, 2010 (DR-1932), severe storms, flooding, and tornadoes. Primary impacts were roads and bridges, with a total damage estimate of \$11.3 million.
 - b) **Watershed restoration project:** An ongoing project funded through the Kansas Watershed Restoration and Protection Strategy (WRAPS) program is designed to improve water quality in the Lower Little Blue River and Lower Big Blue River through implementation of best management practices including livestock waste management systems, water retention and sediment control structures, and riparian buffers. These stream reaches are currently impaired by fecal coliform bacteria.
 - c) **Streambank Erosion Assessment:** Kansas Water Office conducted an analysis reported in "Tuttle Creek Watershed Streambank Erosion Assessment" (draft April 2011) in which they compared 1991 and 2008 aerial photographs and determined that 88 percent of the watershed's annual sediment load originates from streambank erosion in reaches of the Big Blue River and Little Blue River, representing 56 percent of the total estimated stabilization cost needs in the Tuttle Creek Watershed.
9. **Assignments:** Kansas requests to maintain its present committee assignments except we request to replace Katherine (Katie) Howard with Greg Foley on the Water Quality Committee. Ms. Howard no longer works for the Kansas Department of Agriculture; she took a job with the Environmental Protection Agency. Mr. Foley is executive director of the State Conservation Commission in Kansas, which administers cost share programs related to water and soil conservation.
10. **2012 Annual Meeting:** Kansas looks forward to hosting the 2012 annual meeting of the Big Blue River Compact Administration. We propose to hold the 2012 annual meeting on Wednesday, May 16, 2012 in Blue Rapids, Kansas. We will provide advance written notice of the meeting including the specific location, start time, and proposed agenda.

Kansas-Nebraska Big Blue River Compact Meeting 2011
Report by Kansas Department of Agriculture- Division of Water Resources
Topeka Field Office
May 2011

Climatic Conditions- Precipitation & Temperatures

The High Plains Regional Climate Center reported 30 to 40 inches of precipitation in calendar year 2010 for the Big and Little Blue River basin area in Kansas, including the Mill Creek and Black Vermillion subbasins, against an average annual of 30 to 35 inches in this region. Average or above average annual precipitation was received basin-wide. In comparison to last year, the pattern was wetter than in recent years. Temperatures for the calendar year 2010 ranged from about 2 degrees cooler to about 1 degree warmer on average.

Precipitation (in)
 1/1/2010 – 12/31/2010



Generated 1/11/2011 at HPRCC using provisional data. Regional Climate Centers

Percent of Normal Precipitation (%)
 1/1/2010 – 12/31/2010



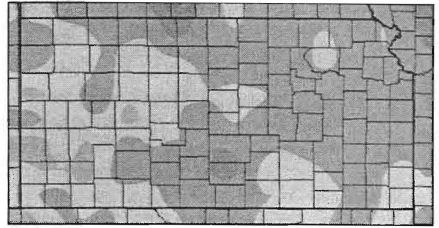
Generated 1/11/2011 at HPRCC using provisional data. Regional Climate Centers

Departure from Normal Temperature (F)
 1/1/2010 – 12/31/2010



Generated 1/11/2011 at HPRCC using provisional data. Regional Climate Centers

12-Month SPI
 1/1/2010 – 12/31/2010



Generated 1/11/2011 at HPRCC using provisional data. Regional Climate Centers

The Standardized Precipitation Index (SPI's) reflects long-term precipitation patterns and compares the precipitation for 12 consecutive months with the same 12 consecutive months during all previous years of available data. Because SPI's with longer periods of data reflected tend toward zero if no specific trend is taking place and because the SPI tends towards zero throughout the basin, it still appears that no trend is showing at this time.

Administration Activities

Minimum Desirable Streamflow (MDS) on the Big Blue River at the Marysville U.S.G.S. gage ranges by month from 65 cubic feet per second (CFS) (fall) to 150 cfs (spring). MDS on the Little Blue River at the Barnes U.S.G.S. gage ranges by month from 60 cfs (fall) to 150 cfs (spring). No MDS administration occurred in this basin, or any other Eastern Kansas basin, in calendar year 2010.

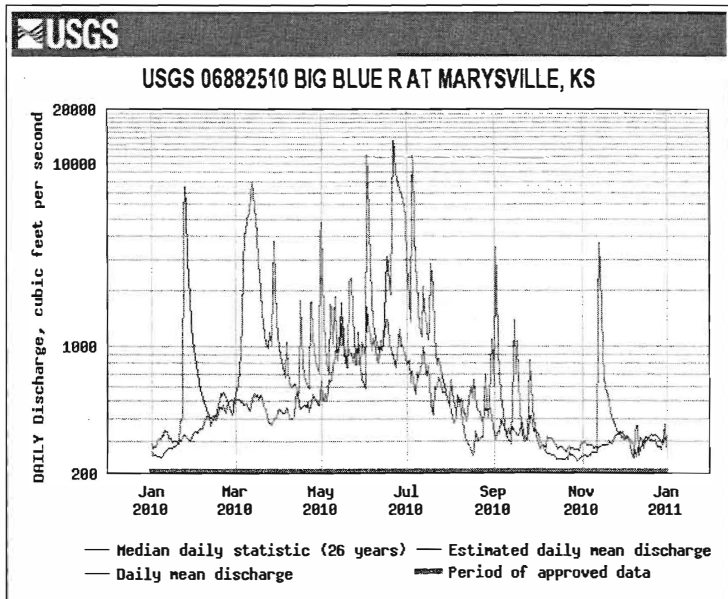
Watercourse	Minimum Desirable Streamflows (cfs)											
	Month											
	J	F	M	A(a)	M(a)	J(a)	J	A	S	O	N	D
Big Blue Marysville	100	100	125	150	150(d)	150(d)	80	90	65	80	80	80
Little Blue Barnes	100	100	125	150	150(d)	150(d)	75	80	60	80	80	80

(d) Subject to the stateline flows contained in the Blue River Compact.

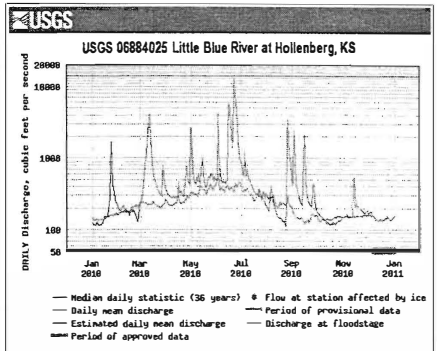
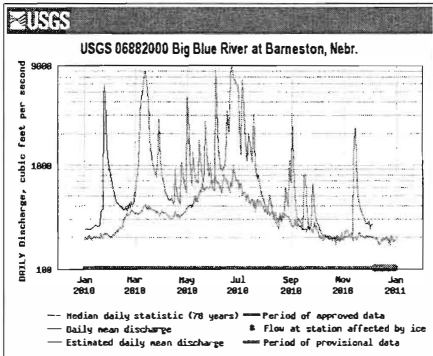
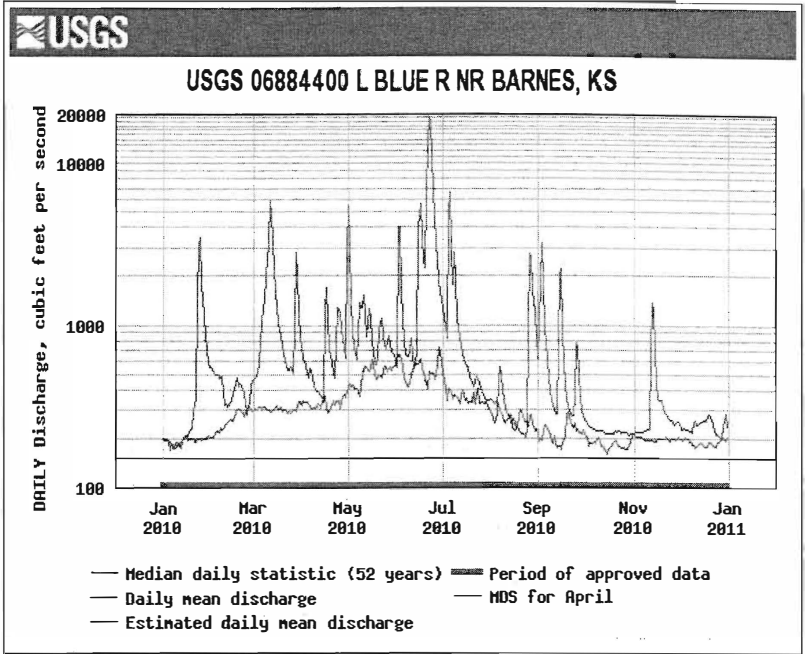
Streamflow

Streamflow in the basin remained above median daily statistic for both gages for the entire calendar year. Statistics reflect 26 years of data at Marysville and 52 years of data at Barnes. There were no days on the 2010 calendar year that streamflow fell below the MDS value at the gage at Marysville, Kansas, on the Big Blue River, or below the MDS value at the gage near Barnes, Kansas, on the Little Blue River. Several flood events occurred. Flows recorded near Barnes, Kansas, remained above the median daily statistic nearly the entire year. Compact gages at Barneston and Hollenberg remained above compact criteria for the calendar year 2010.

USGS 06882510 BIG BLUE R AT MARYSVILLE, KS



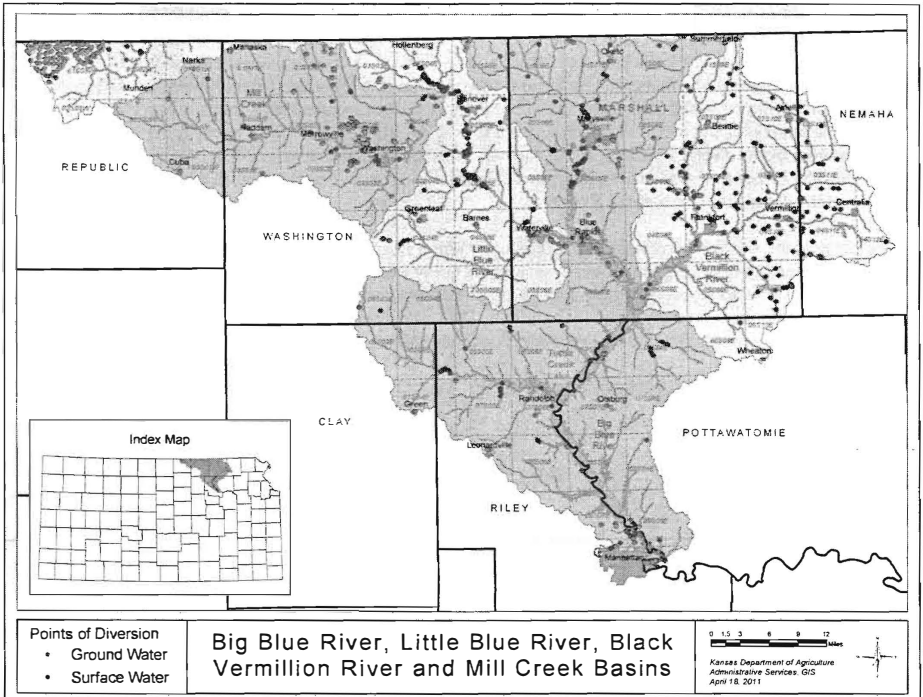
USGS 06884400 L BLUE R NR BARNES, KS



3

New Well Development

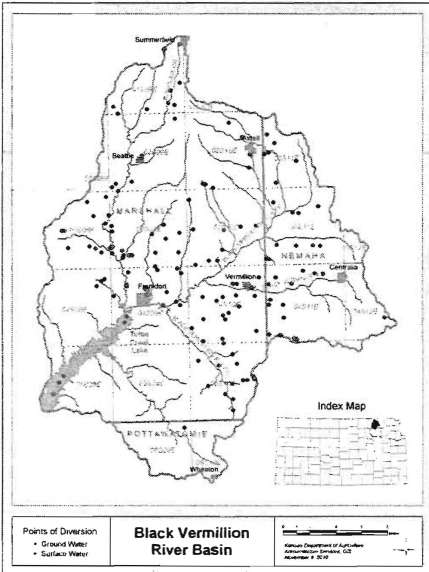
There was very little permitting activity within the compact area in Kansas in 2010. In the Big Blue River basin, the Kansas Department of Agriculture's Division of Water Resources approved 3 new groundwater permits. Two new public water supply wells were approved and installed for a Rural Water District, and one appropriation permit was approved to cover an existing irrigation project where the owner relinquished his senior right when the rate and quantity became inadequate. In the Mill Creek subbasin, the Division approved 1 groundwater permit, which covers the stockwatering use of water for a new cattle operation. The total quantity allocated is 408 AF. No short term or temporary permits were issued in the compact basins in 2010.



Metering

Last year we reported that on January 4, 2010, the Chief Engineer of the Division of Water Resources issued the Order Regarding the Installation of Water Flowmeters in the Little Blue River Basin to owners of 189 water rights and issued the Order Regarding the Installation of Water Flowmeters in the Mill Creek Basin to owners of 76 water rights requiring the installation of totalizing water flowmeters on all non-domestic, non-temporary diversions of water by December 31, 2010. The Field Office has nearly wrapped-up the required inspections related to the meter installations. We addressed a number of compliance problems related mostly to acreage not exactly as authorized by the water rights, but in most cases, our inspections identified owners complying with the terms, conditions, and limitations of their water rights. The Division issued 26 Notices of Non-Compliance Cease Diversion Orders to owners of water rights in the Little Blue River Basin and 14 Notices of Non-Compliance Cease Diversion Orders to owners of water rights in the Mill Creek Basin for failure to install the required meter. Almost all of these Notices went to owners who have not used water under the authority of their water rights in many years who did not want to spend the money for the meter installation at this time. The Notices provided a warning that the required meter is a component of the diversion works, which much be maintained, and that any review of non-use under the right would consider failure to install the required water flowmeter. We have performed all the inspections for these orders and the orders are complete at this time.

On January 3, 2011, the Chief Engineer of the Division of Water Resources issued the Order Regarding the Installation of Water Flowmeters in the Big Blue River Basin and the Order Regarding the Installation of Water Flowmeters in the Black Vermillion River Basin requiring the installation of totalizing water flowmeters on all non-domestic, non-temporary diversions of water by December 31, 2011. The Orders were issued under 148 water rights in the Big Blue River Basin and 46 water rights in the Black Vermillion River Basin.



Field Office staff conducted a public meeting in Blue Rapids to inform owners about the purpose of the Order and how to achieve compliance with the Order. The Field Office has performed about half the Black Vermillion inspections and is working on Big Blue basin inspections now.

BRO- Blatant Recurring Overpump Program

The BRO program focuses on state-wide overpumping, with the following consequences:

First offense: Notice of noncompliance.

Second offense: \$500 fine and water penalty. Generally, the water penalty consists of reducing the authorized quantity for the following year by the same amount as was overpumped.

Third offense: \$500 per day fine and a water penalty twice the amount overpumped. That means the authorized quantity for the following year is decreased by twice the amount overpumped.

Fourth offense: A one-year suspension of the overpumper's authorization to use water.

Fifth offense: The water right or permit is revoked.

In the Topeka Field Office Area, all rights files with use in excess of 5 acre-feet over authorized were investigated/reviewed. The Division issued no civil penalties or water penalties in the Big Blue, Little Blue, or Black Vermillion River Basins, or in the Mill Creek Basin in 2010.

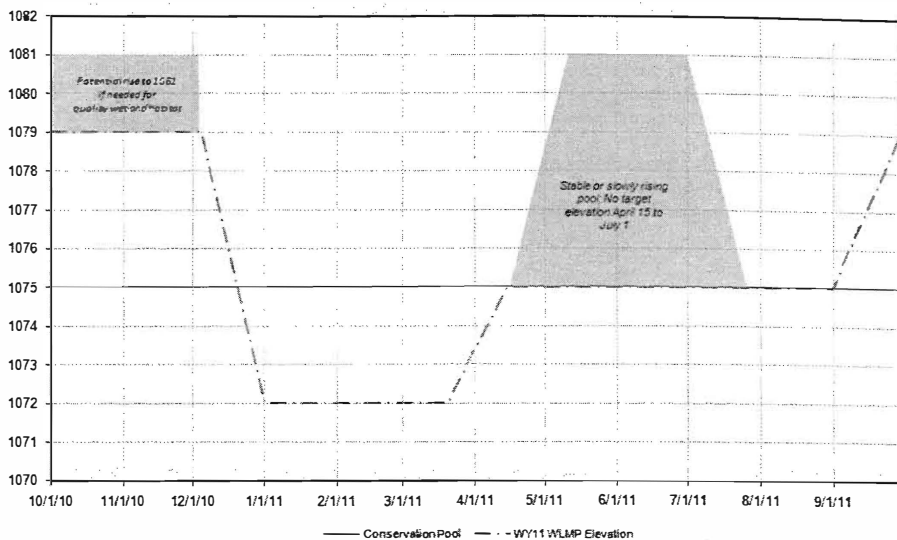
Tuttle Creek Reservoir

All work related to the earthquake reinforcements and dam structural modifications, repair and maintenance of the dam and spillway is complete.

The Army Corps of Engineers, Kansas City District, has reported that releases from Tuttle Creek (and Milford) are being affected by the Endangered Species Act (ESA) because two listed bird species, the Piping Plover and the Least Tern, have major nesting sites in the Manhattan, Kansas to Topeka, Kansas river reach. This requires the lakes to go into special operations where the Corps monitors the bird nests and, if possible, restricts releases or reduces releases from these upstream reservoirs to protect the bird nests from uncontrolled runoff. Since the lakes can only restrict local seasonal precipitation runoff, the nests are sometimes destroyed by local runoff. The Corps reported that in previous years, storage within the flood control pool of almost up to 17% has occurred at Tuttle Creek Lake to meet the ESA requirements. In 2010, the nesting habitat area was inundated by high water for the majority of the nesting season, with no nests observed, so no action was necessary in 2010.

Lake Level Management planning is currently underway for the federal reservoirs in the state of Kansas. It is anticipated that the upcoming water year plan for Tuttle Creek Reservoir will be much like last years' plan.

Tuttle Creek Reservoir
 Conservation Pool = 1075.0 Flood Pool = 1136.0 5% into FP = 1080.9



TUTTLE CREEK RESERVOIR

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 for the attraction for migrating waterfowl.
- December 5 to January 1:** Lower the lake level to elevation 1072 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 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 1080.9.

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.

Note: When necessary, the water level management plan at Tuttle Creek Reservoir will provide support for navigation. The Kansas Water Office may submit a request to intentionally store water in the flood pool for navigation support. The intent of the request would be to minimize the use of conservation storage for navigation. Changes in lake levels will be coordinated to support additional reservoir uses such as fish spawning, recreation, and waterfowl management.

**REPORT OF THE TREASURER
TO THE
KANSAS-NEBRASKA BIG BLUE RIVER COMPACT ADMINISTRATION
May 18, 2011**

Balance on Hand July 1, 2010	\$22,114.55
State Assessments	\$16,000.00
Interest Income through April 20, 2010	<u>\$79.11</u>
Funds Available as May 14, 2010	\$38,193.66
Expenditures as of May 14, 2010	
USGS	(\$14,589.00)
Lower Big Blue Natural Resources District	<u>(\$660.00)</u>
Balance on Hand	\$22,944.66
Estimated Expenditures through June 30, 2010	
Dana Cole - Audit	\$800.00
Printing Annual Report	\$100.00
Postage and Office Supplies	\$100.00
Miscellaneous	<u>\$50.00</u>
	\$1,050.00
Total Estimated Additional Expenditures	
Estimated Interest Income	\$15.00
Estimated End of Fiscal Year 2010 Balance	<u>\$21,909.66</u>

BIG BLUE RIVER COMPACT BUDGET ANALYSIS May 2011

Column A	Column B FY 2008-2009		Column C FY 2009-2010		Column D FY 2010-2011		Column E FY 2011-2012		FY 2012-2013
	Actual	Adopted May 2008	Estimated May 2008	Adopted May 2009	Estimated May 2009	Adopted May 2010	Estimated May 2010	Proposed May 2011	Estimate
EXPENDITURES									
Operations									
Stateline Gages	\$ (10,334.00)	\$ 14,000.00	\$ 21,256.00	\$ 14,000.00	\$ 14,500.00	\$ 14,500.00	\$ 14,500.00	\$ 15,000.00	\$ 15,500.00
Observation Wells	\$ (680.00)	\$ 700.00	\$ 660.00	\$ 700.00	\$ 700.00	\$ 700.00	\$ 700.00	\$ 700.00	\$ 700.00
Water Quality Committee	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Annual report - Printing	\$ (82.48)	\$ 200.00	\$ 217.41	\$ 200.00	\$ 200.00	\$ 200.00	\$ 200.00	\$ 200.00	\$ 200.00
Annual Audit	\$ (775.00)	\$ 750.00	\$ 775.00	\$ 800.00	\$ 750.00	\$ 800.00	\$ 750.00	\$ 800.00	\$ 825.00
Postage and Office Supplies	\$ -	\$ 100.00	\$ 205.97	\$ 100.00	\$ 100.00	\$ 100.00	\$ 100.00	\$ 100.00	\$ 100.00
Miscellaneous Expenses	\$ -	\$ 100.00	\$ 50.00	\$ 100.00	\$ 100.00	\$ 100.00	\$ 100.00	\$ 100.00	\$ 100.00
Total Expenses	\$ (11,871.48)	\$ 15,850.00	\$ 23,164.38	\$ 15,900.00	\$ 16,350.00	\$ 16,400.00	\$ 16,350.00	\$ 16,900.00	\$ 17,425.00
INCOME & CARRY OVER									
Assessments (Both States)	\$ 16,000.00	\$ 16,000.00	\$ 16,000.00	\$ 16,000.00	\$ 16,000.00	\$ 16,000.00	\$ 16,000.00	\$ 16,000.00	\$ 16,000.00
Interest earned	\$ 144.02	\$ 300.00	\$ 101.39	\$ 300.00	\$ 300.00	\$ 140.00	\$ 140.00	\$ 90.00	\$ 90.00
Carry Over from Prior Year	\$ 21,126.28	\$ 20,768.92	\$ 25,398.82	\$ 20,768.92	\$ 21,218.92	\$ 21,168.92	\$ 20,908.92	\$ 20,698.92	\$ 19,888.92
Total Income and Carry Over	\$ 37,270.30	\$ 37,068.92	\$ 41,500.21	\$ 37,068.92		\$ 37,308.92	\$ 37,048.92	\$ 36,788.92	\$ 35,978.92
Balance End of Year	\$ 25,398.82	\$ 21,218.92	\$ 18,335.83	\$ 21,168.92		\$ 20,908.92	\$ 20,698.92	\$ 19,888.92	\$ 18,553.92

KANSAS-NEBRASKA BIG BLUE RIVER COMPACT ADMINISTRATION
FINANCIAL STATEMENTS
JUNE 30, 2010

DANA F. COLE & COMPANY, LLP
CERTIFIED PUBLIC ACCOUNTANTS

INDEPENDENT AUDITORS' REPORT

Board of Directors
Kansas-Nebraska Big Blue River Compact Administration
Lincoln, Nebraska

We have audited the accompanying statement of cash receipts and disbursements of Kansas-Nebraska Big Blue River Compact Administration for the year ended June 30, 2010 and the related statement of cash receipts and disbursements compared to budget for the year ended June 30, 2010. These financial statements are the responsibility of the Organization's management. Our responsibility is to express an opinion on these financial statements based on our audit.

We conducted our audit in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the statement of cash receipts and disbursements is free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the statement of cash receipts and disbursements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the statement of cash receipts and disbursements. We believe that our audit provides a reasonable basis for our opinion.

As described in Note 1, this financial statement has been prepared on the cash receipts and disbursements basis of accounting, which is a comprehensive basis of accounting other than accounting principles generally accepted in the United States of America.

In our opinion, the statements referred to above present fairly, in all material respects, the cash balance at June 30, 2010 and the cash receipts and disbursements of Kansas-Nebraska Big Blue River Compact Administration for the year ended June 30, 2010, on the basis of accounting described in Note 1.

Dana F. Cole + Company, LLP

Lincoln, Nebraska
May 10, 2011

KANSAS-NEBRASKA BIG BLUE RIVER COMPACT ADMINISTRATION
STATEMENT OF CASH RECEIPTS AND DISBURSEMENTS
YEAR ENDED JUNE 30, 2010

RECEIPTS

Kansas contribution	8,000
Nebraska contribution	8,000
Interest	<u>96</u>
Total receipts	<u>16,096</u>

DISBURSEMENTS

Surface and ground water investigations	18,382
Auditing and accounting services	775
Printing of annual report	117
Postage	<u>106</u>
Total disbursements	<u>19,380</u>

DECREASE IN CASH (3,284)

CASH, beginning of year 25,399

CASH, end of year 22,115

See accompanying notes to financial statements.

KANSAS-NEBRASKA BIG BLUE RIVER COMPACT ADMINISTRATION
 STATEMENT OF CASH RECEIPTS AND DISBURSEMENTS, COMPARED TO BUDGET
 YEAR ENDED JUNE 30, 2010

	Budget	Actual	Variance Favorable (Unfavorable)
RECEIPTS			
Kansas contribution	8,000	8,000	
Nebraska contribution	8,000	8,000	
Interest	<u>140</u>	<u>96</u>	(44)
Total receipts	<u>16,140</u>	<u>16,096</u>	<u>(44)</u>
DISBURSEMENTS			
Surface and ground water investigations	15,200	18,382	(3,182)
Auditing and accounting services	800	775	25
Printing annual report	200	117	83
Postage and supplies	100	106	(6)
Miscellaneous	<u>100</u>	<u>100</u>	<u>100</u>
Total disbursements	<u>16,400</u>	<u>19,380</u>	<u>(2,980)</u>
EXCESS (DEFICIT) OF RECEIPTS OVER DISBURSEMENTS	<u>(260)</u>	<u>(3,284)</u>	<u>(3,024)</u>

See accompanying notes to financial statements.

KANSAS-NEBRASKA BIG BLUE RIVER COMPACT ADMINISTRATION
NOTES TO FINANCIAL STATEMENTS

NOTE 1. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Organization and Nature of Activities

The Kansas-Nebraska Big Blue River Compact Administration is an interstate administrative agency established, upon adoption of rules and regulations pursuant to Article III (3,4) of the Kansas-Nebraska Big Blue River Compact on April 24, 1973, to administer the Compact.

The Administration is incorporated as an Organization exempt from income tax under Code Section 501(c)(3) of the Internal Revenue Code.

Basis of Presentation

The financial statement of the Organization has been prepared on the cash receipts and disbursements basis method of accounting. Therefore, investments, receivables and payables, long-lived assets, accrued income and expenses and amortization and depreciation, which may be material in amount, are not presented. This financial statement is not intended to present the financial position, results of operations or cash flows in conformity with generally accepted accounting principles.

Function

The major function of the Administration is to establish "such stream-gauging stations, ground water observation wells, and other data collection facilities as are necessary for administering the compact."

The purpose of the compact is to:

- a. Promote interstate comity between the States of Kansas and Nebraska.
- b. To achieve equitable apportionment of the waters of the Big Blue River Basin between the two states and to promote orderly development thereof.
- c. To encourage continuation of the active pollution-abatement programs of the waters of the Big Blue River Basin.

NOTE 2. SUBSEQUENT EVENTS

In preparing the financial statements, the Organization has evaluated events and transactions for potential recognition or disclosure through May 10, 2011, the date the financial statements were available to be issued.

APPENDIX "A"

RULE 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 28, 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 be audited biennially by a certified public accountant to be selected by the Administration. Starting in fiscal year 2012, the report of the audit shall be included and become a part of the annual report of the Administration for every fiscal year with an even number.

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) For fiscal years with an even number, the report of the biennial audit 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 States 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 a 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.

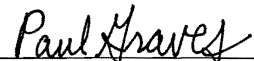
2. In the case of a hearing held to collect, analyze and report on data as to stream flows, conservation storage, and such other information as is necessary for the proper administration of the Compact, and the gathering of information, suggestions, estimates and statistics as it may need or believe 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.

Signed at Marysville, Kansas, this 18th of May, 2011.

for 

DAVID W. BARFIELD
Commissioner for the State of Kansas



BRIAN P. DUNNIGAN
Commissioner for the State of Nebraska

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

May 18, 2011

The Engineering Committee did not meet during the past year, and it was not given any special assignments from the Compact Administration. The 2010 data for this report were collected as provided by the United States Geological Survey (USGS) and the Lower Big Blue Natural Resource District (LBBNRD).

Review of Streamflow Data

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

	<u>Big Blue River</u>	<u>Little Blue River</u>
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 thru September time period of the 2010 water year (October 1, 2009 thru September 30, 2010) the mean daily flow for at the Barneston gage on the Big Blue River (Exhibit A) and the Hollenberg gage on the Little Blue River (Exhibit B) exceeded the target flows established by the Compact . Therefore, no water right administration was required.

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

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

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

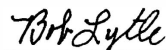
Review of Groundwater Data

The LBBNRD provided the groundwater levels for the Big Blue Basin near Beatrice (Exhibit C).

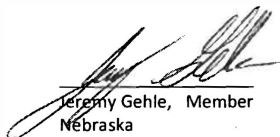
Review of wells in the Regulatory Reaches

Exhibit D is a listing of the wells within the regulatory reaches. There were no wells drilled in either of the regulatory reaches during 2011.

Respectfully submitted,



Bob Lytle, Chair
Kansas



Jeremy Gehle, Member
Nebraska

06882000 Big Blue River at Barneston, Nebr.—Continued

SUMMARY STATISTICS

	Calendar Year 2009		Water Year 2010		Water Years 1933 - 2010	
Annual total	172,370		400,141			
Annual mean	472		1,096		850	
Highest annual mean					2,781	1993
Lowest annual mean					115	1934
Highest daily mean	5,830	Jun 16	8,980	Jun 22	50,000	Jun 9, 1941
Lowest daily mean	108	Aug 25	166	Oct 4	1.0	Nov 30, 1945
Annual seven-day minimum	132	Aug 22	178	Oct 2	15	Aug 3, 1934
Maximum peak flow			12,700	Jun 2	57,700	Jun 9, 1941
Maximum peak stage			18.42	Jun 2	^a 34.30	Jun 9, 1941
Annual runoff (ac-ft)	341,900		793,700		615,800	
10 percent exceeds	853		2,780		1,760	
50 percent exceeds	308		508		280	
90 percent exceeds	188		234		107	

^a At site and datum then in use.

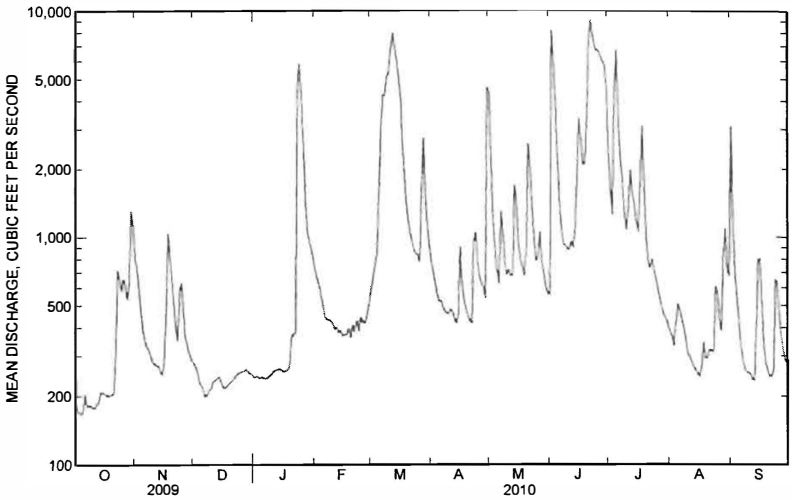


EXHIBIT A

06894025 Little Blue River at Hollenberg, KS—Continued

SUMMARY STATISTICS

	Calendar Year 2009		Water Year 2010		Water Years 1975 - 2010	
Annual total	77,925		204,172			
Annual mean	213		559		502	
Highest annual mean					1,891	1993
Lowest annual mean					173	2006
Highest daily mean	1,840	Jun 22	12,400	Jun 22	39,300	Jul 26, 1992
Lowest daily mean	58	Aug 23	80	Oct 4	26	Oct 1, 1991
Annual seven-day minimum	64	Aug 23	86	Oct 1	27	Sep 27, 1991
Maximum peak flow			13,800	Jun 22	47,800	Jul 26, 1992
Maximum peak stage			13.29	Jun 22	21.21	Jul 26, 1992
Annual runoff (ac-ft)	154,600		405,000		363,500	
10 percent exceeds	313		1,050		842	
50 percent exceeds	180		273		200	
90 percent exceeds	96		118		102	

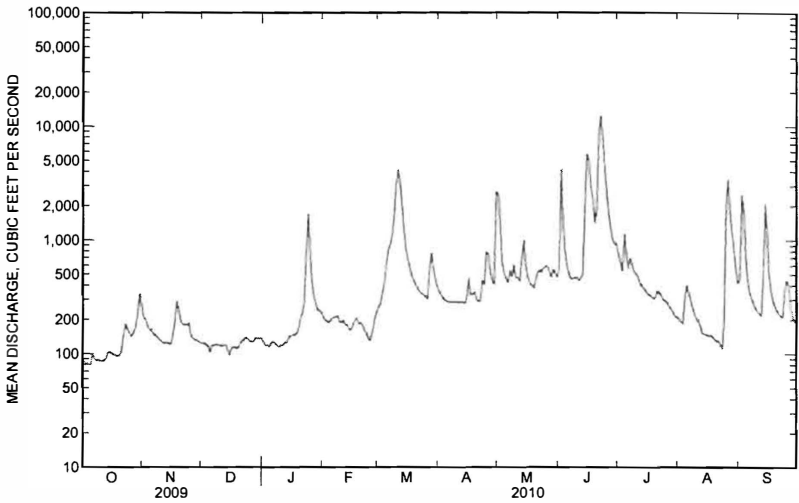


EXHIBIT B

BIG BLUE RIVER COMPACT STATIC WATER LEVELS 2010

LEGAL	SECT	SITE	TYPE	Spring 2010	Fall 2010
4N-5E	2	AAAA	OW	93.87	95.82
4N-5E	2	DDAA	IW	17.82	19.87
4N-5E	4	BBBC	IW	20.47	-----
4N-5E	9	CBCC	IW	73.63	74.61
4N-5E	10	DDAA	IW	26.19	27.71
4N-5E	11	DACA	IW	15.51	17.35
4N-5E	14	ABBB	IW	11.57	14.23
4N-5E	25	AACD	IW	19.21	20.35
5N-4E	12	ABBA	IW	17.93	19.77
5N-4E	13	BADD	IW	15.08	16.33
5N-4E	23	BABB	IW	15.33	16.25
5N-4E	24	AACD	IW	17.38	18.96
5N-5E	7	CADD	IW	61.03	64.65
5N-5E	20	BCCD	IW	18.78	22.45
5N-5E	21	DDBB	IW	54.4	57.42
5N-5E	29	CBBB	IW	14.38	15.36
5N-5E	33	AADD	IW	18.66	20.33

OW - OBSERVATION WELL

EXHIBIT C

Agreement
Between the
Engineering Committee of the Big Blue River Compact Administration
And the
Lower Big Blue Natural Resource District

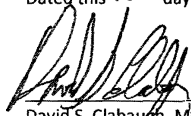
That on this the 18th day of May, 2011, the Director of the Lower Big Blue River Natural Resource District, and the Chairperson of the Engineering Committee of Big Blue River Compact Administration, mutually agree to the following:

That the Lower Big Blue NRD will take a total of 33 ground water level measurements from observation wells during the spring and fall of the 2011 calendar year as enumerated on the attachment to this agreement identified as "Attachment A".

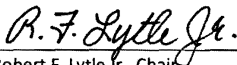
The two parties further agree to allow for variances from the wells identified on Attachment A if necessary.

This agreement is as provided by the Contract between the Kansas-Nebraska Big Blue River Compact Administration and the Lower Big Blue Natural Resources District for Ground Water Measurement Tabulations dated May 19, 2010.

Dated this 18th day of May, 2011 .

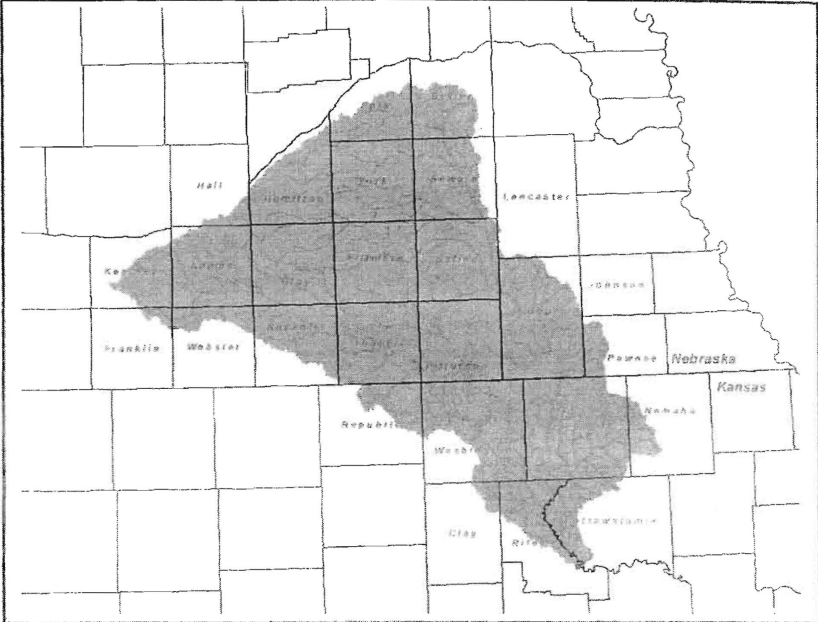


David S. Clabaugh, Manager
Lower Big Blue Natural Resource District



Robert F. Lytle Jr., Chair
Engineering Committee

KANSAS-NEBRASKA BIG BLUE RIVER COMPACT ADMINISTRATION REPORT



WATER QUALITY COMMITTEE

MAY 18, 2011

**KANSAS-NEBRASKA BIG BLUE RIVER COMPACT
WATER QUALITY COMMITTEE ANNUAL MEETING**

March 23, 2011

Background

In 1995, the Water Quality Committee and affiliated partner agencies and associations began pursuing four primary objectives designed to enhance water quality in the Big Blue River Basin of Kansas and Nebraska. These objectives were to:

1. Design, Implement, and conduct a basin wide water quality monitoring program;
2. Develop and conduct a baseline survey of farm practices utilized in the basin with emphasis on pesticide and nutrient use;
3. Develop water quality Best Management Practices (BMPs) and economics support information suitable to the basin; and,
4. Initiate and conduct water quality stewardship education and outreach programs in the basin.

The full committee and affiliated partners meet annually for a review of the status of existing projects and to plan activities for the upcoming year. Typically the annual Water Quality meeting is held immediately preceding the annual Kansas- Nebraska Compact annual meeting. Committee project work groups meet as the need arises.

Annual Meeting

The 2011 annual meeting of the Kansas- Nebraska Big Blue River Compact Administration's Water Quality Committee was held on Wednesday, March 23rd at 10am at the Lower Big Blue Natural Resource District office, 805 Dorsey Street, Beatrice, Nebraska. The following pages contain the agency and partner reports and associated program updates that were presented to the Water Quality Committee during this meeting.

5/23/2011 WQ Committee Meeting Attendees

Daniel L. Howell	Kansa Farm/ Ranch Rep	marshallcofair@networksplus.net
Daryl Andersen	Little Blue NRD	dandersen@littleblue.org
Dave Clabaugh	Lower Big Blue NRD	clabaugh@lbbnrd.org
Griffith, David	NRCS / NDEQ	david.griffith@nebraska.gov
Karla Asberry	EPA R7	asberry.karla@epa.gov
Katie Howard	Kansas Dept of Ag	katie.howard@kda.ks.gov
Kovar, Annette	NDEQ	Annette.Kovar@nebraska.gov
Melinda Bergmann	Marshall Co. Cons. District	melinda.bergmann@ks.nacdnet.net
Michl, Greg	NDEQ	greg.michl@nebraska.gov
O'Brien, Patrick	NARD	patrick.o'brien@nebraska.gov
Renee Hancock	NRCS	renee.hancock@ne.usda.gov
Romary, Craig	NE Dept. of Ag	craig.romary@nebraska.gov
Samuel Cowan	NRCS	sam.cowan@ne.usda.gov
Thomas Franti	UNL Extension	tfranti@unlnotes.unl.edu
Todd Phillips	EPA R7	phillips.todd@epamail.epa.gov
Trevor Flynn	KDHE	tflynn@kdhks.gov
Will Myers	NDEQ	will.myers@nebraska.gov
Mark Bernards	UNL Extension	mbernards2@unl.edu
Mike Van Liew	UNL Extension	mvanliew2@unl.edu
Rod DeBuhr	UBBNRD	rdebuhr@upperbigblue.org
Dusting Wilcox	LBBNRD	wilcox@lbbnrd.org
Tyler Weishahn	LBBNRD	weishahn@lbbnrd.org
Luke Zakrzewski	NDEQ	luke.zakrzewski@nebraska.gov
Jennifer Swanson	NDEQ	jennifer.swanson@nebraska.gov
Pete Davis	EPA R7	davis.peter@epa.gov

Nebraska Summary of Section 303(d) and Total Maximum Daily Load (TMDL) Activities in the Big Blue & Little Blue River Basins

Integrated Report

The Nebraska Department of Environmental Quality (NDEQ) submitted the 2010 Integrated Report to EPA Region 7 on March 30, 2010. The Integrated Report is the combination of the Clean Water Act (CWA) Section 303(d) list of impaired waterbodies and the CWAs Section 305(b) Water Quality Report. On January 26, 2011 EPA Region 7 approved Nebraska's 2010 Integrated Report.

Similar to the previous Integrated Reports (IR), the 2010 IR includes multiple categories of waterbodies to present information in a descriptive and comprehensive manner. The five waterbody categories are as follows:

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, 4B, 4C and 4R 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 general description does not exclude parameters and can be utilized when appropriate justification is provided.

Category 4R – Waterbody data exceeds the impairment threshold, however a TMDL may not be needed. 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 or non representative 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.**

The 2010 Integrated Report assessment status for waterbodies in the Big Blue and Little Blue River Basins are found in the table below.

Basin	Category 1	Category 2	Category 3	Category 4a	Category 4b	Category 4c	Category 4r	Category 5	Basin Total
Big Blue Streams	0	15	32	0	0	0	0	16	63
Big Blue Lakes	0	8	13	1	0	0	0	9	31
Little Blue Streams	0	5	24	0	0	0	0	9	38
Little Blue Lakes	0	4	3	0	0	0	0	6	13

Parameters identified as impairing beneficial uses in these river basins include: algal blooms, atrazine, *E. coli*, elevated pH, fish consumption advisory (mercury index or hazard index (typically Dieldrin & PCBs)), impaired aquatic community, low dissolved oxygen, nutrients, and selenium.

For streams in both basins *E. coli* and atrazine top the list for new impairments, while nutrients make the majority of new impairments in the lakes.

There has been some shuffling around of lake listings with changes to the nutrient assessment methodology for lakes in 2010. Assessment thresholds for the 2010 Integrated Report are lower for the Big and Little Blue basins when compared to criteria used in 2008.

TMDLs

The EPA has approved seven TMDLs written by NDEQ for these river basins. Five of the approved TMDLs were for *E. coli*, one was for sediment and one was for phosphorus. NDEQ will be working on writing TMDLs for the atrazine impairments in these basins later this fall/winter.

NDEQ will also be submitting, as part of the 2012 Integrated Report, a Category 4c demonstration for Selenium. Ten stream segments within the Big Blue, Lower Platte and Niobrara basins are included in this document. The Big Blue segments include: Big Blue River (BB1-20000), Turkey Creek (BB2-10000), West Fork Big Blue River (BB3-10000), and Lincoln Creek (BB4-20800).

Ambient Monitoring for streams continues in 2011 with Basin Rotation monitoring revisiting the Big and Little Blue basins in 2012.

Big Blue River/Tuttle Creek Lake Interstate Targeted Watershed Project Update

Introduction

The Big Blue River/Tuttle Creek Lake Interstate Targeted Watersheds Grant (TWG) Project is a collaborative effort between Nebraska and Kansas to address multi-jurisdictional water quality problems involving excessive runoff of sediment, nutrients, herbicides, and bacteria. Tuttle Creek Lake is a major source of water (up to 50 percent of the flow) for the Kansas River, which supplies public drinking water for the urban populations of Kansas City, Topeka, and Lawrence. Tuttle Creek Lake is listed on the Kansas Section 303(d) list as impaired for sedimentation, eutrophication, atrazine, and alachlor. In addition to Tuttle Creek Lake water quality issues there are many other reservoirs and stream segments listed as impaired within the Big Blue and Little Blue River Basins in Nebraska and Kansas. The TWG project builds upon existing watershed partnerships by integrating funding sources from federal, state, and local programs to implement conservation practices as well as existing local watershed and total maximum daily load plans. The EPA is providing \$810,000 in grant funds and the LBBNRD and LBNRD are providing match funds of \$108,000 and \$162,000 respectively for a total project cost of \$1,080,000.

Conservation Practice Implementation Progress

One of the challenges of this project has been lower than anticipated landowner participation and slow implementation of desired conservation practices. To address this issue the targeted sub-watershed area and the number of conservation practices eligible for cost-share assistance were expanded in an effort to assist with securing landowner agreements. This modification allowed for all of the project money allocated for conservation practices in Nebraska and Kansas to be obligated prior to the sign-up deadline of March 31, 2010. In Nebraska, this includes 51 individual contracts for a total of \$350,664. In Kansas, this includes 22 individual contracts for a total of \$142,267. Currently, in both Nebraska and Kansas, most of the conservation practice work has been completed, or is near completion. It is anticipated nearly all contracts will be paid and closed prior to the spring planting season.

Water Quality Monitoring

A significant amount of historical water quality data has already been collected throughout the project area. This information will be used to document pre-project baseline water quality conditions and pollutant loadings. The water quality monitoring component specific to this project was successfully completed in September of 2010. Monitoring occurred weekly at 13 sites and the data will be used to document and characterize water quality conditions in the Tuttle Creek Lake watershed during and after implementation of BMPs. Specifically, the monitoring data will be assessed to determine if the implementation of no-till farming systems, riparian buffer strips, and other BMPs have improved water quality, reduced the number of water quality criteria violations, and reduced sediment, nutrient, and herbicide loadings. Assessment of the water quality data began this spring and will continue through the next few months.

Water Quality Modeling

The water quality modeling component of the project is currently in the beginning stages and is scheduled to be completed in the next few months. Modeling efforts will be used to estimate the loading reductions of sediment and nutrients in the project area based on BMPs implemented during the project timeframe. The TWG project is scheduled to be completed by September 30, 2011 and the final project report will follow.

**Tuttle Creek TWG Expenditures as of
March, 2011**

Budget Category	Total Expenditures	Committed Contractual \$\$	Original Budgeted Amount	Un-Spent Balances	Committed but Un-Spent	Notes
NE - WQ Specialist (LBBNRD)	\$ 141,750	\$ 28,000	\$ 150,000	\$ -	\$ 8,250	1
KS - BMP Contracts (MCCD)	\$ 89,475	\$ 142,267	\$ 150,000	\$ 7,733	\$ 52,792	
WQ Specialist (MCCD)	\$ 14,786	\$ 10,000	\$ 25,000	\$ -	\$ 10,214	2
Workshops (MCCD)	\$ 1,500	\$ 1,500	\$ 3,000	\$ -	\$ 1,500	2
Overhead (MCCD)	\$ 2,500	\$ 2,000	\$ 4,500	\$ -	\$ 2,000	2
NE - BMP Contracts (LBBNRD)	\$ 271,766	\$ 347,500	\$ 347,500	\$ -	\$ 75,734	
Overhead (LBBNRD)	\$ 15,000	\$ 5,000	\$ 20,000	\$ -	\$ 5,000	
Monitoring and Personnel (NDEQ)	\$ 98,526	\$ -	\$ 100,000	\$ -	\$ 1,474	
Travel (NDEQ)	\$ 5,166	\$ -	\$ 10,000	\$ 4,834		
Totals	\$ 640,469	\$ 536,267	\$ 810,000	\$ 12,567	\$ 156,964	
Non-federal Match (LBNRD/ LBBNRD)		\$ 270,000	\$ 270,000	\$ -		3
Total Project Amount			\$ 1,080,000			
<p>Note 1 - \$28,000 was amended to LBBNRD contract for technician work on BMP implementation</p> <p>Note 2 - Additional expenditures are anticipated pending requested invoice submittal</p> <p>Note 3 - LBNRD has confirmed match expenditures of \$161,967. LBBNRD has submitted match expenditures of \$108,157.86</p>						



Dave Heineman
Governor

State of Nebraska

DEPARTMENT OF AGRICULTURE
GREGORY A. IBACH
Director

Nebraska Department of Agriculture (NDA)

Big Blue River Compact-Water Quality Committee Report

NDA has met with Syngenta, the Lower Big Blue Natural Resources District (NRD), Nebraska Corn Growers Association, and University of Nebraska Extension to discuss the ecological monitoring for atrazine being done in several watersheds in Nebraska. NDA is very supportive of the efforts begun by the NRD and Corn Growers to develop a watershed advisory group to determine the best course of action by individual growers. Extension has also incorporated extensive information about atrazine monitoring and BMPs in commercial and private applicator training sessions.

NDA recently worked with Syngenta and University Extension to publish applicator recordkeeping books, which will be distributed mainly in the southeast and south central part of the state where atrazine concentrations and loads are of concern.

NDA is in consultation with University of Nebraska Extension specialists on developing an atrazine handout that will likely provide information on spray setbacks near waterbodies and groundwater wells, as well as pesticide and field runoff management BMPs to consider in these watersheds and others where atrazine concentrations and loads are in excess of aquatic life standards.

NDA continues to administer the Nebraska Buffer Strip Program, which provides financial incentives to install filter strips and riparian forested buffers for reducing agrichemicals in runoff water. The program is funded through pesticide registration fees and will be providing incentives of approximately \$682,000 annually for 7,600 acres of filter strips. The program is co-administered by Nebraska's NRDs and USDA NRCS. See the attached summary for more information – note that a large percentage of the acres and funding for the program has been and continues to be targeted in the Big and Little Blue River basin.

More information on NDA's Pesticide Program, including the Nebraska Buffer Strip Program and water quality information links, can be found at www.agr.ne.gov.

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Nebraska Buffer Strip Program Summary

NRD	# Applications	Total Acres	Miles	Irrigated Acres	Annual Application Dollars	'BSP Only' Acres	BSP only Dollars	Contracted Acres	Annual Contracted Dollars
Central Platte	31	288	29	222	\$43,879.46	153	\$25,853.54	288	\$43,879.46
Leads & Clark	18	109	13	49	\$8,958.99	27	\$4,670.14	47	\$4,188.45
Wells Basin	65	362	55	220	\$47,849.35	234	\$39,777.59	360	\$47,399.35
Lower Big Blue	187	1,126	132	295	\$83,486.87	364	\$52,961.07	1,097	\$79,132.99
Lower Elkhorn	162	1,376	143	257	\$75,908.60	230	\$37,051.00	1,309	\$72,545.67
Lower Loup	68	895	76	725	\$164,817.03	852	\$162,273.17	808	\$147,257.57
Lower Nebraska	4	41	3	38	\$8,793.54	41	\$8,793.54	41	\$8,793.54
Lower Platte North	10	111	11	68	\$13,707.37	35	\$7,965.00	0	\$0.00
Lower Platte South	46	250	35	7	\$14,698.01	89	\$10,881.62	243	\$13,356.31
Lower Republican	1	3	0	0	\$298.08	3	\$298.08	3	\$298.08
Middle Republican	4	56	5	16	\$5,061.91	44	\$4,982.00	44	\$4,982.00
Nemans	191	1,600	185	49	\$61,639.20	123	\$18,517.43	1,573	\$60,846.69
North-Nisour's River	32	232	24	0	\$18,169.81	89	\$14,759.08	232	\$18,169.81
South Platte	30	437	26	171	\$44,802.82	306	\$44,018.05	428	\$42,732.82
Tri-Basin	7	67	7	60	\$11,561.56	67	\$11,561.56	52	\$8,366.56
Upper Platte	6	69	4	31	\$4,803.13	2	\$342.82	69	\$4,803.13
Upper Big Blue	26	223	32	148	\$31,246.33	142	\$23,662.91	216	\$30,416.59
Upper Elkhorn	5	155	9	155	\$34,605.00	155	\$34,605.00	155	\$34,605.00
Upper Republican	26	246	15	39	\$8,185.47	44	\$5,568.47	246	\$8,185.47
TOTAL	919	7,644	804	2,548	\$682,472.53	2,998	\$508,542.07	7,209	\$629,959.49

LAND-USE DOLLARS

Annual \$ for Irrigated w/o CRP

\$365,076.64

Annual \$ for Irrigated w/ CRP

\$88,226.93

Annual \$ for Non-Irrigated w/o CRP

\$145,885.89

Annual \$ for Non-Irrigated w/ CRP

\$82,518.07

LAND-USE ACRES

Irrigated Acres w/o CRP

1752

Irrigated Acres w/ CRP

793

Non-Irrigated Acres w/o CRP

1268

Non-Irrigated Acres w/ CRP

3828

BUFFER TYPE

Forested Buffer Acres

161.9

Potential Obligation for Approved Applications

\$6,300,308.76

Total Obligation for Approved Contracts

\$5,825,007.03

KDHE – Overview
Lower Big Blue and Lower Little Blue Watersheds
March 23, 2011

HUC 8 – 10270205 – Lower Big Blue

Station	Waterbody	Impairment
LM021001	Tuttle Cr Lake	TMDLs: Siltation, Eutrophication, Atrazine, Alachlor
SC233	Big Blue River	TMDLs: FCB, Atr Listings: TSS, TP, pH, Pb, Cu, Bio
SC240	Big Blue River	TMDLs: FCB, Atr Listings: TSS, TP, PH, Pb, Cu
SC502	Fancy Cr	TMDLs: FCB, Atr Listings: SO4
SC505	Black Vermillion R.	TMDLs: FCB, Atr Listings: TSS, TP, Cu, Bio
SC717	Horseshoe Cr	TMDLs: FCB, Atr Listings: TSS, TP, SO4, Pb
SC731	North Elm Cr	TMDLs: Atr Listings: TP

HUC8 – 10270207 Lower Little Blue

SC232	Little Blue R	TMDLs: FCB, Atr Listings: TSS, TP, pH, Pb, Cu, Bio
SC507	Mill Creek	TMDLs: FCB, Atr Listings: TSS, Pb, Cu
SC712	Rose Creek	TMDLs: Atr Listings: TSS, TP, Pb, Cu
SC 741	Little Blue River	TMDLs: FCB, Atr Listings: TSS, TP, Pb, Cu

New Listings: SC502 Fancy Cr near Randolph, Sulfate
Delisted Waters LM073701 Centralia Lake, Atrazine
 SC240 Big Blue River near Blue Rapids, Beryllium
 SC505 Black Vermillion River near Frankfort, Lead

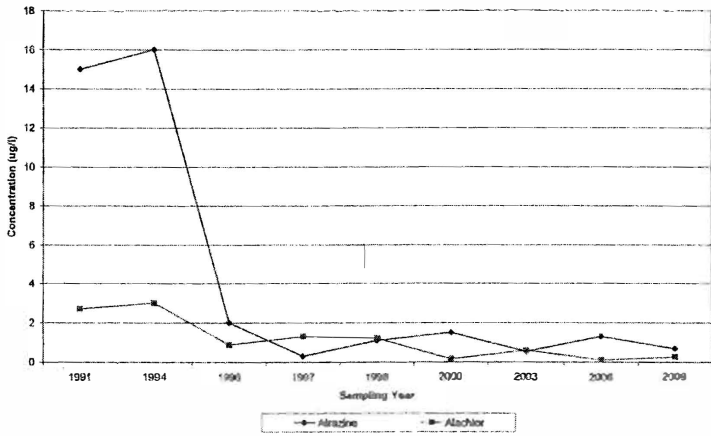
KDHE Stream Station Summary.

Stream Station	Atrazine % > 3ug/l 1990-2005	Atrazine % >3ug/l 2006-2010	TP Avg. 1990-2005 (mg/l)	TP Avg. 2006-2010 (mg/l)	TSS Avg. 1990-2005 (mg/l)	TSS Avg. 2006-2010 (mg/l)
Lower Big Blue – 10270205						
SC233 Big Blue River	19.6	15.4	0.854	0.959	301	273
SC240 Big Blue River	22.4	15.4	0.734	0.746	392	337
SC502* Fancy Cr	11.5	50	0.226	0.296	69.6	72.3
SC505 Black Vermillion R.	17.9	15.4	0.335	0.432	220	351
SC717* Horseshoe Cr	25	25	0.502	0.243	196	61.2
Lower Little Blue - 10270207						
SC232 Little Big Blue	12.1	14.3	0.534	0.553	265	204
SC507 Mill Cr	22.2	23.1	0.287	0.350	163	234
SC712* Rose Cr	50	33.3	0.907	0.711	426	227
SC741 Little Blue R	27.3	14.3	0.493	0.535	236	300

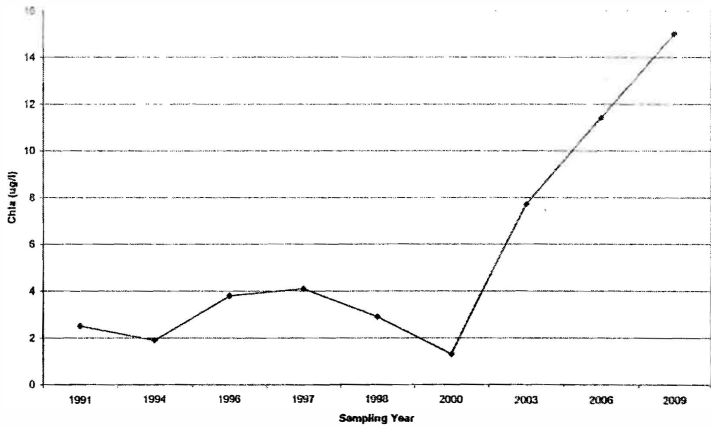
Tuttle Creek Lake – KDHE Sampling Data

Sampling Year	Atrazine (ug/l)	Alachlor (ug/l)	TP (mg/l)	TSS (mg/l)	Chl-a (ug/l)
1991	15	2.7	0.25	10	2.5
1994	16	3	0.14	18	1.9
1996	2	0.88	0.2	16	3.8
1997	0.3	1.3	0.2	11	4.1
1998	1.1	1.2	0.28	9	2.9
2000	1.5	0.16	0.19	6	1.3
2003	0.53	0.58	0.26	19	7.7
2006	1.3	0.1	0.2	10	11.4
2009	0.69	0.26	0.22	16	15

Tuttle Cr Lake



Tuttle Cr Lake - Chla



Kansas TMDL on the web at:
<http://www.kdheks.gov/tmdl/krtmdl.htm>

Subbasin: Lower Big Blue (HUC 10270205)				
<u>BIG BLUE RIVER ABOVE TUTTLE CREEK (FCB)</u>	FCB	High	SC233, SC240, SC717	1/26/00
<u>BLACK VERMILLION RIVER (FCB)</u>	FCB	High	SC128, SC129, SC130, SC131, SC132, SC133, SC134, SC141, SC505	1/26/00
<u>FANCY CREEK (FCB)</u>	FCB	Medium	SC502	1/26/00
<u>TUTTLE CREEK LAKE & WATERSHED (Atr)</u>	Atr	High	LM021001, SC502, SC505, SC240, SC232, SC233, SC507, SC712, SC717, SC741	8/3/07
Subbasin: Lower Little Blue (HUC 10270207)				
<u>LITTLE BLUE RIVER (FCB)</u>	FCB	High	SC232, SC240, SC507	1/26/00

Subbasin: Lower Big Blue (HUC 10270205)				
<u>CENTRALIA LAKE (AP)</u>	AP	Medium	LM073701	1/26/00
<u>CENTRALIA LAKE (EU)</u>	EU	Medium	LM073701	1/26/00
<u>CENTRALIA LAKE (pH)</u>	pH	Medium	LM073701	1/26/00
<u>TUTTLE CREEK LAKE (EU)</u>	EU	High	LM021001	1/26/00
<u>TUTTLE CREEK LAKE (Atr)</u>	Atr	High	LM021001	1/25/00
<u>TUTTLE CREEK LAKE (Silt)</u>	Silt	High	LM021001	1/26/00
<u>TUTTLE CREEK LAKE (Ala)</u>	Ala	High	LM021001	1/26/00
<u>TUTTLE CREEK LAKE & WATERSHED (Atr)</u>	Atr	High	LM021001, SC502, SC505, SC240, SC232, SC233, SC507, SC712, SC717, SC741	8/3/07
Subbasin: Lower Little Blue (HUC 10270207)				
<u>LAKE IDLEWILD (EU)</u>	EU	Low	LM061201	1/26/00
<u>WASHINGTON CO SFL (DO)</u>	DO	Low	LM010901	1/26/00
<u>WASHINGTON CO SFL (AP)</u>	AP	Low	LM010901	1/26/00
<u>WASHINGTON WA (EU)</u>	EU	Low	LM010941	1/26/00
<u>WASHINGTON WA (Silt)</u>	Silt	Low	LM010941	1/26/00

2010 303(d) List of All Impaired/Potentially Impaired Waters Kansas Lower Republican Basin

10270205

Lower Big Blue

Cat.	Stream/Lake	Impaired Use	Impairment	Station	Counties	Body Type	Priority	Comment
5	Big Blue River Near Oketo	Aquatic Life	Biology	SC233	MS	Watershed	Low	
5	Black Vermillion River Near Frankfort	Aquatic Life	Biology	SC505	MS,NM	Watershed	Low	SB128
5	Big Blue River Near Blue Rapids	Aquatic Life	Copper	SC240	MS	Watershed	Low	
5	Big Blue River Near Oketo	Aquatic Life	Copper	SC233	MS	Watershed	Low	
5	Black Vermillion River Near Frankfort	Aquatic Life	Copper	SC505	MS,NM	Watershed	Low	Recent Trends indicate concern
5	Big Blue River Near Blue Rapids	Aquatic Life	Lead	SC240	MS	Watershed	Low	
5	Big Blue River Near Oketo	Aquatic Life	Lead	SC233	MS	Watershed	Low	
5	Horseshoe Creek Near Marysville	Aquatic Life	Lead	SC717	MR, CS	Watershed	Low	Recent Trends Do Not Indicate Concern
5	Big Blue River Near Blue Rapids	Aquatic Life	pH	SC240	MS	Watershed	Low	
5	Big Blue River Near Oketo	Aquatic Life	pH	SC233	MS	Watershed	Low	
5	Fancy Creek Near Randolph	Water Supply	Sulfate	SC502	WS, CY, RL	Watershed	Low	
5	Horseshoe Creek Near Marysville	Water Supply	Sulfate	SC717	MR, CS	Watershed	Low	
5	Big Blue River Near Blue Rapids	Aquatic Life	Total Phosphorus	SC240	MS	Watershed	Low	median value: 0.613 > median flag value:0.201
5	Big Blue River Near Oketo	Aquatic Life	Total Phosphorus	SC233	MS	Watershed	Low	median value: 0.8665 > median flag value:0.201
5	Black Vermillion River Near Frankfort	Aquatic Life	Total Phosphorus	SC505	MS,NM	Watershed	Low	median value: 0.259 > median flag value:0.201

Thursday, September 23, 2010

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2010 303(d) List of All Impaired/Potentially Impaired Waters Kansas Lower Republican Basin

10270205
Lower Big Blue

Cat.	Stream/Lake	Impaired Use	Impairment	Station	Counties	Body Type	Priority	Comment
5	Horseshoe Creek Near Marysville	Aquatic Life	Total Phosphorus	SC717	MR, CS	Watershed	Low	median value: 0.287 > median flag value:0.201
5	North Elm Creek Near Oketo	Aquatic Life	Total Phosphorus	SC731	MS, NM	Watershed	Low	median value: 0.202 > median flag value:0.201
5	Big Blue River Near Blue Rapids	Aquatic Life	Total Suspended Solids	SC240	MS	Watershed	Low	median value: 101 > median flag value:50
5	Big Blue River Near Oketo	Aquatic Life	Total Suspended Solids	SC233	MS	Watershed	Low	median value: 108.5 > median flag value:50
5	Black Vermillion River Near Frankfort	Aquatic Life	Total Suspended Solids	SC505	MS,NM	Watershed	Low	median value: 55 > median flag value:50
5	Horseshoe Creek Near Marysville	Aquatic Life	Total Suspended Solids	SC717	MR, CS	Watershed	Low	
4a	Tuttle Creek Lake	Aquatic Life	Alachlor	LM021001	MS, RL, PT	Lake	High	TMDL Approved on 1/26/2000
4a	Centralia Lake	Recreation	Aquatic Plants	LM073701	NM	Lake	Medium	TMDL Approved on 1/26/2000
4a	Big Blue River Near Blue Rapids	Aquatic Life	Atrazine	SC240	MS	Watershed	High	TMDL Approved on 8/3/2007
4a	Big Blue River Near Oketo	Aquatic Life	Atrazine	SC233	MS	Watershed	High	TMDL Approved on 8/3/2007
4a	Black Vermillion River Near Frankfort	Aquatic Life	Atrazine	SC505	MS,NM	Watershed	High	TMDL Approved on 8/3/2007
4a	Fancy Creek Near Randolph	Aquatic Life	Atrazine	SC502	WS, CY, RL	Watershed	High	TMDL Approved on 8/3/2007
4a	Horseshoe Creek Near Marysville	Aquatic Life	Atrazine	SC717	MR, CS	Watershed	High	TMDL Approved on 8/3/2007

2010 303(d) List of All Impaired/Potentially Impaired Waters Kansas Lower Republican Basin

10270205

Lower Big Blue

Cat.	Stream/Lake	Impaired Use	Impairment	Station	Counties	Body Type	Priority	Comment
4a	North Elm Creek Near Oketo	Aquatic Life	Atrazine	SC731	MS, NM	Watershed	High	TMDL Approved on 8/3/2007
4a	Tuttle Creek Lake	Aquatic Life	Atrazine	LM021001	MS, RL, PT	Lake	High	TMDL Approved on 8/3/2007
4a	Centralia Lake	Aquatic Life	Eutrophication	LM073701	NM	Lake	Medium	TMDL Approved on 1/26/2000
4a	Tuttle Creek Lake	Aquatic Life	Eutrophication	LM021001	MS, RL, PT	Lake	High	TMDL Approved on 1/26/2000
4a	Big Blue River Near Blue Rapids	Recreation	Fecal Coli	SC240	MS	Watershed	High	TMDL Approved on 1/26/2000
4a	Big Blue River Near Oketo	Recreation	Fecal Coli	SC233	MS	Watershed	High	TMDL Approved on 1/26/2000
4a	Black Vermillion River Near Frankfort	Recreation	Fecal Coli	SC505	MS, NM	Watershed	High	TMDL Approved on 1/26/2000
4a	Fancy Creek Near Randolph	Recreation	Fecal Coli	SC502	WS, CY, RL	Watershed	Medium	TMDL Approved on 1/26/2000
4a	Horseshoe Creek Near Marysville	Recreation	Fecal Coli	SC717	MR, CS	Watershed	Low	TMDL Approved on 1/26/2000
4a	Centralia Lake	Aquatic Life	pH	LM073701	NM	Lake	Medium	TMDL Approved on 1/26/2000
4a	Tuttle Creek Lake	Water Supply	Siltation	LM021001	MS, RL, PT	Lake	High	TMDL Approved on 1/26/2000
3	Rocky Ford W.A.	Food Procurement	Mercury	LM020601	RL	Lake		Small sample size

Thursday, September 23, 2010

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2010 303(d) List of All Impaired/Potentially Impaired Waters Kansas Lower Republican Basin

10270207
Lower Little Blue

Cat.	Stream/Lake	Impaired Use	Impairment	Station	Counties	Body Type	Priority	Comment
5	Little Blue River Near Hollenberg	Aquatic Life	Biology	SC232	RP, WS	Watershed	Low	
5	Little Blue River Near Hollenberg	Aquatic Life	Copper	SC232	RP, WS	Watershed	Low	
5	Little Blue River Near Waterville	Aquatic Life	Copper	SC741	WS, MS	Watershed	Low	
5	Mill Creek Near Hanover	Aquatic Life	Copper	SC507	RP, WS	Watershed	Low	Recent Trends indicate concern
5	Rose Creek Near Narka	Aquatic Life	Copper	SC712	RP	Watershed	Low	
5	Washington Co. SFL	Aquatic Life	Eutrophication	LM010901	WS	Lake	Low	
5	Little Blue River Near Hollenberg	Aquatic Life	Lead	SC232	RP, WS	Watershed	Low	
5	Little Blue River Near Waterville	Aquatic Life	Lead	SC741	WS, MS	Watershed	Low	
5	Mill Creek Near Hanover	Aquatic Life	Lead	SC507	RP, WS	Watershed	Low	
5	Rose Creek Near Narka	Aquatic Life	Lead	SC712	RP	Watershed	Low	
5	Washington W.A.	Aquatic Life	Lead	LM010941	WS	Lake	Low	
5	Little Blue River Near Hollenberg	Aquatic Life	pH	SC232	RP, WS	Watershed	Low	
5	Little Blue River Near Hollenberg	Aquatic Life	Total Phosphorus	SC232	RP, WS	Watershed	Low	median value: 0.389 > median flag value:0.201
5	Little Blue River Near Waterville	Aquatic Life	Total Phosphorus	SC741	WS, MS	Watershed	Low	median value: 0.337 > median flag value:0.201
5	Rose Creek Near Narka	Aquatic Life	Total Phosphorus	SC712	RP	Watershed	Low	median value: 0.407 > median flag value:0.201
5	Little Blue River Near Hollenberg	Aquatic Life	Total Suspended Solids	SC232	RP, WS	Watershed	Low	median value: 53 > median flag value:50

2010 303(d) List of All Impaired/Potentially Impaired Waters Kansas Lower Republican Basin

10270207

Lower Little Blue

Cat.	Stream/Lake	Impaired Use	Impairment	Station	Counties	Body Type	Priority	Comment
5	Little Blue River Near Waterville	Aquatic Life	Total Suspended Solids	SC741	WS, MS	Watershed	Low	
5	Mill Creek Near Hanover	Aquatic Life	Total Suspended Solids	SC507	RP, WS	Watershed	Low	median value: 52 > median flag value:50
5	Rose Creek Near Narka	Aquatic Life	Total Suspended Solids	SC712	RP	Watershed	Low	
4a	Washington Co. SFL	Recreation	Aquatic Plants	LM010901	WS	Lake	Low	TMDL Approved on 1/26/2000
4a	Little Blue River Near Hollenberg	Aquatic Life	Atrazine	SC232	RP, WS	Watershed	High	TMDL Approved on 8/3/2007
4a	Little Blue River Near Waterville	Aquatic Life	Atrazine	SC741	WS, MS	Watershed	High	TMDL Approved on 8/3/2007
4a	Mill Creek Near Hanover	Aquatic Life	Atrazine	SC507	RP, WS	Watershed	High	TMDL Approved on 8/3/2007
4a	Rose Creek Near Narka	Aquatic Life	Atrazine	SC712	RP	Watershed	High	TMDL Approved on 8/3/2007
4a	Washington Co. SFL	Aquatic Life	Dissolved Oxygen	LM010901	WS	Lake	Low	TMDL Approved on 1/26/2000
4a	Lake Idlewild	Aquatic Life	Eutrophication	LM061201	MS	Lake	Low	TMDL Approved on 1/26/2000
4a	Washington W.A.	Aquatic Life	Eutrophication	LM010941	WS	Lake	Low	TMDL Approved on 1/26/2000
4a	Little Blue River Near Hollenberg	Recreation	Fecal Coli	SC232	RP, WS	Watershed	High	TMDL Approved on 1/26/2000
4a	Little Blue River Near Waterville	Recreation	Fecal Coli	SC741	WS, MS	Watershed	High	TMDL Approved on 1/26/2000
4a	Mill Creek Near Hanover	Recreation	Fecal Coli	SC507	RP, WS	Watershed	High	TMDL Approved on 1/26/2000
4a	Washington W.A.	Water Supply	Siltation	LM010941	WS	Lake	Low	TMDL Approved on 1/26/2000

Thursday, September 23, 2010

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2010 303(d) List of All Impaired/Potentially Impaired Waters Kansas Lower Republican Basin

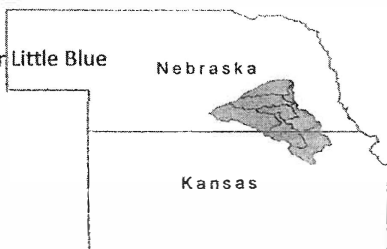
10270207

Lower Little Blue

Cat.	Stream/Lake	Impaired Use	Impairment	Station	Counties	Body Type	Priority	Comment
3	Washington W.A.	Aquatic Life	Dissolved Oxygen	LM010941	WS	Lake		Small sample size

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

9 Element Watershed Plan Overview



Impairments to be addressed

Directly addressing High Priority TMDLs for:

- Bacteria – Big Blue River above Tuttle Creek
- 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

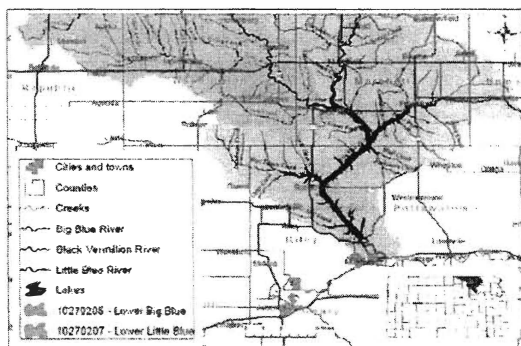


Figure 1. Map of Lower Big Blue/Lower Little Blue Rivers Watershed.

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 grazing density in the watershed 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 riparian areas that were considered “barren”.

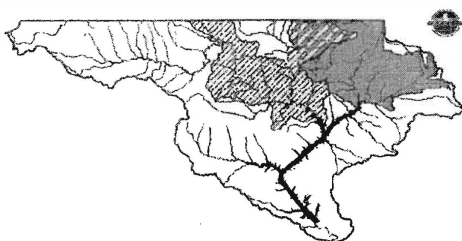


Figure 14. SWAT Targeted Areas in the Watershed for Streambank, Cropland and Livestock BMP Placement.

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
- Encouragement of Continuous No-till by producers
- Preparation of Nutrient Management Plans with producers
- Grassed Waterways
- Streambank Stabilization

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
- Encouragement of Continuous No-till implementation by producers
- Preparation of Nutrient Management Plans with producers
- Grassed Waterways
- Subsurface Fertilizer
- Streambank Stabilization
- 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
- 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.



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
- Promotion of alternative watering sites away from streams

Atrazine Reducing Cropland BMPs:

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

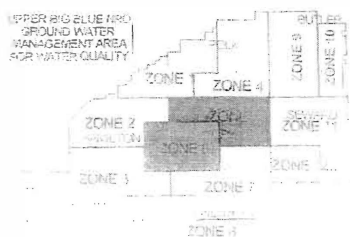
The current estimated pollutant load for atrazine is 63,145 pounds in the months of May and June in Tuttle Creek Lake. The load needs to be reduced by 55,883 pounds to meet the TMDL.



**Upper Big Blue Natural Resources District
Groundwater Quality Report
To
Blue River Compact Water Quality Committee
March 23, 2011**

Groundwater Nitrates

The district is divided into twelve management zones for ground water quality management. The primary ground water quality management concern is nitrate. A ten township area York County and two townships in Hamilton County (Zones 5 & 6) were designated a Phase II management area to address increased ground water nitrate levels. The 2010 median ground water nitrate level in Zone 5 rose from 11.0 ppm to 12.0 ppm. In Zone 6 the median nitrate rose from 8.1 ppm to 9.2 ppm. Phase II management requires farm operators to attend a training session on best management practices related to fertilizer and irrigation management. It also requires deep (36") soil sampling, irrigation scheduling and annual BMP reports. As illustrated in the attached graphs, groundwater nitrates continue to rise. However producers annual reports indicate that changes in management practices are improving nitrogen use efficiency and reducing residual soil nitrates. The rest of the district remains in phase I management for groundwater nitrates. Under phase I management the application of anhydrous ammonia may not occur until November 1, while application of dry and liquid nitrogen fertilizers must wait until March 1.



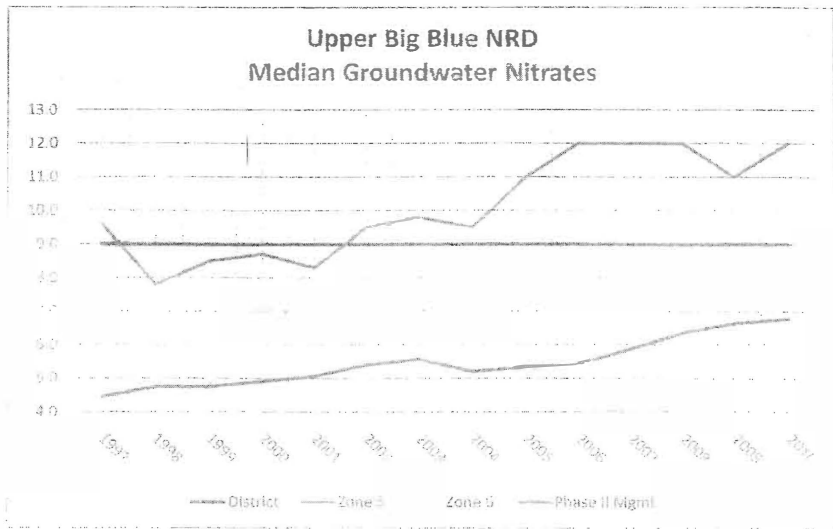
CROP-TIP

CROP-TIP is an irrigation demonstration sponsored by The District and Cornerstone Bank near York. The purpose of the project is to show producers ways to reduce groundwater withdrawal and reduce nitrate leaching through improvements in irrigation methods. 2011 will be the eighth year of the project.

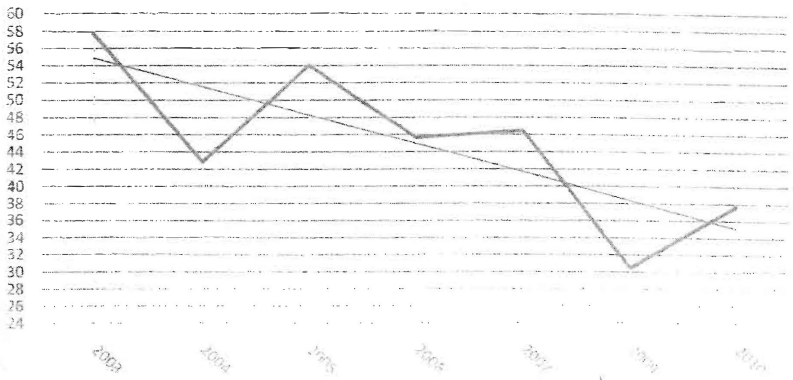
Nebraska Agricultural Water Management Demonstration Network

This program encourages producers improve irrigation scheduling using Etagages and Watermark sensors to determine crop water use. The Etagage simulates crop water use through evaporation through ceramic and green canvas membrane. Watermark sensors

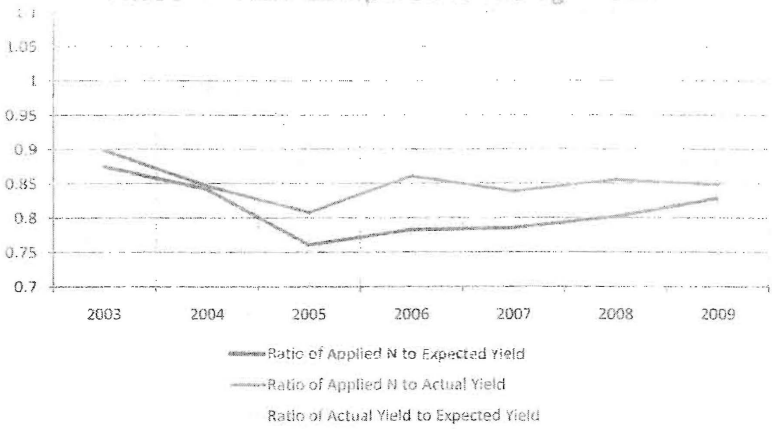
are used to measure soil moisture in a nearby field to confirm the ETgage's accuracy. This program began in the Upper Big Blue NRD with a collaborative effort with the University of Nebraska Extension. The program is now being implemented in several NRDs. The Upper Big Blue NRD is selling this equipment to irrigators at a reduced cost to encourage adoption of the scheduling practice. This program, which originated in the Upper Big Blue NRD, has expanded to several other parts of Nebraska.



Phase II Area Residual Soil Nitrate



Phase II - Yield Compared to Nitrogen Use



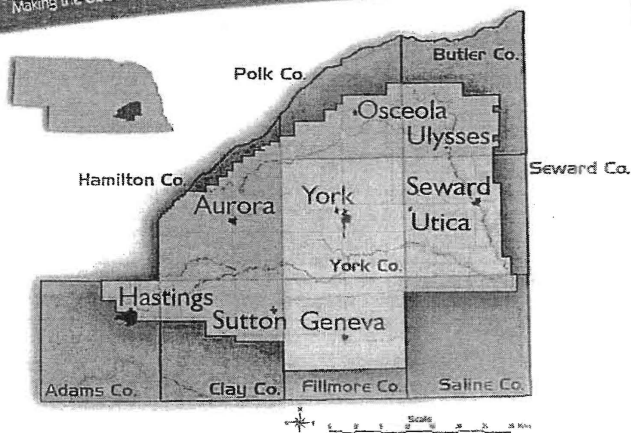
KNOW YOUR NRD



UPPER BIG BLUE
Natural Resources District
York, NE

Fall / Winter 2010

Nebraska's Natural Resources Districts
Making the Good Life Better Since 1972



UPPER BIG BLUE NRD

Upper Big Blue NRD

Water Quality & Quantity FACTS

Groundwater irrigated acres: 1,159,645
2009 Irrigation water use averaged
7.10 acre inches.

Free home water tests (1997-2010):

Nitrate tests: 2,572

Bacteria tests: 703

Irrigation flowmeter cost-share:

1,816 installed and inspected

Wellhead Protection Areas established:

23 communities

The Upper Big Blue NRD
water management area is larger
than the state of Delaware...

Flood control dams built (1972-2010):

45 structures

Recreation areas: 5 sites / 640 acres of
water and land managed.

Forestry (1975-2010):

1,678,600 trees
sold

Protecting Lives



Who is monitoring
the safety of our
drinking water?
Dan Leininger is...

The Domestic Well
Testing Program
keeps rural residents
of the Upper Big
Blue NRD apprised of

the quality of their drinking water in
regard to nitrate levels. Federal
regulations state that nitrate-
nitrogen concentrations in drinking
water greater than 10 parts per
million (ppm) are potentially hazard-
ous to high-risk individuals such as
infants and the elderly.

In towns, the city government or
water supplier is required to annu-
ally inform residents of their water
quality. In 2008, the NRD tested
nitrate levels in 239 domestic wells.

Protecting Property

Who is working to control floods?
Jeff Ball is...

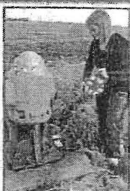
The Upper Big
Blue NRD has
built dams to
ensure the
safety of our
District's
citizens.



These dams are designed as multi-
purpose/use areas for flood control,
recreation, habitat establishment,
water quality protection, and soil
erosion prevention. Landscapes with
uncontrolled water sheds can present
many challenges such as flooding and
soil erosion. This can cause property
damage and possible water
contamination. In other cases,
uncontrolled areas can cause harm
to humans and livestock.

Protecting the Future

Who ensures that
my grandchildren
will have enough
water in the
future?
**Courtney Woodman
does...**



The purpose for our
regulations is to
manage groundwater in times of
shortage. This will ensure that we
can sustain our long-term water
supply for future generations and to
avoid conflicts between users. Over
500 observation wells are measured
in the spring of each year, allowing
the water table to rebound from the
previous irrigation season.
Reporting and allocation triggers
have been proactively put in place
should the groundwater levels fall
below a certain point.

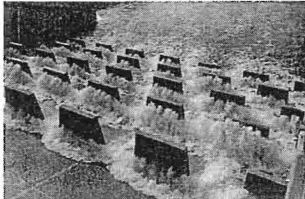
Upper Big Blue NRD • 105 N. Lincoln Avenue • York, NE 68467 • 402.362.6601 • www.upperbigblue.org

Personal Safety: Knowing my family is safe

The Upper Big Blue NRD carries out a variety of projects and programs in groundwater management, land treatment, flood control, forestry, and recreation. The Upper Big Blue NRD staff takes tremendous pride in their work because they also have families who daily rely upon and use the same resources that they monitor and test.

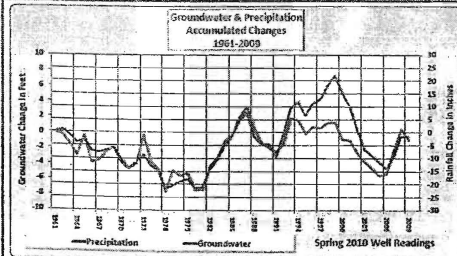
Flood Control & Soil Erosion Prevention

One of the main responsibilities of the NRD is flood control because of a variety of rivers and tributaries that flow through the District. With 45 flood control dams District-wide, the Upper Big Blue NRD works with producers, cities and county officials to improve storm water management and run-off. As an added benefit, the Upper Big Blue NRD maintains five recreational sites created through flood control dams that each form a lake for fishing and boating. Hiking, biking, and camping, as well as the development of wildlife habitat, are additional benefits incorporated into the design of these flood control sites. The NRD also works with landowners by cost-sharing on construction or installation of soil and/or water conservation practices. These practices prevent or reduce soil erosion, water contamination, and the overuse of both surface water and



CROP-TIP Agricultural Test Site

The NRD is helping producers increase their bottom-line while implementing conservation measures. This special agricultural test site managed by the NRD helps to demonstrate that calculated use of irrigation water and nitrogen application can help to save producers money, yet still allow similar or sometimes greater yields. This project called CROP-TIP provides information farmers can use as a management tool in their farming operations by measuring the difference of irrigation water applied, energy costs, labor and yields of sub-surface drip irrigation versus gravity irrigation over a number of years. Soil moisture sensors and data loggers are used to record soil moisture. Atmometers track evapo-transpiration for total crop water use.



Precipitation Mirrors Groundwater Levels

The graph shows annual change in rainfall from 1961-2009 compared to groundwater levels. Rainfall data from 8 gauges and groundwater data from 500 observation wells across the NRD, reflect wet and dry periods. When

groundwater and precipitation levels are placed together on a graph, the result is a mirror image, which indicates in our District that precipitation has a great deal to do with groundwater levels.

Nebraska's NRDs

- Protects lives through flood protection
- Leaders in groundwater management
- Use taxpayer dollars efficiently

Formed in 1972, Nebraska's Natural Resources Districts are local government entities with broad responsibilities to protect our natural resources.

NRDs help Nebraskans respond to natural resource challenges with local control and local solutions. Major Nebraska river basins form the boundaries of the 23 NRDs, each of which is governed by locally elected boards of directors. The Upper Big Blue NRD is governed by a 17-member board of directors. These directors are elected by registered voters within the District. The board sets policy for the District and works closely with the staff through a committee system to carry out the District's goals.

Statewide, NRDs are largely funded by property taxes and make efficient use of those tax dollars; typically a Natural Resources District uses only 1% to 2% of all property taxes collected in a county.

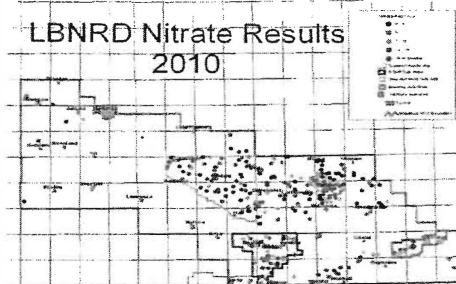
For example, in the Upper Big Blue NRD on a \$100,000 home this would equate to \$2.57 of property tax per month; A small investment for peace of mind knowing that your NRD is "Water Conscious".

"Conservation is the Nature of Our Business"

Concerned about your natural resources?...So are we!
Find out more about Nebraska's NRDs at www.nrdnet.org

BIG BLUE RIVER COMPACT
Water Quality Committee Report
by Little Blue Natural Resources District
March 2011

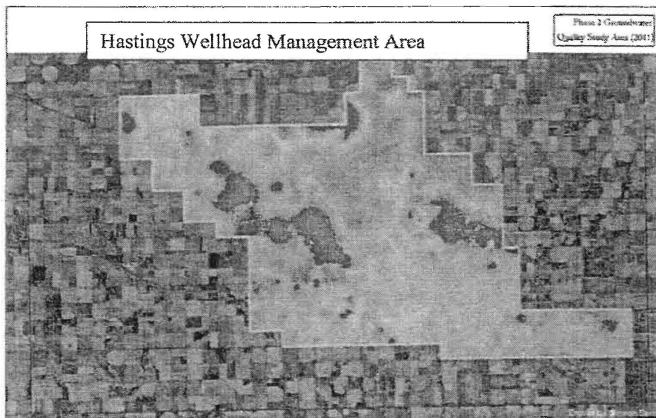
Summer 2010 Water Quality Sampling Results



Nitrate levels for the Water Quality Sub-Areas are Bruning – 13.33 PPM, Byron-Deshler-Ruskin – 10.56 PPM, Clay-Nuckolls – 9.82 PPM, and Fairbury 8.68 PPM. District wide the NRD sampled 360 irrigation wells.

The Little Blue, Upper Big Blue and Hastings Utilities sampled an additional 500 groundwater wells in Hastings Wellhead Management Area. The map below shows areas in red exhibiting higher concentration of nitrates. Along

with the water sampling, this area is doing vadose testing, isotope water sampling and will be expanding its water sampling area in 2011. A committee has been formed to discuss management options.



A growing concern of contaminants in drinking water supplies, especially nitrates, doubled in the Little Blue District in last 10 years. Over 55% of the community's wells are over 5 PPM with 40% actually over 6 PPM. The Little Blue has taken a pro-active approach in assisting communities in managing community's Wellhead Protection Areas. Wellhead Protection Management Areas can receive extra cost-share for best management practices, expanded education for rural and urban citizens and/or more restrictions. The City of Edgar received a grant to do an in-depth study of the high nitrate concentration in its management area. This study is nearly complete and will give the City and NRD a guideline on management options.

Agricultural Water Enhancement Program (AWEP)

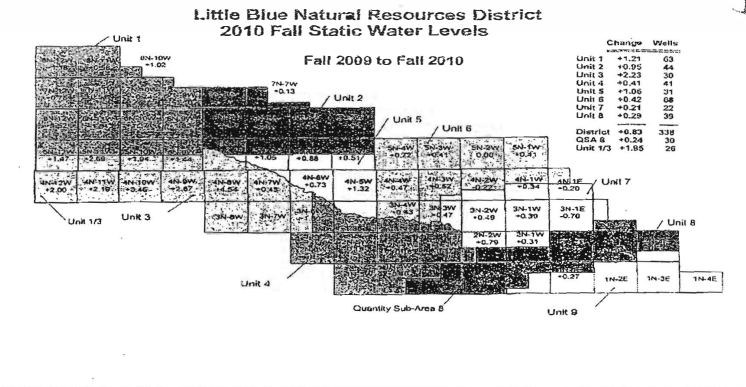
The Little Blue NRD was one of twenty-one projects awarded nationally under the Federal Ag. Water Enhancement Program in 2009. The program is on its last year of this three-year grant to assist cooperators in improving their irrigation water management practices on their farms. The Little Blue District was supposed to receive 3 million in funding, in which the NRD received around \$1.5 million in funding over the 3 years timetable. Contracts were signed for gravity to pivot conversions (13) or subsurface drip systems (11), converting some irrigated acres back to dryland and improving irrigation efficiency. Overall, over 95 contracts were signed by producers. The funds are being focused on our wellhead protection areas and water quality subareas.

Irrigation Management Project Successful

LBNRD has been involved in Nebraska Ag Water Management Demonstration Network for 6 years. The NRD started with 5 producers in 2005 and have grown to 200 producers in 2011; covering about 100,000 irrigated acres. The goal of the project is to save producers 1 inch of water, but by past surveys most producers have saved themselves 2 inches of water. The project includes soil moisture sensors and ET gages that are cost-shared by the NRD.

Spring 2010 Groundwater Levels

The fall 2010 static groundwater levels were completed by the Little Blue NRD in November. A total of 338 irrigation and monitoring wells were read showing a slight rise of 0.83 feet from the fall of 2009. In the District's Groundwater Management Plan, sub-areas of the district were established based on areas of similar groundwater geologic conditions, and broken into manageable sized areas. We continue to work with producers in Unit 8, in which about 50% of the wells in this sub-area are metered and have been working with producers to implement best management irrigation practices. The map below shows the average one-year groundwater rise for each of our established sub-areas.



New Well Development

In 2010, there were 113 new wells drilled in the NRD; 107 were irrigation wells of which 37 were replacement wells, 2 wildlife wells, 1 Public Water Supply, 2 stock wells and one industrial well. We've seen quite a few wells being installed where gravity irrigation is converted to pivot and the producer wants to get the well to the center of the circle.

The consultant has completed a detailed soils evaluation of all soils in our district to categorize each soil by its characteristics. The board is reviewing this data along with the rules within the Groundwater Management Plan. The NRD is planning to evaluate all the rules by this fall when a hydro geologic study is completed this spring.

Monitoring Wells and Hydro Geologic Grant

The NRD secured two grants through the Nebraska Integrated Water Management Plan Program (IWMPP) for the purpose of installing a network of dedicated water level monitoring wells and completing a hydro geologic study throughout the district. The purpose of installing the wells is to gather some soil profile data to help fill in data gaps that exist in our geology. The majority of the wells has been installed to date and is equipped with a data logger to track continuous water levels.

The NRD hired JEO to complete a hydro geologic study of the entire district. The study is on schedule and should be completed this spring. The goal of the study will be to identify more accurately the boundaries of sensitive aquifers, where seasonal declines are most prevalent and where water user conflicts are most likely to exist. Another goal is to refine or perhaps change entirely the boundaries of the Water Quality and Water Quantity sub-areas which exist in our Groundwater Management Plan, so management is more focused.

Groundwater Cleanup on Naval Ammunition Depot

The District continues to work with the Army Corps of Engineers to identify the most desirable plan for groundwater contamination clean-up of a 6 square mile area of the Naval Ammunition Depot (NAD) just southeast of Hastings. Contamination occurred as a result of ammunitions production and by-product disposal during the operation of the NAD through the 1940s-50s. The contamination includes volatile organic compounds (VOCs), primarily TCE and TCA, and explosives residues, primarily TNT and RDX.

The Corps continue to work with the NRD and US Meat Animal Research Center (USMARC) in trying to design options for discharge of the contaminated water. The option of using "leaky ponds" which would facilitate groundwater recharge in the off-season before the discharge water could escape downstream is still being considered. One problem that has risen is Nebraska Department of Natural Resources is considering making the existing US MARC dam a high risk structure.

KANSAS-NEBRASKA BIG BLUE RIVER COMPACT REPORT
U.S. Geological Survey—Water Year 2010

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. 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 Web (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 a national Web page (address shown below).

During water year (WY) 2010 (October 1, 2009 to September 30, 2010), 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 2010 published data (manuscript; discharge and gage height daily values; statistics tables; and discharge and gage height hydrographs) from *WDR2010: Water-Data Report 2010* are attached for each station. These site-data sheets (PDF files) are available online at <http://wdr.water.usgs.gov/wy2010/search.jsp> 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 2010 compared to those for the median daily statistic for each day of the year.

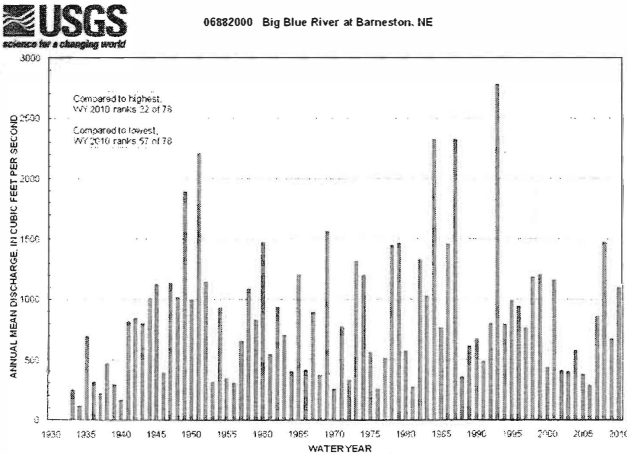
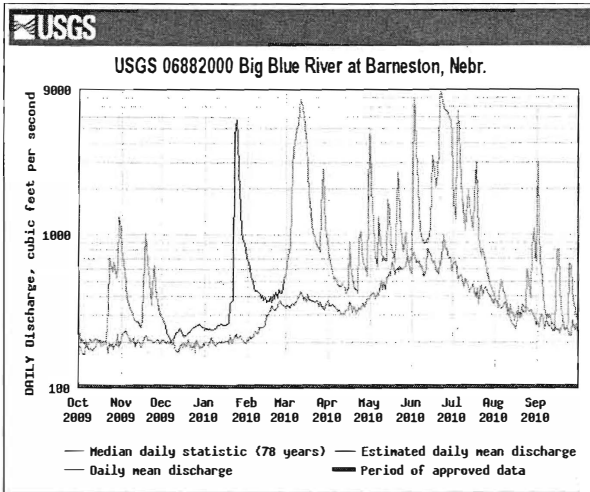
Current (real-time) and historical data on surface water, ground water, and water quality for the Nation can be accessed and downloaded via the National Water Resources website (<http://water.usgs.gov/>) or from the Nebraska Water Resources website (<http://ne.water.usgs.gov/>). Daily, monthly, and annual streamflow statistics are also available under "Surface Water" on the National site and under "Historical data: Streamflow" on the Nebraska site. Up to 120 days of unit values data and all daily values can be accessed using the real-time options.

Jason Lambrecht
Chief, Hydrologic Data Section

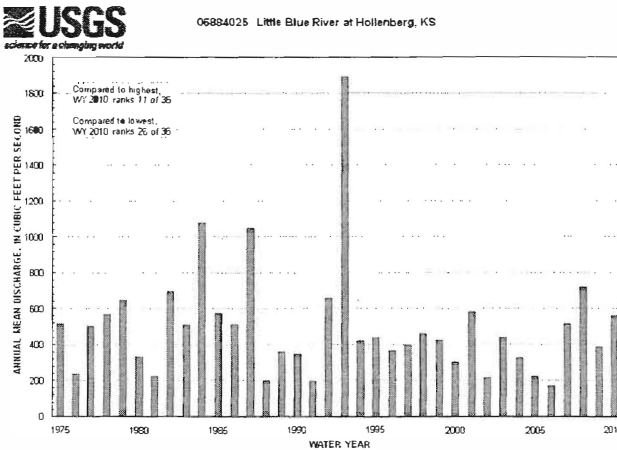
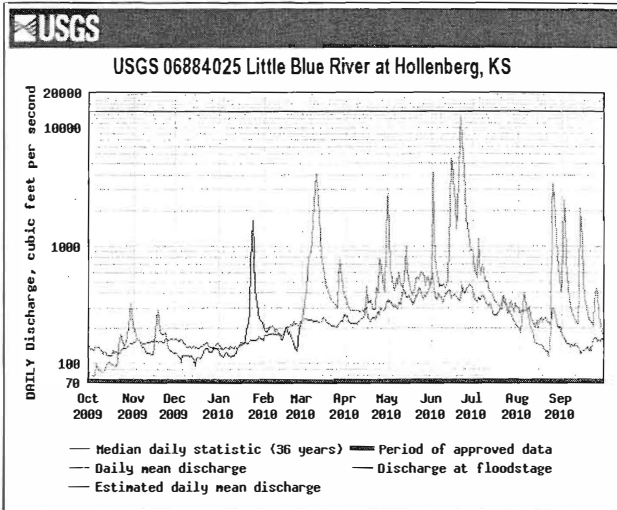
U.S. Geological Survey, Nebraska Water Science Center
5231 S. 19th St., Lincoln, NE 68512-1271
(jlambre@usgs.gov)
402-328-4124 (office), 402-328-4101 (fax), 402-416-2363 (mobile)

May 06, 2011

For **Big Blue River at Barneston**, nine discharge (and stage) measurements, ranging from 193 ft³/s (3.66 ft) to 12,200 ft³/s (18.14 ft), and six inspections were made during WY 2010. The annual mean discharge of 1,096 ft³/s was 1.6 times greater than that of the WY 2009 mean of 673 ft³/s and greater than the new historical mean of 850 ft³/s for WYs 1933–2010 (78 years of record). The maximum and minimum daily discharges were 8,980 ft³/s on June 22, 2010; and 166 ft³/s on Oct. 4, 2009.



For **Little Blue River at Hollenberg**, ten discharge (and stage) measurements, ranging from 91.9 ft³/s (2.04 ft) to 13,500 ft³/s (13.13 ft), and two inspections were made during WY 2010. The annual mean discharge of 559 ft³/s was 1.4 times greater than that of the WY 2009 mean of 388 ft³/s and greater than the new historical mean of 502 ft³/s for WYs 1975–2010 (36 years of record). The maximum and minimum daily discharges were 12,400 ft³/s on June 22, 2010; and 80 ft³/s on Oct. 4, 2009.



Water Data Report 2010

06882000 Big Blue River at Barneston, Nebr.

Big Blue Basin
Middle Big Blue Subbasin

LOCATION.--Lat 40°02'41", long 96°35'14" referenced to North American Datum of 1983, in NE ¼ NW ¼ sec.24, T.1 N., R.7 E., Gage County, NE, Hydrologic Unit 10270202, on right bank at right downstream end 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.--DAILY DISCHARGE--May 1932 to current year.

PERIOD OF RECORD.--DAILY GAGE HEIGHT--October 2009 to September 2010.

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

GAGE.--Water-stage recorder with satellite telemetry. Datum of gage is 1,162.2 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.--Records good except for estimated daily discharges, which are poor.

06882000 Big Blue River at Barneston, Nebr.—Continued

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2009 TO SEPTEMBER 2010
DAILY MEAN VALUES

[e, estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	190	798	281	e242	e709	574	796	4,280	557	2,370	388	3,060
2	179	744	271	e243	e658	651	710	2,050	8,060	1,630	368	1,060
3	170	578	e258	e244	e608	732	637	1,170	6,230	1,260	333	676
4	166	469	e230	e240	e543	836	563	867	3,610	4,350	421	524
5	168	390	e224	e243	e493	1,500	519	714	2,150	6,640	508	407
6	203	354	e214	e240	e447	2,880	523	622	1,440	3,360	471	329
7	182	330	e198	e239	e434	4,210	490	1,300	1,080	2,180	433	284
8	180	321	e201	e240	e434	4,210	471	1,060	922	1,770	395	261
9	182	301	e212	e246	e428	4,980	461	775	922	1,280	357	254
10	177	282	e215	e250	e415	5,310	459	678	875	1,080	307	254
11	176	276	e230	e257	e393	6,660	479	717	888	1,360	298	249
12	183	272	e234	e260	e401	7,880	464	675	956	1,970	283	238
13	187	271	e238	e262	e379	6,890	437	676	902	1,560	268	235
14	207	257	e243	e263	e389	6,080	417	1,680	1,120	1,410	260	410
15	206	248	e233	e260	e367	5,130	459	1,430	2,000	1,160	251	797
16	205	282	e219	e256	e372	4,030	903	907	3,310	1,060	243	808
17	202	459	e216	e258	e372	2,630	624	797	2,660	1,850	274	477
18	199	1,030	e219	e261	e397	1,850	520	740	2,080	3,060	342	336
19	201	817	e226	e268	e363	1,420	474	670	2,110	1,680	292	280
20	202	662	e229	e358	e409	1,180	448	912	3,510	972	293	257
21	208	508	e233	e373	e384	1,040	430	2,570	7,540	780	321	244
22	328	404	e240	e378	e426	950	417	2,100	8,980	730	314	245
23	716	349	e245	e4,500	e388	878	948	1,320	7,590	800	314	261
24	650	582	e251	e5,800	e443	844	1,050	950	6,890	702	604	651
25	578	627	e253	e4,300	e422	834	785	779	6,640	650	574	627
26	663	447	e255	e2,600	e418	773	670	821	6,570	583	424	438
27	623	364	e257	e1,500	e455	1,480	628	1,050	6,250	524	388	368
28	536	330	e261	e1,050	e510	2,710	600	771	5,960	481	827	321
29	616	307	e257	e950	---	1,610	539	686	5,700	453	1,090	289
30	1,300	289	e251	e875	---	1,120	4,570	598	4,430	434	726	280
31	1,110	---	e248	e808	---	907	---	564	---	407	673	---
Total	11,093	13,348	7,342	28,264	12,457	82,779	21,491	34,929	111,932	48,546	13,040	14,920
Mean	358	445	237	912	445	2,670	716	1,127	3,731	1,566	421	497
Max	1,300	1,030	281	5,800	709	7,880	4,570	4,280	8,980	6,640	1,090	3,060
Min	166	248	198	239	363	574	417	564	557	407	243	235
Ac-ft	22,000	26,480	14,560	56,060	24,710	164,200	42,630	69,280	222,000	96,290	25,860	29,590

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1933 - 2010, BY WATER YEAR (WY)

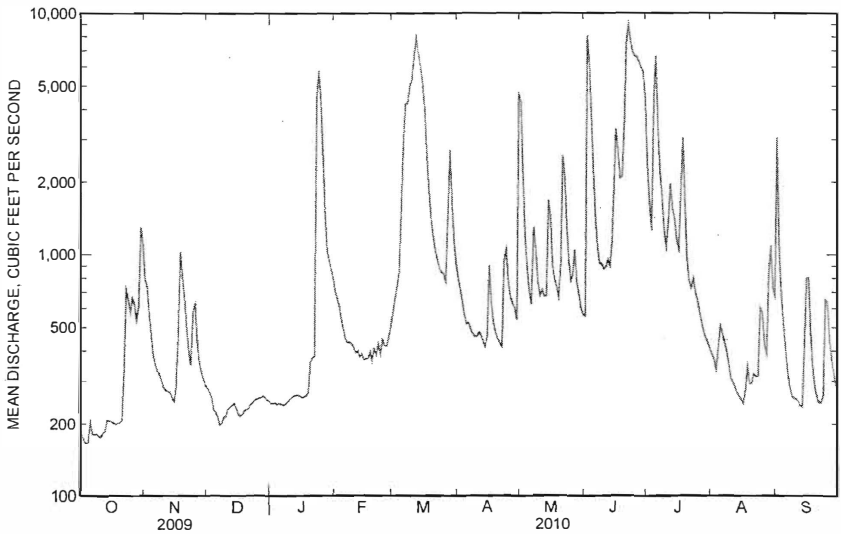
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	560	310	238	293	614	1,305	844	1,319	2,047	1,291	687	687
Max	7,451	1,526	851	1,596	2,876	10,560	5,280	5,207	10,460	12,270	5,227	3,420
(WY)	(1974)	(1999)	(1998)	(1973)	(1984)	(1979)	(1984)	(1995)	(1951)	(1993)	(1954)	(1989)
Min	61.5	77.5	87.4	67.6	116	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)

06882000 Big Blue River at Barneston, Nebr.—Continued

SUMMARY STATISTICS

	Calendar Year 2009		Water Year 2010		Water Years 1933 - 2010	
Annual total	172,370		400,141			
Annual mean	472		1,096		850	
Highest annual mean					2,781	1993
Lowest annual mean					115	1934
Highest daily mean	5,830	Jun 16	8,980	Jun 22	50,000	Jun 9, 1941
Lowest daily mean	108	Aug 25	166	Oct 4	1.0	Nov 30, 1945
Annual seven-day minimum	132	Aug 22	178	Oct 2	15	Aug 3, 1934
Maximum peak flow			12,700	Jun 2	57,700	Jun 9, 1941
Maximum peak stage			18.42	Jun 2	^a 34.30	Jun 9, 1941
Annual runoff (ac-ft)	341,900		793,700		615,800	
10 percent exceeds	853		2,780		1,760	
50 percent exceeds	308		508		280	
90 percent exceeds	188		234		107	

^a At site and datum then in use.

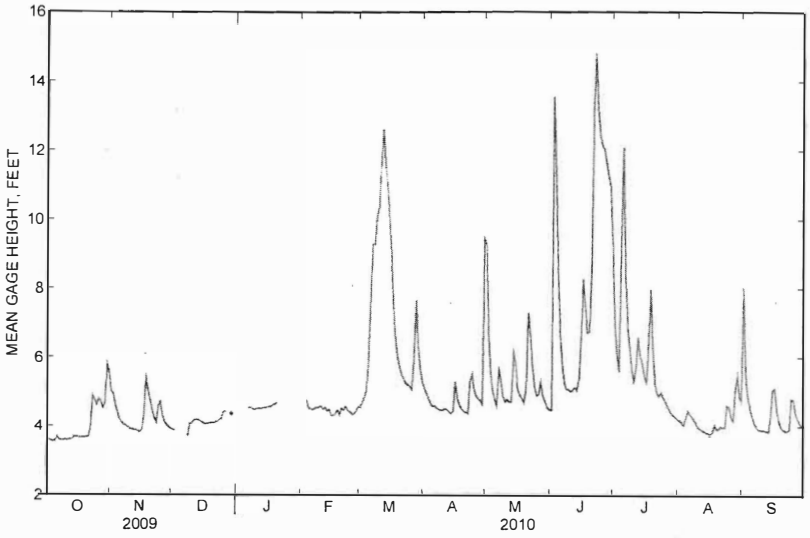


06882000 Big Blue River at Barneston, Nebr.—Continued

GAGE HEIGHT, FEET
WATER YEAR OCTOBER 2009 TO SEPTEMBER 2010
DAILY MEAN VALUES

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	3.65	5.04	3.91	---	---	4.55	5.11	9.26	4.46	7.09	4.16	8.01
2	3.61	4.94	3.88	---	---	4.70	4.95	6.63	13.54	6.10	4.11	5.49
3	3.58	4.62	---	---	4.77	4.84	4.82	5.49	11.62	5.59	4.02	4.87
4	3.57	4.40	---	---	4.54	5.03	4.67	5.02	8.58	9.26	4.23	4.56
5	3.58	4.21	---	---	4.50	6.02	4.58	4.76	6.80	12.08	4.43	4.30
6	3.70	4.13	---	4.54	4.49	7.78	4.59	4.59	5.84	8.30	4.35	4.11
7	3.62	4.06	---	4.55	4.51	9.28	4.52	5.62	5.32	6.85	4.27	3.99
8	3.62	4.04	3.72	4.53	4.55	9.27	4.48	5.32	5.07	6.29	4.18	3.92
9	3.62	3.99	4.09	4.48	4.55	10.04	4.46	4.87	5.07	5.62	4.08	3.90
10	3.61	3.94	4.09	4.50	4.58	10.35	4.45	4.70	5.00	5.31	3.96	3.91
11	3.61	3.92	4.16	4.53	4.49	11.55	4.50	4.77	5.02	5.70	3.93	3.89
12	3.63	3.91	4.21	4.52	4.55	12.61	4.47	4.69	5.13	6.56	3.89	3.86
13	3.64	3.90	4.19	4.53	4.44	11.77	4.40	4.69	5.04	6.01	3.85	3.85
14	3.71	3.87	4.16	4.54	4.48	11.05	4.36	6.14	5.37	5.80	3.82	4.29
15	3.71	3.83	4.12	4.55	4.30	10.18	4.45	5.83	6.58	5.44	3.80	5.04
16	3.70	3.92	4.08	4.56	4.31	9.09	5.28	5.09	8.26	5.28	3.77	5.09
17	3.69	4.34	4.08	4.58	4.36	7.53	4.79	4.91	7.46	6.37	3.86	4.46
18	3.68	5.40	4.09	4.61	4.47	6.58	4.59	4.81	6.71	7.97	4.04	4.13
19	3.69	5.06	4.11	4.63	4.32	6.03	4.49	4.68	6.74	6.23	3.91	3.98
20	3.69	4.77	4.11	4.68	4.51	5.70	4.43	5.06	8.47	5.28	3.92	3.91
21	3.71	4.47	4.12	---	4.46	5.49	4.39	7.28	13.09	4.96	3.99	3.88
22	4.04	4.24	4.14	---	4.57	5.36	4.36	6.70	14.81	4.87	3.97	3.88
23	4.89	4.11	4.19	---	4.45	5.24	5.29	5.69	13.26	4.99	3.97	3.92
24	4.77	4.59	4.22	---	4.41	5.19	5.51	5.16	12.43	4.82	4.60	4.80
25	4.63	4.71	4.40	---	4.35	5.17	5.09	4.88	12.13	4.72	4.56	4.77
26	4.80	4.34	4.44	---	4.35	5.07	4.88	4.93	12.04	4.58	4.25	4.38
27	4.72	4.14	---	---	4.45	6.01	4.80	5.28	11.66	4.46	4.16	4.21
28	4.54	4.05	---	---	4.57	7.64	4.75	4.86	11.29	4.37	5.00	4.09
29	4.69	3.98	4.37	---	---	6.28	4.62	4.71	10.97	4.31	5.46	4.01
30	5.80	3.94	---	---	---	5.61	9.44	4.54	9.49	4.27	4.86	3.98
31	5.52	---	---	---	---	5.29	---	4.48	---	4.21	4.73	---
Mean	4.03	4.30	---	---	---	7.30	4.85	5.34	8.57	5.93	4.20	4.38
Max	5.80	5.40	---	---	---	12.61	9.44	9.26	14.81	12.08	5.46	8.01
Min	3.57	3.83	---	---	---	4.55	4.36	4.48	4.46	4.21	3.77	3.85

06882000 Big Blue River at Barneston, Nebr.—Continued



Water-Data Report 2010

06884025 Little Blue River at Hollenberg, KS

Big Blue Basin
Lower Little Blue Subbasin

LOCATION.--Lat 39°58'49", long 97°00'17" referenced to North American Datum of 1983, in NE ¼ SW ¼ 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, 1.75 mi downstream from Nebraska-Kansas State line, and at mile 43.1.

DRAINAGE AREA.--2752.00 mi².

SURFACE-WATER RECORDS

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

PERIOD OF RECORD.--DAILY GAGE HEIGHT--October 2009 to September 2010.

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

REMARKS.--Records good except for estimated daily discharges, which are poor. 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 Oct. 12, 1973.

06884025 Little Blue River at Hollenberg, KS—Continued

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2009 TO SEPTEMBER 2010
DAILY MEAN VALUES
[e, estimated]

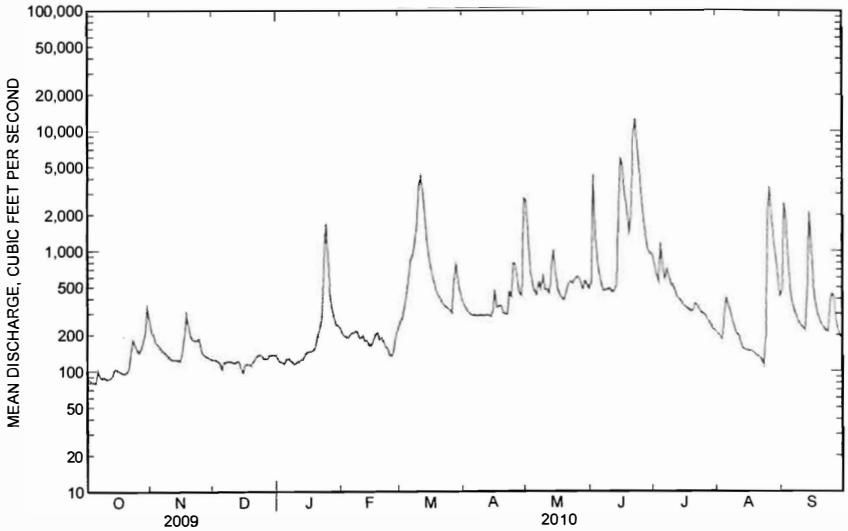
Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	86	209	124	e126	e205	257	351	2,560	550	758	202	462
2	84	198	124	e119	e196	272	328	1,280	4,170	623	193	2,470
3	81	175	120	e118	e190	333	308	658	1,320	542	183	1,770
4	80	165	116	e115	e190	420	295	518	778	1,140	290	750
5	80	160	e103	e124	e202	589	288	458	592	729	403	447
6	100	150	e118	e127	208	816	288	423	503	570	352	353
7	90	144	e118	e122	210	915	284	538	457	698	303	309
8	87	139	e120	e118	214	1,120	283	476	461	608	254	279
9	88	133	e120	e114	191	1,620	286	604	467	524	227	251
10	86	128	e118	e118	187	3,160	285	469	475	510	202	237
11	86	124	e115	e119	196	4,110	282	469	444	468	194	227
12	87	124	e119	e125	178	3,040	288	436	461	418	173	216
13	92	124	e120	e125	179	1,920	284	694	505	396	154	431
14	102	122	e106	e137	e164	1,180	278	995	2,030	376	149	2,060
15	103	121	e97	e143	e162	852	308	615	5,680	358	148	1,150
16	100	140	e112	e146	e178	676	457	472	5,060	337	145	502
17	98	192	e114	e146	e199	565	330	429	2,890	331	146	359
18	96	291	e113	e149	e208	491	338	399	2,280	320	143	296
19	95	232	e111	e159	e182	437	348	384	1,400	308	136	262
20	97	193	e120	e198	e188	406	300	444	1,920	312	131	239
21	106	182	e127	e228	e176	374	291	521	8,610	361	130	227
22	143	180	e133	e280	e158	352	295	551	12,400	346	123	215
23	181	178	e137	e740	e153	338	445	523	7,540	324	111	213
24	164	186	e135	e1,670	e135	328	405	570	4,480	300	198	354
25	150	151	e127	e875	e131	319	785	599	2,780	296	2,010	444
26	142	138	e127	e424	e153	299	755	589	1,730	282	3,350	413
27	152	133	e127	e326	e201	563	532	537	1,280	263	1,730	257
28	173	131	e136	e273	e228	771	438	468	1,010	246	1,160	213
29	211	128	e136	e241	---	548	414	555	937	231	828	195
30	332	125	e136	e238	---	457	2,690	519	918	216	552	181
31	262	---	e136	e226	---	384	---	474	---	211	416	---
Total	3,834	4,796	3,765	8,169	5,162	27,912	13,259	19,227	74,128	13,402	14,736	15,782
Mean	124	160	121	264	184	900	442	620	2,471	432	475	526
Max	332	291	137	1,670	228	4,110	2,690	2,560	12,400	1,140	3,350	2,470
Min	80	121	97	114	131	257	278	384	444	211	111	181
Ac-ft	7,600	9,510	7,470	16,200	10,240	55,360	26,300	38,140	147,000	26,580	29,230	31,300

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1975 - 2010, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	338	230	175	181	314	707	501	794	973	911	511	372
Max	2,163	1,113	424	576	1,059	3,816	2,379	2,302	4,373	9,014	2,572	1,320
(WY)	(1987)	(1997)	(1993)	(1984)	(1993)	(1993)	(1987)	(1995)	(1984)	(1993)	(1985)	(1977)
Min	45.3	81.1	96.7	98.5	115	118	123	108	151	83.8	72.5	32.0
(WY)	(1992)	(1992)	(2001)	(1977)	(1992)	(1981)	(2003)	(1992)	(1981)	(2002)	(1991)	(1991)

SUMMARY STATISTICS

	Calendar Year 2009		Water Year 2010		Water Years 1975 - 2010	
Annual total	77,925		204,172			
Annual mean	213		559		502	
Highest annual mean					1,891	1993
Lowest annual mean					173	2006
Highest daily mean	1,840	Jun 22	12,400	Jun 22	39,300	Jul 26, 1992
Lowest daily mean	58	Aug 23	80	Oct 4	26	Oct 1, 1991
Annual seven-day minimum	64	Aug 23	86	Oct 1	27	Sep 27, 1991
Maximum peak flow			13,800	Jun 22	47,800	Jul 26, 1992
Maximum peak stage			13.29	Jun 22	21.21	Jul 26, 1992
Annual runoff (ac-ft)	154,600		405,000		363,500	
10 percent exceeds	313		1,050		842	
50 percent exceeds	180		273		200	
90 percent exceeds	96		118		102	

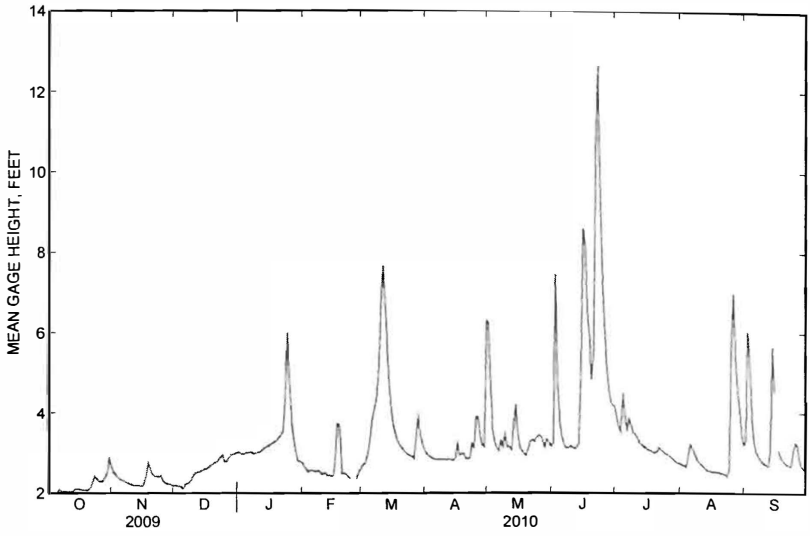


06884025 Little Blue River at Hollenberg, KS—Continued

GAGE HEIGHT, FEET
WATER YEAR OCTOBER 2009 TO SEPTEMBER 2010
DAILY MEAN VALUES

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	2.03	2.52	2.20	3.02	2.67	2.69	3.00	6.19	3.24	3.90	2.71	3.30
2	2.02	2.48	2.20	2.99	2.60	2.73	2.94	4.62	7.43	3.66	2.68	6.02
3	2.01	2.40	2.19	2.98	2.52	2.89	2.89	3.56	4.69	3.52	2.66	5.35
4	2.00	2.36	2.17	3.01	2.57	3.11	2.86	3.26	3.81	4.48	2.95	3.89
5	2.01	2.34	2.12	3.02	2.56	3.48	2.84	3.12	3.42	3.90	3.22	3.27
6	2.10	2.31	2.23	3.02	2.55	3.94	2.84	3.04	3.23	3.59	3.11	3.04
7	2.06	2.28	2.25	3.03	2.55	4.13	2.83	3.30	3.12	3.85	2.99	2.94
8	2.05	2.26	2.27	2.99	2.56	4.46	2.83	3.16	3.13	3.67	2.86	2.85
9	2.05	2.24	2.35	3.01	2.49	5.15	2.83	3.45	3.14	3.50	2.78	2.78
10	2.04	2.22	2.45	3.03	2.48	6.77	2.83	3.15	3.16	3.47	2.71	2.74
11	2.04	2.20	2.51	3.03	2.51	7.65	2.82	3.15	3.09	3.37	2.68	2.71
12	2.04	2.20	2.53	3.08	2.45	6.68	2.84	3.07	3.13	3.26	2.63	2.68
13	2.06	2.20	2.53	3.13	2.45	5.51	2.83	3.61	3.23	3.21	2.56	3.13
14	2.11	2.19	2.57	3.16	2.43	4.58	2.81	4.20	5.19	3.16	2.55	5.64
15	2.11	2.19	2.60	3.17	2.44	4.03	2.89	3.47	8.59	3.12	2.54	4.53
16	2.10	2.26	2.60	3.22	2.99	3.70	3.25	3.15	8.15	3.07	2.53	---
17	2.09	2.46	2.64	3.25	3.74	3.48	2.95	3.05	6.47	3.06	2.53	3.06
18	2.08	2.76	2.68	3.28	3.65	3.32	2.97	2.98	5.90	3.03	2.53	2.90
19	2.08	2.60	2.72	3.32	2.49	3.20	2.99	2.94	4.84	3.00	2.51	2.81
20	2.08	2.47	2.76	3.38	2.50	3.13	2.87	3.09	5.41	3.01	2.49	2.75
21	2.12	2.43	2.78	3.46	2.47	3.06	2.85	3.27	10.44	3.13	2.49	2.71
22	2.28	2.42	2.83	3.53	2.42	3.00	2.86	3.33	12.63	3.09	2.46	2.68
23	2.42	2.41	2.89	4.47	2.36	2.96	3.22	3.27	9.83	3.04	2.42	2.67
24	2.36	2.44	2.95	5.99	---	2.94	3.13	3.38	7.72	2.98	2.65	3.05
25	2.30	2.31	2.79	4.77	---	2.92	3.91	3.44	6.37	2.97	5.68	3.26
26	2.28	2.26	2.80	3.80	2.36	2.87	3.86	3.42	5.28	2.93	6.97	3.19
27	2.31	2.24	2.89	3.35	2.52	3.44	3.41	3.30	4.71	2.88	5.35	2.80
28	2.40	2.23	2.96	3.03	2.60	3.89	3.20	3.14	4.30	2.83	4.61	2.67
29	2.52	2.22	2.97	2.80	---	3.45	3.15	3.34	4.19	2.79	4.04	2.62
30	2.87	2.20	2.98	2.80	---	3.25	6.29	3.26	4.18	2.75	3.50	2.58
31	2.68	---	3.02	2.76	---	3.08	---	3.16	---	2.74	3.20	---
Mean	2.18	2.34	2.59	3.32	---	3.85	3.13	3.42	5.40	3.26	3.15	---
Max	2.87	2.76	3.02	5.99	---	7.65	6.29	6.19	12.63	4.48	6.97	---
Min	2.00	2.19	2.12	2.76	---	2.69	2.81	2.94	3.09	2.74	2.42	---

06884025 Little Blue River at Hollenberg, KS—Continued



U.S. DEPARTMENT OF THE INTERIOR - U.S. GEOLOGICAL SURVEY - WATER RESOURCES

Short-Form Discharge Measurement Summary

STATION NUMBER 06882000 Big Blue River at Barneston, Nebr. TYPE: Stream AGENCY USGS STATE 31 COUNTY 067

LATITUDE 400241 LONGITUDE 0963514 NAD83 DRAINAGE AREA 4447.00 CONTRIBUTING DRAINAGE AREA 4370.00 DATUM 1162.20 NGVD29

Date Processed: 2011-05-06 10:54 By jmlambre

MEAS NO.*	DATE	TIME	MADE BY *	GAGE * HEIGHT *	DISCHARGE * CFS	RATING *	INDIC * SHIFT *	APPLD * SHIFT *	UNSFT * DIFF *	SHIFT * DIFF *	GHT. * CHG.	TIME	RATED	STATUS
1363	2009/10/01	1354 CDT	vcw/gsn	3.66	193	34.0	0.08	0.08	14.2	0.5	0.0	0.8	F	L
CONTROL LOCATION: 500 ft downstream CONDITION: Clear														
1364	2009/11/09	1127 CST	rw/vcw	3.99	290	34.0	0.05	0.08	6.2	-4.0	0.0	1.0	F	L
CONTROL LOCATION: 500 ft downstream CONDITION: Clear														
1365	2010/02/02	1241 CST	gsn/tpb	4.71	658	34.0	0.15	0.15	13.4	0	-0.04	1.18	P	L
CONTROL LOCATION: 2100 ft downstream CONDITION: Shore ice														
CONTROL REMARKS: shore ice @ riffle control dwnstr., 30-40% ice @ line & cross section.														
1366	2010/04/05	1305 CDT	gsn	4.58	519	34.0	0.0	0.0	0.4	0.4	0.0	0.67	G	L
CONTROL LOCATION: 500 ft downstream CONDITION: Clear														
CONTROL REMARKS: Submerged rock riffle														
1367	2010/05/21	1023 CDT	gsn/rmb	7.50	2750	34.0	0.20	0.20	6.6	0	0.01	0.7	F	L
CONTROL LOCATION: CONDITION: Clear														
CONTROL REMARKS:														
MEASUREMENT REMARKS:														
1368	2010/06/02	1355 CDT	TFB/RMB	18.14	12200	34.0	-2.22	-2.22	-20.8	0	-0.51	1.5	P	L
CONTROL LOCATION: CONDITION: Moderate debris														
CONTROL REMARKS: upper banks, moderate grasses														
1369	2010/07/16	1215 CDT	gsn/rhp	5.32	1080	34.0	0.24	0.24	16.6	0	0.0	0.58	F	L
CONTROL LOCATION: CONDITION: Clear														
CONTROL REMARKS:														
1370	2010/08/31	1131 CDT	gsn	4.48	530	34.0	0.13	0.13	12.8	-0.2	-0.01	0.68	F	L
CONTROL LOCATION: 700 ft downstream CONDITION: Submerged														
CONTROL REMARKS: rock riffle dwnstr														
MEASUREMENT REMARKS: small surface waves from SSW wind 10-15														
1371	2010/10/05	1038 CDT	gsn	3.80	219	34.0	0.03	0.03	4.3	-0.5	0.0	0.48	G	L
CONTROL LOCATION: 700 ft downstream CONDITION: Clear														
CONTROL REMARKS: mostly flat shale w/some cobble and sand														

Short-Form Discharge Measurement Summary

STATION NUMBER 06884025 Little Blue River at Hollenberg, KS TYPE:Stream AGENCY USGS STATE 20 COUNTY 201

LATITUDE 395849 LONGITUDE 0970017 NAD83 DRAINAGE AREA 2752.00 CONTRIBUTING DRAINAGE AREA DATUM 1216.10 NGVD29

Date Processed:2011-05-06 11:14 By jmlambre

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MEAS NO.* DATE * TIME * MADE BY * GAGE * DISCHARGE * RATING * INDIC * APPLD * UNSFT * SHIFT * GHT. * TIME * RATED * STATUS
          * HEIGHT * CFS * SHIFT * SHIFT * DIFF * DIFF * CHG.
*****
  475  2009/10/01 1245 CDT   vcw/gsn  2.04    91.9    10.1    0.01   -0.01   4.0    6.9   0.0   0.5   F   L
CONTROL LOCATION:      CONDITION: Clear
MEASUREMENT REMARKS: Wind-aided Qm (winds from NW, gusting to 30 mph).

  476  2009/11/10 1444 CST   vcw/tpb  2.23    129     10.1   -0.03  -0.03  -7.2   -0.8   0.0   0.57  F   L
CONTROL LOCATION:      CONDITION: Clear

  477  2010/02/10 1225 CST   gsn/rhp  2.55    210     10.1   -0.09  -0.09 -12.1    0.5   0.0   0.7   P   L
CONTROL LOCATION:      CONDITION: Shore ice
CONTROL REMARKS: Moderate to heavy slush in flow, otherwise open channel w/slush ice
MEASUREMENT REMARKS: Used .6 method only b/c of moderate to heavy slush in top of flow. Slush was affecting the .2 method.

  478  2010/04/08 1303 CDT   gsn      2.83    285     10.1   -0.15  -0.15 -16.4    0    0.0   0.72  G   L
CONTROL LOCATION:      CONDITION: Clear
CONTROL REMARKS: Stream width has widened out @ gage/bridge.

  479  2010/04/30 1438 CDT   BWS      7.10   3530     10.1    0.05   0.0    1.4    1.4   0.03  1.37  F   L
CONTROL LOCATION:      CONDITION:

  480  2010/05/21 1221 CDT   gsn/rmb  3.30    527     10.1   -0.02   0.0   -1.7   -1.7   0.03  0.65  F   L
CONTROL LOCATION:      CONDITION: Clear

  481  2010/06/16 1218 CDT   rhp      8.13   5060     10.1    0.27   0.27   7.4    0    -0.18  1.52  F   L
CONTROL LOCATION:      CONDITION: Clear

  482  2010/06/22 0905 CDT   jdm/rac 13.13  13500     10.1    0.19   0.16   3.1    0.7   0.04  1.3   F   L
CONTROL LOCATION:      CONDITION: Light debris
CONTROL REMARKS: flow in heavy bank veg

  483  2010/08/23 1059 CDT   gsn      2.43    113     10.1   -0.29  -0.29 -43.2   -0.9   0.0   0.52  F   L
CONTROL LOCATION:      CONDITION: Clear
CONTROL REMARKS: sandbars
MEASUREMENT REMARKS: two channels measured

  484  2010/10/05 1240 CDT   gsn      2.48    149     10.1   -0.21  -0.21 -31.0   -0.7   0.0   0.48  F   L
CONTROL LOCATION:      CONDITION: Clear

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