

Nebraska Resources

Newsletter

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Agency Numbers to Remember

Agency address:

Nebraska
Department of Natural Resources
301 Centennial Mall South
Fourth Floor
P.O. Box 94676
Lincoln, Nebraska 68509-4676

Agency phone number:

(402) 471-2363

Agency fax number:

(402) 471-2900

Agency homepage address:

<http://www.dnr.nebraska.gov>

Editor's Note:

A full color electronic version of this newsletter can be found on the Department's web site along with back issues at <http://www.dnr.nebraska.gov/dnrnews/newsarchive2.html>.

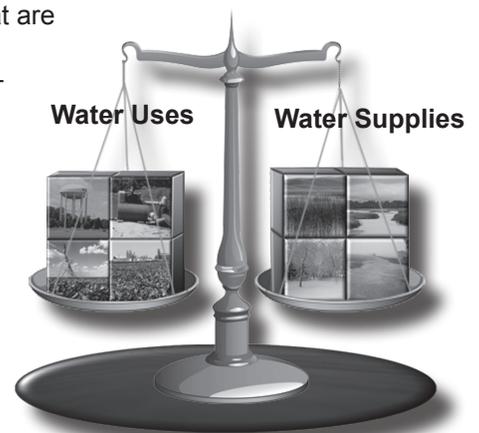
Basin-Wide Planning Activities

Introduction

Basin-wide plans (BWPs) are plans that are jointly developed by local natural resource districts (NRDs) and the Nebraska Department of Natural Resources (Department), and have a goal of **achieving and sustaining a long-term balance between water uses and water supplies**.

There are many benefits to a joint local and state approach to water management. For example, BWPs increase the feasibility of management projects that span multiple NRDs. Such projects may include water banking, recharge projects and other water re-timing activities that over the long-term serve to enhance streamflows and increase water supplies. In addition, BWPs provide an overarching framework for integrated management planning activities that occur between individual NRDs and the Department. This framework can lead to more consistent data collection and monitoring methods, water supply and demand calculations, and other accounting procedures. The consistency provided by a BWP can greatly improve quantification of overall water balance and other data compilations upon which management decisions are based. Other potential benefits of a BWP include more efficient use of water, improved wildlife habitat, and improved compliance with interstate compacts, decrees and agreements.

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Real-Time Streamgaging Website



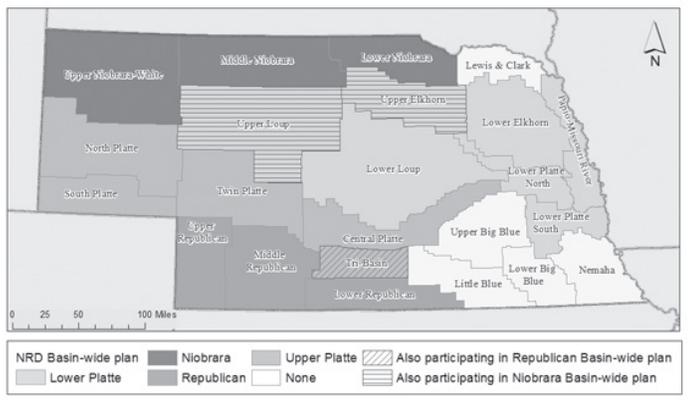
The Department of Natural Resources (Department) is authorized to measure and monitor the water flowing in Nebraska's streams, rivers, and canals. For this purpose, the Department has a dedicated program for streamgaging. Data collected through the streamgaging program is used by the Department to make informed decisions when administering water rights, issuing permits, studying surface water/groundwater interactions, responding to flood emergencies, modeling floodplains, quantifying water sup-

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Statutory Framework

LB 962 (2004) laid the groundwork for basin-wide planning by requiring that the NRDs and the Department participate in joint planning for certain areas designated as overappropriated. LB 1098 (2014) further required that certain fully appropriated river basins were to participate in joint basin-wide planning. BWP's developed in accordance with LB 962 and LB 1098 must include a consultation and collaboration process with specific stakeholder interest groups that are outlined in statutes. The NRDs and the Department may, however, incorporate additional stakeholder groups to ensure that local interest groups are more effectively represented.

The distribution of current joint basin-wide planning activities is shown in the map below, and the current status of activities follows.



Joint NRDs and Department basin-wide planning activities in Nebraska as of October, 2014.

The Upper Platte River Basin-Wide Plan for Overappropriated Areas

The Upper Platte River BWP for overappropriated areas was developed in response to LB 962. The portion of the plan that addressed the first ten-year increment of the BWP was completed in 2009. There are several projects that are in various stages of development as a result of the first increment planning. These include the J-2 Regulating Reservoirs, the Orchard-Alfalfa Canal Rehabilitation Conjunctive Management Project, the Nebraska Cooperative Republican Platte Enhancement Project, the North Dry Creek Augmentation Well Project, and the North Platte NRD and Central Irrigation District Conjunctive Management Project. All of these projects were developed to enhance Platte River flows, increase groundwater recharge, improve habitat for endangered and threatened species and ensure compliance with the interstate agreement between Colorado, Wyoming, and Nebraska.

Republican River Basin Basin-Wide Plan

The Republican River Basin meets the specifications of LB 1098, and as such the NRDs within the basin have taken initial steps to develop a joint BWP with the Department. The NRDs and the Department opted to expand the stakeholder group beyond what was statutorily required, to achieve a more comprehensive understanding of local interests. In August, 2014, public notices were distributed in local basin and statewide newspapers to notify residents of the basin-wide planning process, and residents were given the opportunity to respond if they were interested in participating as a stakeholder, and if so, which stakeholder group they would like to represent. Several residents responded, and their responses are being used in creating a stakeholder group that represents a wide variety of interests, with stakeholder meetings expected to commence in 2015.

Voluntary Basin-Wide Planning- Lower Platte and Niobrara Basin

Although the Lower Platte and Niobrara Basins are not required by statute to develop a BWP, the NRDs have recognized the potential benefits of basin-wide planning. In 2013, the seven NRDs that encompass the Lower Platte Basin assembled to form the Lower Platte Basin Coalition (LPBC) with the specific purpose of participating in basin-wide planning with the Department. Since its formation, the LPBC has formed a management committee that meets quarterly and a technical committee that meets monthly. The management committee has hired a facilitator for the process, and oversees timelines and other general functions of the group. The technical committee meets monthly to review data and develop action items that will be incorporated into the BWP.

More recently, the three NRDs that encompass the Niobrara Basin, plus two NRDs that have hydrologically connected waters to the Basin, have joined together to participate in forming a basin-wide planning process with the Department. These NRDs are in the initial phase of forming a coalition that will work jointly with the Department on planning activities.

It is important to note that six of the seven NRDs in the Lower Platte Basin, and three of the five NRDs in the Niobrara Basin are also participating in joint integrated management planning with the Department. The integrated management planning and overarching basin-wide planning processes provide an improved framework to develop water management strategies that have great potential to achieve and sustain a balance between water uses and water supplies for the near and long term.

Programs Assistance Division

The **Programs Assistance Division** handles special projects for other divisions within the agency as well as assignments from the administration. The division includes staff with skills in engineering, geology, soils science, economics, graphic arts, GIS, project management, writing, editing, administrative law, and data management.

The projects worked on by staff are wide ranging in many aspects, and change over time. Division staff projects may include review of applications for funds from the Department of Natural Resources and Nebraska Environmental Trust; research on specific topics; drafting policies and procedures; handling public information requests; creating maps, posters, bulletins, brochures, newsletters, electronic presentations, and other publications; and conducting hearings to name a few.

Currently the division includes temporary staff that are working on entering all the historical Nebraska stream and canal gaging data into an electronic

database. The Department and its predecessor agencies have conducted streamgaging and canal gaging across the state since 1895. Approximately 1,000 historical gages have been identified. For currently existing gages,



Streamgaging information is being taken from paper records of the Department and entered into a database.

historical data is being added that will supplement what has been in electronic form for some time. In addition, the Department has data on miscellaneous measurements that have been made through time across the state. All of this information is being taken from paper records of the Department and entered into a database. This

information will be made available to the public through the Department's web site as certain parts of the project are completed.

Division staff maintain the GIS coverage of the stream and major water body locations across the state. This information is used in many ways by numerous federal, state, and local agencies.

The Nebraska Rainfall and Information Network (NeRAIN) is a Department website showing precipitation across the state as recorded by volunteer reporters. Division staff work closely with regional coordinators in each of the state's natural resources districts. A new and improved website is in the process of being designed and implemented and will be available to the public soon.

Division staff represent the Department on committees and organizations such as the State GIS Council, the Nebraska Soil and Water Conservation Society, the Nebraska Forest Stewardship Coordinating Committee, the Earth Wellness Festival and the Nebraska Envirothon. Currently the Department's representative is chairman of the State GIS Council.

Natural Resources Commission - Water Sustainability Fund

The Natural Resources Commission (Commission) is working to define guiding principles which will facilitate the development of rules governing the use of the Water Sustainability Fund (WSF). Subsequent to the passage of LB 1098, which added eleven additional representatives to the Commission and created the WSF, the Commission at its meeting in June assigned the task of developing a set of draft rules to the Comprehensive Planning Committee (Committee). As of Thanksgiving, the committee has met nine times to develop recommendations for best implementing the WSF and has also given updates to and obtained input from the full Commission at three additional meetings.

Thus far, the Committee has been evaluating and discussing the Legislature's direction and intent for

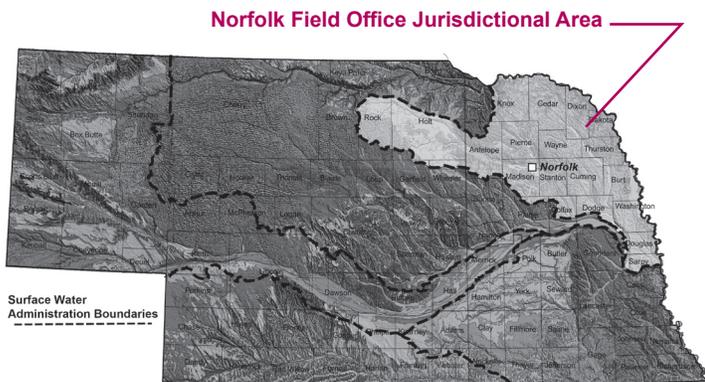
the WSF, and proposing alternative approaches to accomplish the goals for funding assistance. Committee progress is being continually shared with the full Commission for further refinement and guidance with the intent of ensuring clear and concise communication among all Commissioners.

Department staff is assisting the Committee and the Commission and is also responsible for producing a complementary set of rules to implement the Department's statutory responsibility of verifying project eligibility and for the administration of the WSF. Together, the Commission and Department rules will create the process a prospective applicant must follow to apply for for WSF cost-share assistance.

Meet the Norfolk Field Office

The Norfolk Field Office was created in 1977 due to increased water use in northeast Nebraska. From the early days until now, generally speaking, the field office has been staffed with 2.5 people. The half person is contracted help from the Lower Elkhorn Natural Resources District (NRD).

The Norfolk Field Office jurisdictional area is northeast Nebraska, roughly bounded by the Town of Bassett on the west, the Missouri River on the north and east, and the Platte River on the south (see map below). The largest city in the area is Omaha.



Duties include measuring water in rivers, streams, canals and river pumps to regulate the amount of diversion. **Field staff also inspect about 100 dams and reservoirs on a yearly basis.** The field office currently operates 13 fulltime gaging stations on rivers and streams, one fulltime canal gage and two tempo-

rary gages on streams for an interagency water study. The gaging stations continuously measure the stage of the stream. With monthly water measurements, a daily and yearly calculation of the amount of flow that passes the gaging stations is obtained. In addition to monthly measurements, staff also measure during floods for high water amounts and during droughts measure the lowest flows of our long-term gaging stations.

Another major task is administration of water laws in accordance with water right priority systems and preference systems. This includes is adjudicating (canceling) water rights for non-use. Nebraska law states a water right may be canceled if not used for more than five consecutive years. Each year, our office designates a stream basin or reach of a river where we field audit all water rights for non-use. Normally in the vicinity of 100 water rights are field checked for non-use. Water rights are property rights and usually property rights are not easily taken away. Originally the logic for the non-use cancellation of water rights was that a senior water user should not maintain priority over other junior water users in a water shortage unless the senior user was actively using – first in time, first in right only if actively using. Thus, the cancelling of non-used water rights.

The Norfolk Field Office area has about 860 individual surface water irrigation rights, about 200 storage reservoir impoundments, and a number of the largest water users in the state.

Gaging station at Willow Creek Dam and Reservoir. Gaging stations are used to automatically monitor hydrologic data of streams, reservoirs, and other water bodies. The Norfolk field office currently operates 16 gaging stations.



Nebraska
Department of Natural Resources
 Norfolk Field Office
 601 East Benjamin Ave., Suite 101
 Norfolk, Nebraska 68701
 Phone 402-370-3379

Floodplain Program

The floodplain section of the Department of Natural Resources has received a grant of almost \$630,000 from the Federal Emergency Management Agency (FEMA) to deploy two Risk Mapping, Assessment and Planning (Risk MAP) projects in the Upper Little Blue River and the West Fork of the Big Blue River watersheds. The Risk MAP project vision is to deliver quality data that increases public awareness and leads to action that reduces risk to life and property. Under the Department's statutory responsibilities, the floodplain section received this large amount of funds because the Department has maintained an excellent standing in FEMA's Cooperating Technical Partners Program and established good relationships with the local communities. Below is a summary of the funded tasks for the two Risk MAP projects:

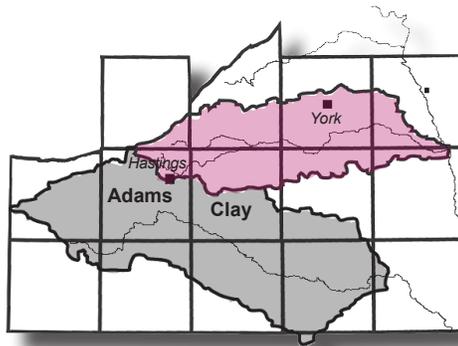
- **The Flood Risk Review Meeting** and preliminary products. The Flood Risk Review Meetings give community officials the opportunity to review the draft Risk MAP products. For these projects these products include the Flood Risk Report, Map and Database, along with Flood Depth and Analysis Grids, Flood Risk Assessment Data and Areas of Mitigation Action figures.



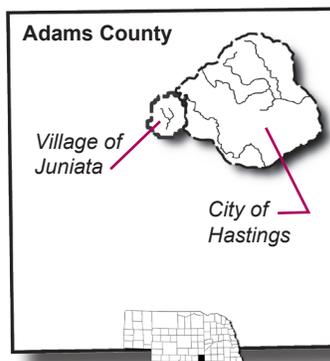
- **Watershed level outreach** to increase community awareness of flood risk and how it can be mitigated. There are also funds to do one-on-one outreach with the communities located in the **Upper Little Blue River and West Fork of the Big Blue River watersheds** to help identify project needs.

- **New basic studies for Adams and Clay County.**

The basic studies include performing basic hydrology and hydraulic analysis on the streams that are one square mile or bigger within each county. Regression Equations will be used for the hydrologic analysis and the normal depth equation for the hydraulic analysis.



- **New enhanced studies** for Lake Heartwell Tributary, North Branch of the West Fork of the Big Blue River, South Branch of the West Fork of the Big Blue River, West Fork of the Big Blue River, Pawnee Creek in the City of Hastings, and for Main Ditch and East Tributary in the Village of Juniata. Enhanced studies include new hydrologic and hydraulic models will be developed for each relevant watershed and stream. The floodplain section will obtain new survey information, and use the 2009 Light Detection And Ranging (LiDAR) for model elevation data.



The floodplain section has also received funds under the Community Engagement and Risk Communication (CERC) grant and the Program Management (PM) grant. The CERC grant is for activities that build risk awareness and understanding at the local level, to increase a community's ability to communicate risk at the local level, support local efforts to reduce natural hazard risk within a community or watershed area, and to keep communities and other stakeholders engaged throughout the Risk MAP process. The Program Management grant is for activities necessary to manage multiple projects for the State. A summary of the funds is listed below.

Risk MAP	\$480,955
Community Engagement and Risk Communications (CERC)	\$119,297
Program Management (PM)	\$28,755
TOTAL	\$629,007

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301 Centennial Mall South, 4th Floor
P.O. Box 94676
Lincoln, Nebraska 68509-4676

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Dave Heineman, Governor

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Department of Natural Resources

Brian P. Dunnigan P.E., Director

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Real-Time Streamgaging continued from p. 1

plies and uses, calibrating groundwater models, complying with interstate compacts, and planning for future water demands.

The Department of Natural Resources has been working on a new **real-time streamgaging website** to display and distribute streamgaging data. The first phase will include provisional Real-Time stage and discharge for the Department's gages. This release will also provide a link to active Nebraska USGS streamgages. Phase one is scheduled to be released this winter.

Subsequent phased releases of enhancements to the website will include:

- Additional Availability of Daily Data
- Additional Search Criteria
- Additional Export Options
- Historic Data
- Metadata
- Individual Streamflow Measurements
- Interactive Map
- Customizable Favorites Page.
- Links to Additional Streamgaging Data Sets

Nebraska Department of Natural Resources....

....dedicated to the sustainable use and proper management of the State's natural resources.