

Finding Solutions Today
For a Secure Tomorrow

Spectrum

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Papio-Missouri River Natural Resources District

CHANGES COMING to the NRD's Groundwater Management Plan



Across Nebraska, irrigation is by far the largest use of groundwater at more than 7.3 billion gallons per day, or nearly 95% of the total annual use.

However, in the Papio-Missouri River NRD, the tables are turned. In our District, groundwater is used mostly for municipal and domestic drinking water supplies and irrigation comprises about 30% of our groundwater use.

These statistics highlight the fact that both a very high quality and abundant quantity of groundwater is necessary within the NRD to fulfill the water needs of nearly 780,000 people. Since drinking water is the primary groundwater use in the P-MRNRD, it is imperative that proactive, protective plans are a priority for groundwater management.

A preliminary Groundwater Management Plan for the District has been approved by the Board and is currently under review at the NE Dept. of Natural Resources, prior to a formal public hearing and final adoption.

NRDs in Nebraska have the responsibility under state statute to formulate and maintain a comprehensive groundwater management plan for their entire district. The P-MRNRD's current GMP was last revised and approved in 1994 and at that time acknowledged a lack of existing data on the District's groundwater aquifers, groundwater quality, and groundwater quantity available to meet its many uses. Efforts by the P-MRNRD since 1994 have focused on filling this data gap, rather than declaring and basing the regulation of Groundwater Management Areas on insufficient information.

Having accumulated an additional 20 to 30 years of data about our NRD's geology and groundwater, the District's Board started updating the plan in 2016.

The key objectives of the NRD's updated groundwater management plan are to establish goals and actions that manage groundwater uses and protect groundwater from contamination by:

Evaluating quality and quantity in the District's three primary aquifers and one secondary bedrock aquifer: including the Missouri River Alluvium, Platte/Elkhorn River Alluvium, isolated and disconnected upland area aquifers, and the Dakota aquifer.

Improving consistency with surrounding NRDs' plans and regulations for groundwater management.

Determining triggers for groundwater quality and quantity that can identify and target areas of potential concern.

Synchronizing the Groundwater Plan with the Integrated Management Plan for the connected surface water and groundwater in the Platte & Elkhorn River valleys.

Groundwater 101: District Facts

The District has an abundant supply of groundwater, found in aquifers around the Missouri, Platte and Elkhorn Rivers as well in upland aquifers.

Groundwater can typically be found about 5 -100 below the surface, depending on the soil type.

The water in our rivers and the water beneath the ground are connected.

About 3% - or 20,000 people - of the district's residents drink from an estimated 6,700 untreated individual wells.

The majority of District residents drink treated water from municipalities which gather water from both the Missouri River and groundwater.

The NRD regularly monitors water table levels and groundwater quality from designated wells.

GROUNDWATER Management

Rules and Regs: The NRD has the obligation to declare certain areas Groundwater Management Areas if the water quality or quantity falls below specific, defined standards in the plan. The recently updated plan defines triggers/limits for water quality phases and water quantity levels. Once water quality reveals some concerns, the NRD can enact some controls – varying from encouragement to cost-sharing to requirements. For example, the NRD could set restrictions on the timing and amount of fertilizers that can be applied to agricultural fields.

The District has set up these controls in Phases; and most of the NRD would be in Phase 1, the least stringent requirements. Relying on the latest groundwater level measurements, no aquifers in the PMRNRD are experiencing declines in quantity.

However there are certain areas showing a concern for nitrates within the District. The primary areas of concern which exceed the proposed Phase II water quality trigger of 5 ppm are the Tekamah Wellhead Protection Area and the groundwater along the Platte River on both sides of Highway 50 south of Springfield. These two areas may be declared Phase II Water Quality GMAs.

Some general control measures being considered for rules and regulations as part of the Groundwater Plan include:

- Support of individual Wellhead Protection Plans for community Wellhead Protection Areas
- Education and training for both rural and urban fertilizer and irrigation management
- Restricting nitrogen fertilizer application dates and requiring the use of inhibitors in specified areas
- Make water quality testing for domestic and irrigation well water more readily available
- Cost-share for practices including water meters, soil moisture sensors, pivot controls for variable rate irrigation, and chemigation backflow check valves
- Require well permits for new wells and apply a minimum well spacing of 600 feet between active supply wells

The exact details of the new rules and regulations are in the process of being drafted and should be available for public review and be the subject of a public hearing prior to adoption. While the proposed rules are meant to be consistent with surrounding NRDs, they will also be uniquely adapted to the glaciated hydrogeology and dominant domestic use of groundwater in the P-MRNRD. The glaciated hydrogeology of our District means that some areas have an abundant supply of available groundwater connected to rivers and streams, while other areas have such limited groundwater or poor groundwater quality that residents must rely on rural water systems provided by the Papio or Lower Elkhorn NRD for potable drinking water.

Drinking Water Protection for Well Users: Recent calculations included as part of the Groundwater Management Plan indicate that nearly 8,000 people in the District rely on one of four rural water systems every day for their drinking water needs. Also, according to U.S. Census Data and municipality data, over 725,000 people in our District get their water from a municipal water system supplier. This is good because state requirements ensure that rural and municipal water supplies meet water quality standards.

This leaves 3% or less of the District's population who get their drinking water from their own individual domestic wells. Three percent doesn't sound large, but it equates to more than 20,000 people who are not drinking regularly tested groundwater, and it takes approximately 6,700 wells to serve these 20,000 residents.

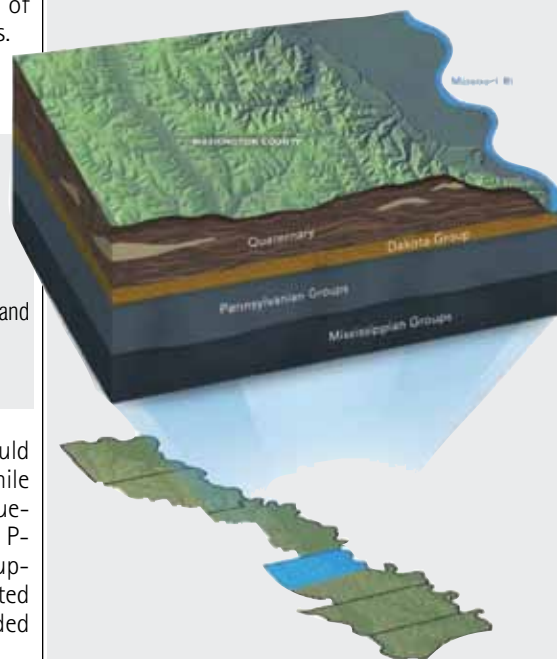
Specifically, District residents who rely on individual domestic wells for their water supply should review the information in the plan and determine if they would like assistance with future water quality testing. Agricultural producers are urged to consider best management practices which may improve their commercial fertilizer application or irrigation efficiency and see what NRD assistance may be available. While most urban residents of the District do not live directly above the same vulnerable groundwater as the rural areas of the NRD, they are encouraged to learn about and help prevent surface and groundwater contamination.

Overall, the most important purpose of the P-MRNRD's Groundwater Management Plan is to provide a better understanding of the sources and quality of the water in our aquifers and utilize that knowledge to protect the drinking water for close to a million people.

The draft plan can be found at www.papionrd.org

Generalized Geologic Block Diagram of the P-MRNRD

In the upland areas, the total thickness of the surficial deposits ranges from 50 to 300 feet with the thickest deposits in the northern portion of the district. Groundwater is found in pockets below this. The river valley deposits are usually less than 100 feet and aquifers are saturated sand and gravel.



PMRNRD Resident Estimates and Domestic Water Supply

County	Municipal Water	Rural Water	Domestic Wells**
Burt	2,210	750	480
Dakota	16,435	2,100	1,500
Douglas	533,000	540	7,600
Sarpy	155,000	0	5,300
Thurston	3,930	336	510
Washington	9,610	4,230	5,000
Total	720,185	7,956	20,390

** This means that about 3% of the NRD's residents drink water from untreated individual wells. The Groundwater Management Plan will help protect the integrity of this groundwater.

RIVER Recreation

NRD's Four River Access Areas Open for Season

6am - 10 PM daily through Nov. 1; free!

- 1 Elkhorn Crossing Recreation Area:** located just east of the intersection of 252 St. & Bennington Rd. Site offers camping.
- 2 Elkhorn River Graske Crossing:** Elkhorn River and West Dodge Rd.; boat launch.
- 3 Elkhorn River & West Maple Rd:** offers boat launch & vault toilets.
- 4 Platte River Landing:** Near Highway 64 & Platte River; offers picnic spots & concrete boat ramp.

NEW: playground equipment & a picnic shelter at Elkhorn Crossing Rec Area; upcoming a new ADA rest room facility sand volleyball courts at Platte River Landing this fall.

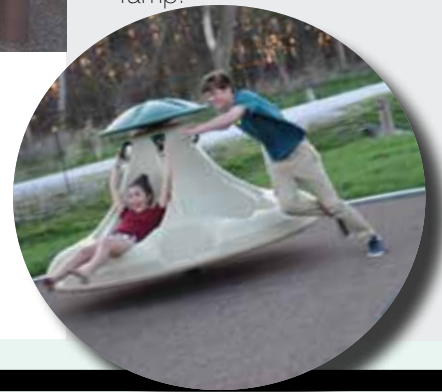
All weather-related closings for these sites will be posted on the Papio NRD's Facebook page and web site:
www.papionrd.org

Elkhorn River Mileage

Elkhorn Crossing to W. Maple Road – 9 River Miles
W. Maple Rd to Graske @ W. Dodge Rd – 2.5 River Miles
Graske @ to Louisville State Rec Area (Platte River) – 19.5 River miles

Platte River Mileage

Platte River Landing to Two Rivers State Rec. Area – 7 River Miles
Platte River Landing to Louisville State Rec. Area – 27 River Miles



Projects Update

Washington County Rural Water Addition

About 525 households in Washington County now are using high quality water from the NRD's Washington County rural water system. Called The Lakeland Connection, this connection serves the Lakeland Estates Water Company (LEWC) as a wholesale customer, meaning we provide water to a large master meter. Lakeland Estates Water Company distributes it from there.

LEWC serves over 525 households.

The connection replaces LEWC's old wells. The project was paid for using a connection fee by LEWC and loans.



Historic Trail along West Papio Creek is Under Design

Design is underway for the next section of the West Papio Trail following the creek from Giles Road to Millard. Bidding for the project is slated for this fall, and construction is planned for next year. The project is funded by the NRD and the Cities of Omaha and LaVista.

This 2.75-mile trail follows an abandoned UP railroad line along the creek from near 108th to near 132 and Q streets, traveling under I-80. Some elements from this old transcontinental railroad route will be highlighted along the trail, and old timbers have been salvaged to be used in the project. Plans call for historical information at rest areas along the route.

According to **Eric Williams**, NRD Natural Resources Planner, "One of the best benefits of this trail is that this is a great recreation corridor to travel under the interstate going north and south. It's a good extension of a very long trail."

Reminder: South Omaha trail is open and connects from the Keystone Trail at Karen Park to the Field Club Trail at Vinton Street.



Northwest Omaha Dam Site 15a Sees Progress

Dam Site 15A in northwest Omaha is still under construction, and

an opening is tentatively planned for spring of 2018. The lake will start filling this summer once the dam gates are closed. Nebraska Game and Parks will stock the lake later in the summer and nature will play a large role in how quickly it fills.

The 225-acre lake is located on the North Branch of West Papillion Creek in Douglas County near 168th and Fort Streets. It's built to address the immediate need for flood control in the Omaha metropolitan area and areas downstream along West Papillion Creek

Board of Directors

Papio-Missouri River Natural Resources District

Subdistrict 1

Ted Japp, Blair

Ted Japp, DC, is a retired Doctor of Chiropractic Medicine and received his Doctorate from Northwestern Health Sciences Univ. Ted lives in Blair and his interests include hunting, fishing, softball, reading, health and fitness, travel and biblical studies. He is also an advocate for developmentally disabled individuals. Ted served on numerous committees and held memberships within his profession. He is a past president of a Lions club. Ted and his wife Lori have three children. Director Japp joined the NRD Board in 2017.



Subdistrict 2

Fred Conley, Omaha

Fred Conley is the Enterprise Zone Coordinator with the Greater Omaha Workforce Development. He holds a BS degree from UNO, a JD from Creighton University, and has taken graduate courses in counseling. Active in the community, Fred serves on the Boards of the Omaha Small Business Network Board and the Butler-Gast YMCA. Fred joined the NRD board in 1999, after serving two years on the District's first elected Board in 1975. He and his wife, Teresa, have three children.



Subdistrict 3

Larry Bradley, Omaha

A former board member, Larry Bradley rejoined the NRD Board in January, 2017. He is an Adjunct Professor at the Univ. of Nebraska at Omaha (UNO), a member of the Ancient Order of Hibernians (President of the Father Flanagan Div.) and a member of the Society of Vertebrate Paleontology. Larry enjoys hiking, fishing and hunting. He holds numerous degrees from UNO and a Ph.D. from the Univ. of Nebraska, Lincoln. Director Bradley is married to Dr. Sylvia Rael and they have a daughter and son.



Subdistrict 4

John Conley, Omaha, Treasurer

John Conley is the retired Manager of Engineering for Metropolitan Utilities District of Omaha, where he was employed for nearly 40 years. He holds a BS in Industrial Engineering from Iowa State and served in the U. S. Army Signal Corps and the Army Reserves. He was a registered professional engineer. He holds memberships in the Omaha Engineers Club and the Loveland Golden K Kiwanis Club. He and his wife, Peg, have three sons and six grandchildren. He joined the NRD Board in 1999 and has served as Treasurer of the District since 2000.



Subdistrict 5

Richard Tesar, Waterloo Secretary NARD and Director

This is Mr. Tesar's seventh term in office. Rich is the retired owner of Rich Tesar Outdoors, a professional outfitting service. His outdoors involvement includes his role as President of the Sokol Camp Association, a recreational area on the Platte River. He was twice appointed to the Nebraska Riparian Vegetation Task Force. Rich enjoys hunting, fishing, and training Labrador Retrievers. He and his wife, Mary, have two sons and one grandchild. Rich served on the NRD board from 1984-1992, and re-joined the board in 2001.



Subdistrict 6

Jim Thompson, Omaha

Jim Thompson holds a BS in Business Administration from the University of Minnesota. He worked in the Federal Government in contracting and material management for the VA Medical Center in Omaha and held various sales positions since his retirement. Jim is active with the Leavenworth Neighborhood Association, the Destination Midtown effort and has served on citizen advisory committees on environmental issues for Omaha. He and his wife Cindy have a son and two daughters. Jim was elected to the Board in 2002 after previously serving from 1997-98.



Board of Directors

www.papionrd.org

402.444.6222

Subdistrict 7

Patrick Leahy, Omaha

This is Mr. Leahy's second term on the board. Patrick is employed as a Senior Campaign Manager with the Steier Group. He is also a student at Creighton University pursuing his master's degree and graduated from the Univ. of Nebraska at Omaha with a bachelor's degree in 2005. Patrick is a Captain in the United States Army Reserve and enjoys travel, camping, reading, hockey and golf.



Subdistrict 10

David Klug, Gretna, Chairman

David Klug works for Nebraska Orthopaedic Hospital as a Six Sigma Master Black Belt, Senior Performance Improvement Coordinator. He holds BS in Political Science and a Master's Degree in Public Administration from UNO. David has also been elected three times to his Sanitary Improvement District Board and currently serves on the Board of Directors of the Healing Gift Free Clinic. His hobbies include studying history, aviation, mountain biking, photography and politics. He joined the NRD board in 2007.



Subdistrict 8

Tim Fowler, Omaha

Vice Chair and Alt. NARD Director

Tim Fowler is a Sr. Defense Research Analyst for Riverside Research at USSTRATCOM, Offutt AFB. He is also a Retired Naval Commander serving 25 years. Tim is active in various military and professional groups including the St. Thomas More's Men's™ Club, Jr. Vice Commander of Disabled American Veteran's Post #2 in Omaha, South Omaha Neighborhood Association, and the Robin Hill Pool Association. Tim holds a BA from the University of Nebraska at Lincoln, and he and his wife Teresa have five children. He joined the NRD board in January of 2003.



Subdistrict 11

John B. Wiese, Papillion

John B. Wiese, a resident of Papillion, was elected to the NRD Board of Directors in 2016. He is the owner and CEO of W-S Industrial Services in Council Bluffs, Iowa. Mr. Wiese enjoys motor cycles and horses. He is a member of the American Quarter Horse Association. Director Wiese raised two children.



Subdistrict 9

Mark Gruenewald, Omaha

Mark Gruenewald joined the NRD Board of Directors in January, 2017. He graduated from the University of Nebraska, Lincoln and holds a degree in Agricultural Economics with a minor in Computer Chemistry. Director Gruenewald was born and raised in David City, Nebraska.



General Manager

John Winkler is the General Manager of the Papio-Missouri River Natural Resources District. As GM, he oversees the District's daily operations. John was previously the City Administrator/Economic Development Director for Plattsmouth and Cass County NE. He is originally from Omaha, and holds a master's degree in Public Administration.



ELECTRONIC CAR CHARGING

Now installed at Chalco Hills Recreation Area you will find a new electronic vehicle charging station. Located in southwest Omaha, it's free and open to the public 6 AM – 10 PM, during park hours.

Starting in January, electric vehicle users have found this spot from online searches. In fact, the first week it was open several users had already found it. The station is located in the Natural Resources Center parking lot, and two signs are posted for EVO charging.

According to **Eric Williams**, NRD Natural Resources Planner, the site was built to encourage resource conservation within transportation. "We are seeing the response for this to grow this spring as the weather gets warmer," he said. The location is perfect to charge a car while hiking around the lake and enjoying the area's amenities.

The charger features 2 plugs for 2 cars, and it can be used during business hours.



GREEN Living



**448 Households
91 Businesses
65,00 pounds recycled**

Tekamah, and Blair. More than 65,000 pounds of old electronics including large tube tvs, computers, office equipment, microwaves, radios, copiers and other old electronic items were collected, saving landfills from these products.

NRD staff and other volunteers worked with Secure Recyclers to collect four large trucks of items which were sent to Lincoln for processing. It's estimated about 90 percent of the items can be recycled.

"The collection provided an opportunity for area residents and businesses to dispose of computer systems and small electronic items whether working or not," said **Deb Ward**, Programs Assistant and coordinator of the event for the Papio-Missouri River NRD at Tekamah.

"Bringing these items to the collection frees space in your home and businesses and ensures that the potentially hazardous materials such as lead, PCBs, and mercury contained in electronic equipment are recycled or safely eliminated," added Ward.

Funding for this event is provided through the Litter Reduction and Recycling Incentive Grant Program, the Nebraska Department of Environmental Quality, the Papio-Missouri River NRD and Nebraska Loess Hills Conservation & Development Council.

ELECTRONICS RECYCLING

A free scrap computer and electronic waste collection in April proved to be a win-win situation.

A total of 448 households and 91 businesses participated in the 2-day event which was held in the communities of Dakota City, Walthill,



\$6.7 MILLION granted for District Flood Control Projects

The Papio-Missouri River Natural Resources District will receive **\$6.7 million** from the NE Water Sustainability Fund managed by the NE Natural Resources Commission. The commission approved the funding in December for Papillion Creek Watershed flood prevention reservoir sites West Papio 6 and West Papio 7 in Sarpy County.

"We are extremely grateful to the commission for this funding. They had many worthy projects to consider and their support for the Omaha area's flood prevention needs is appreciated," said **John Winkler**, NRD General Manager.

The NE Water Sustainability Fund was created by the NE Legislature to boost state financial involvement in a variety of projects to facilitate Nebraska's critical water management needs. With this additional funding, The District will now be able to accelerate the construction of WP 6 & WP 7.

The district will use the **\$6.7 million** to complete land rights acquisition and construction for the two reservoir sites, ultimately reducing pressure on property taxes. Dam Site WP-6 will be built on the west side of 114th Street, north of Cornhusker Rd. The lake will be approximately 34 acres of water surrounded by an additional 69 acres of public parkland.

WP-7 will be built on the east side of 108th Street, south of Cornhusker Road, and is smaller with about 13 acres of water surrounded by public parkland. Both projects will be managed for recreation by the City of Papillion, and both reservoirs will enhance flood protection downstream along the West Papio Creek, including residential and commercial properties in Papillion and Bellevue.

The projects are in cooperation with the Papillion Creek Watershed Partnership consisting of the NRD, Sarpy County and the Cities of Omaha, Papillion, Bellevue, LaVista, Gretna, Ralston, and Boys Town. The Partnership seeks solutions to prevent floods and to enhance water quality for the benefit of the metro area residents.

The rate of return to the taxpayers:

2.3 to 1 for every dollar spent



THANKS NE WSF!

SOUTHERN SARPY WATERSHED PARTNERSHIP

Southern Sarpy County is poised for growth. Plans are being made throughout the Papillion, Springfield and Gretna areas for new developments and acreage lots. A new sanitary sewer plan for this is also in the works.

The next step in efficient resource planning for this area is addressing storm water issues before this growth occurs. The watershed includes all areas of Sarpy County draining directly toward the Elkhorn or Platte Rivers.

"We want to get ahead of water quality and potential flooding issues before extensive development occurs," said NRD General Manager, **John Winkler**. "We can avoid many difficulties when we've encountered while working in the Papio Creek watershed by planning ahead."

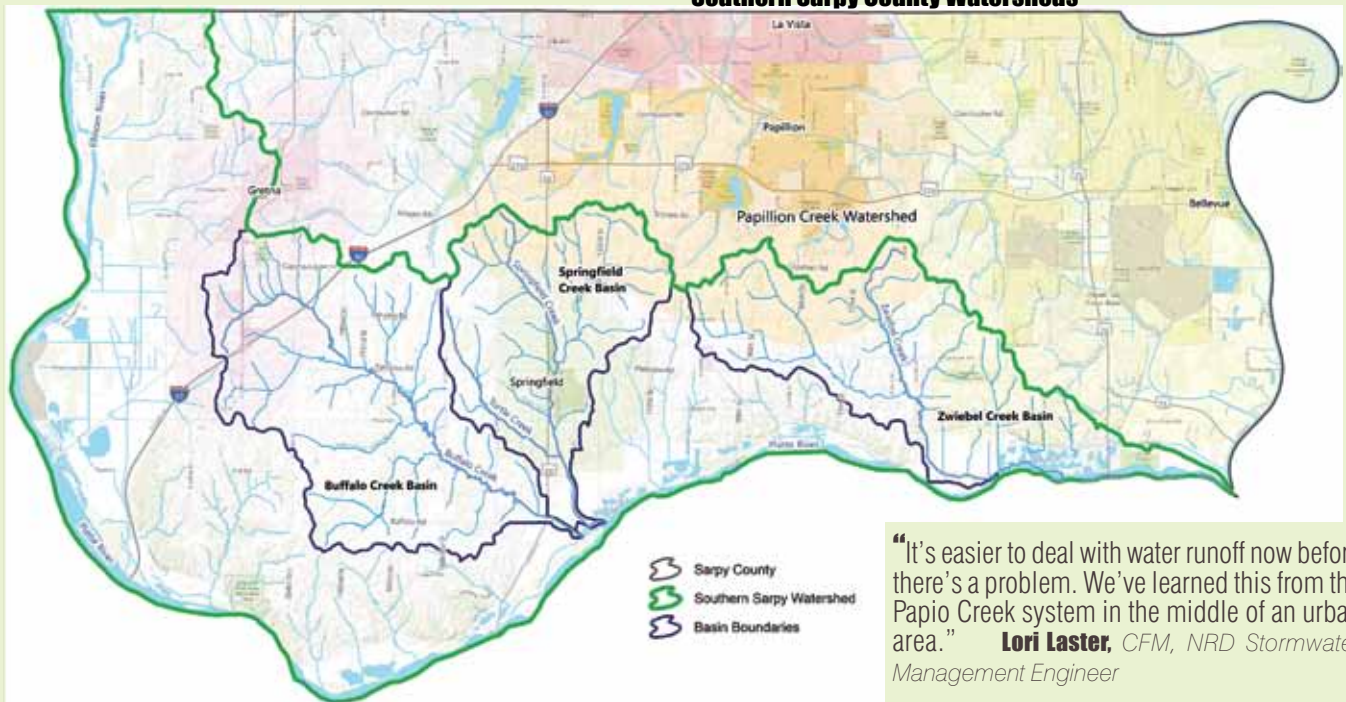
The Papio-Missouri River NRD Board has approved an interlocal agreement with Sarpy County, and the Cities of Bellevue, Gretna,

Papillion and Springfield to form the Southern Sarpy Watershed Partnership (SSWP) to develop policies related to storm water management.

Unlike the Papillion Creek Watershed, the Southern Sarpy County Watershed has very little stream or water quality data available. The need to develop a comprehensive watershed management plan is the top priority of the new partnership.

In order to know more about the water runoff patterns, a contract has been approved by the Papio-Missouri River NRD Board of Directors for an engineering study. This study will develop policies related to storm water management in the southern Sarpy County area. The work will take place in three phases over a five year period. The Board approved the first phase with FYRA Engineering for \$400,640. The cost of the study will be shared among the members of the Southern Sarpy Watershed Partnership.

Southern Sarpy County Watersheds



"It's easier to deal with water runoff now before there's a problem. We've learned this from the Papio Creek system in the middle of an urban area." **Lori Laster**, CFM, NRD Stormwater Management Engineer

NRD STAFF NOTES

RETIREMENT: **Emmett Egr**, Information/Education Coordinator has retired from the District after 40 years of communication work and strategic planning for the District. During his years, he initiated several successful programs and received numerous NACD newsletter awards. He is a former President of the Nebraska Chapter of the Public Relations Society of America. Under his leadership the Papio NRD influenced and led other Natural Resources Districts across the state in their informational campaigns: websites, social media, and programming. He is most proud of the television informational campaigns that he produced for the District. He is looking forward to retirement and enjoying more time fishing and traveling with his wife Barbara. **Thanks for all of your work, Emmett! Well Done.**



NEW STAFF: **Tracy Thompson**, has started as a District Secretary/HR Assistant. She holds a BS in Business Administration. **Kaylen Kelley** joined the NRD as a District Program Assistant for the Omaha Office. She holds a BS in Parks and Rec Management. And most recently, **Shawn French** has started working as a District Surveyor/GIS Tech/Pipe Inspector. Shawn earned a Masters Degree in Eastern Archeology and Languages and holds GIS certifications.



NRD HONORED: A big thank you to the Sarpy County Economic Development Corporation for naming the Papio-Missouri River NRD and Bellevue Mayor Rita Sanders as the 2017 winners of the Sarpy County Partner in Economic Development Award! A great honor and very appreciated!

The NRD and Mayor Sanders were honored for economic benefits that will be realized through the improvement of Missouri River levees, south of Bellevue, protecting Offutt Air Force Base and the Highway 34 corridor.

David Klug, Chairman

John Winkler, General Manager

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Tekamah, NE 68061; (402) 374-1920 **Thurston**

County: 106 S. Costello, Walthill, NE 68067;

(402)846-5655 **Dakota County:** 1505 Broadway,

Dakota City, NE 68731 (402)494-4949 **Sarpy/**

Douglas Counties: 8901 S. 154 St.; Omaha, NE

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BOARD OF DIRECTORS:

David Klug, CHAIRMAN

Mark Gruenewald

John Conley

Ted Japp

John Wiese

Larry Bradley

Fred Conley

Tim Fowler

Patrick Leahy

Jim Thompson

Richard Tesar

The NRD Board holds its monthly public meeting the second Thursday of the month at Chalco Hills Recreation Area, 7 PM. The NRD is an equal opportunity provider. Spectrum writer/designer: Jennifer Knight, Little House Publications

Green Living
Board of Directors
NRD's Draft Groundwater Management Plan

In This Issue:

Spring 2017



Finding Solutions

**PAPIO-MISSOURI RIVER
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