

Crosscurrents

Serving the St. Paul District since 1977

January 2013 Vol. 39, No. 1

**Dewatering a
lock and dam**

Page 4

**Extreme makeover
in store for
district website**

Page 9



®

U.S. Army Corps of Engineers

St. Paul District



Joseph Gurin, operations, uses a clevis to connect equipment to a crane during dewatering construction at Lock and Dam 6, near Trempealeau, Wis., Jan. 16.

Photo by Kevin Bokay



Crosscurrents is an unofficial publication authorized under the provisions of AR 360-1. It is published monthly for U.S. Army Corps of Engineers, St. Paul District.

Views and opinions expressed in *Crosscurrents* are not necessarily those of the Department of the Army or the U.S. Army Corps of Engineers.

Articles and photography submissions are welcome and must arrive by the 15th day of the publishing month for consideration. Submissions can be mailed or emailed.

Submissions should be in Microsoft Word format for all written copy and photos should be no smaller than a 5 x 7 at 300 dpi. All photographs appearing herein are by the St. Paul District Public Affairs Office unless otherwise accredited.

The mission of *Crosscurrents* is to support the commander's internal information program for the St. Paul District and its stakeholders.

Crosscurrents also serves as the commander's primary communication tool for accurately transmitting policies and command philosophy to the St. Paul District community and its customers.

Address all inquiries to:
Editor, Crosscurrents
U.S. Army Corps of Engineers
180 Fifth Street East; Suite 700
St. Paul, MN 55101-1678
(651) 290-5202
cemvp-pa@usace.army.mil

District Commander
Public Affairs Chief
Crosscurrents Editor
Contributors

Col. Michael J. Price
Shannon Bauer
Patrick Moes
George Stringham

Contents

- 3** Comments from the top
- 4** District works through cold weather to complete Lock and Dam 6 dewatering project
- 6** History in the making, Headwaters reservoirs were a vision of the first district commander
- 8** District finds opportunity during drought, completes repair work at Minneapolis lock
- 9** Extreme makeover near for district website
- 10** Employee selected as the division hard hat of the year recipient
- 11** Corps of Engineers Civil War history comes alive with display at district office
- 12** News & notes



Crosscurrents is read by tech-savvy people like Dave Kayser, Army Corps of Engineers Information Technology.

Photo by Patrick Moes



Facebook



YouTube



Flickr

Click on a logo to go to the St. Paul District social media page, where you can like us, watch videos about us or see more photos.

Comments from the top

Team,

Welcome back from the relaxing holiday break. As we begin the gloom period, that time when the weather turns colder and snowier, please remember to be safe as we participate in the many outdoor activities the winter wonderland has to offer and as we drive in less than desirable conditions.

As we come back and get settled in this year, we are faced with financial challenges that have caused the Department of the Army to issue some fiscal guidance. This month, I would like to review some of that guidance and relate how it will affect all of us.

The Army faces significant budgetary uncertainty for a number of reasons and must take some immediate steps to reduce its overall expenditures. While most of the cost-saving measures are occurring throughout the regular

Army and its installations, the Corps of Engineers is also subject to many of these same measures.

First, there is an immediate hiring freeze across the Army's civilian workforce. There are waiverable positions, but the Chief of Engineers remains our approval authority. The guidance is also clear in that minimal waivers will be allowed. What this means to the district is that we will have to clearly define our critical positions. We are looking at every aspect of what we do and determining if those tasks are mission critical.

The second aspect relating to personnel is the Army's guidance to terminate temporary employees and to not extend any term employees consistent with mission requirements. To date, students (temporary hires) in the Pathways Program are exempt.

Workforce planning has become extremely complex as we look to the

future. With respect to all personnel cost-saving measures, we will continue to examine our decisions based on whether the decision is reversible and what the decision means to our future.

Other cost-saving measures include curtailing temporary duty assignments, travel, training, administrative costs and conference attendance. Everything will be scrutinized. We are also preparing for sequestration, which may include a budget cut across all programs. The district leadership is analyzing impacts and developing actionable plans. Pending additional guidance, I will communicate potential impacts to the district when I hear more.

The bottom line is that the district will manage this crisis. We will continue to deliver our world-class solutions; and we will work with and communicate with our partners and customers.



Col. Michael J. Price

U.S. Army Corps of Engineers
St. Paul District Commander

Finally, and on a brighter note, it is winter, and we are finally getting some much needed precipitation. We are Minnesotans, Wisconsinites, Iowans and North Dakotans; we enjoy the weather we are given ... at least I do. For us, the cold is not as fun without the snow, so enjoy it while you can and be safe doing it.

Thanks for all that you do day in and day out. Keep up the great work that has given the St. Paul District a great reputation across the Corps!

BUILDING STRONG.



A district employee monitors work at the Lock and Dam 6 dewatering, near Trempealeau, Wis., Jan. 16. The lock is dewatered approximately every 20 years for maintenance.

Photo by Kevin Bokay



Knute Knutson, operations, operates a crane during work at the Lock and Dam 6 dewatering, near Trempealeau, Wis., Jan. 16.

Courtesy photo

District works through cold weather to complete Lock and Dam 6 dewatering project

by Kevin Bokay

For the fourth time since it was put into service in 1936, Lock and Dam 6, near Trempealeau, Wis., is being dewatered. The lock was closed Dec. 3, and the repairs are scheduled to be completed by March 11.

The 13 lock and dams within the district are dewatered for maintenance on a schedule of every 15 to 20 years. The work is scheduled around the navigation season, so maintenance takes place during some of the coldest weather of the year. At least 35 people make up the dewatering team; they are drawn from lock and dam personnel, maintenance and repair crews and personnel from the dredging team.

Traditionally, temperatures during the operation are seasonably cold with daily highs averaging around 30 degrees. This is mild compared to the cold temperatures endured during previous dewaterings. When the lock chamber was dewatered in 1994, workers faced temperatures from 25 to 35 degrees below zero. Comparatively, this year's dewatering took place during very good weather.

"Before maintenance operations could even begin, the crew removed four barges of mussels, sand and other debris that had accumulated at the bottom of the lock," said Rojean

LeSeure, Lock and Dam 6 lockmaster. "Before dewatering begins, the cranes at either end set the bulkheads into slots in the concrete, they bulkhead the Tainter valves and check all the seals - then the lock can be pumped down. We sink an equipment barge with heavy machinery on it to allow access for the crew."

During this scheduled maintenance, work includes repairing concrete, sandblasting and painting the miter gates, and replacing most of the bubbler system. The bubbler system assists in dislodging debris that may disrupt the operation of the gates. Workers expect to replace 80 percent of this system with stainless steel tubes that have a longer service life.

Sandblasting of the miter gates takes place during the night and painting is done during daylight hours. "The sandblasters can see what they're doing better at night, in low light, and the painters work better during the sunlit hours" says Scott Uhl, operations.

Uhl said the team is also repairing concrete along the lock chamber walls. The Corps is using a wet-cut system that minimizes airborne dust and debris. This method is more difficult to use in near-freezing conditions but is more environmentally friendly, he said.



Brandon Olson, operations, works on diagonals for the Lock and Dam 6 lock gates during the dewatering at the Trempealeau, Wis., lock and dam. The project began Dec. 3, 2012.

Photo by Kevin Bokay



District staff begin preparing Lock and Dam 6, near Trempealeau, Wis., for dewatering in December 2012. The team is scheduled to be complete with the repairs around March 11.

Courtesy photo

Gate repair also entails removing the diagonals that criss-cross the gates by heating them with a blow-torch. The larger diagonals weigh close to 1,000 pounds each, while the smaller ones weigh in at about 600 pounds each. The lower gates are 25 feet high and weigh 92 tons, while the upper gates are 23 feet high and weigh 85 tons each. Uhl said the team needed to put in a little extra work on one of the gates,

because it had bent and deformed diagonals. The diagonals are tension bars that normally keep the gate plumb when stationary and prevent the gate from twisting while in motion.

Lock and Dam 6 is also the first site in St. Paul District to deploy a greaseless pintle ball. The pintle is the bottom hinge point for the gates. The greaseless ball will require much less resources and maintenance.



Kim Wenger, left, operations, and Mike Gunderson, operations, talk in the Lock and Dam 6 lockhouse during the lock dewatering Jan. 16.

Courtesy photo



Corps of Engineers construction employees work on the Winnibigoshish Dam, near Deer River, Minn., in 1884. The Corps received \$75,000 in 1880 to begin constructing the dam.

File photo



The Mississippi River Headwaters reservoirs provide several recreation opportunities for outdoor enthusiasts.

File photo



The Mississippi River Headwaters reservoirs have several public docks and fishing piers available for outdoor enthusiasts.

File photo

Headwaters reservoirs: Streams, dreams and navigation

by Patrick Moes Part 1 of 3

The late 1800s were challenging times for people living in the Midwest. Flour millers in the Minneapolis area, as well as boat captains on the Upper Mississippi River, often had difficulties working on the river in the late summer months because the river ran dry.

The need for reliable river transportation was a growing requirement for the Minneapolis / St. Paul, Minn., area, said Brad Perkl, archaeologist. So much so that one of the first tasks assigned to

Brevet Maj. Gen. Goveneur Kemble Warren, the district's first commander, was conducting field surveys of the Mississippi River Headwaters region in the 1860s. According to Corps reports, engineers quickly realized the importance of the Headwaters region to improving river navigation in the Twin Cities. Following the surveys, the Corps created several plans to reduce the navigation issues found along the river.

After exploring the Headwaters region and additional river basins in Minnesota and Wisconsin, Warren called for as

many as 41 reservoirs in 1870. The reservoirs were to be scattered across the St. Croix, Chippewa, Wisconsin and Mississippi rivers.

With surveys completed, Congress formally asked the Corps to study the impacts that the reservoir system would have on navigation. The study began in 1879. Maj. Charles J. Allen, the fourth district commander, wrote in a Corps of Engineers Annual Report to the Chief of Engineers, "The lakes at the source of the Mississippi furnish a compact reservoir system, almost as if laid out by an engineer."

While the reservoir plans were welcomed by the millers and navigation captains alike, the Native Americans

didn't share the same optimism. Brad Johnson, regulatory division archaeologist, said the Objibwe Bands were often on the losing side of the dam construction process.

According to Jane Carron in her article "Dams and Damages," the bands opposed the dam construction from the very beginning.

The Pillager Band of Objibwe Chief Flatmouth said, "No one that comes here and stops for a while can know how important this is to us. When our lands were given to us by the Great Father we could do something, but if these dams are made we will all be destroyed."

Despite the Objibwe Bands opposition,

Congress approved \$75,000 in 1880 for the Corps to begin constructing Winnibigoshish Lake Dam via the Rivers and Harbors Act. The Corps of Engineers announced in 1882, “The Winnibigoshish Dam is the inauguration of the reservoir system for the entire country.” The first of six reservoirs to be completed, the wood-framed dam, also known as Winni, was finished and placed into operation in 1884.

Jeff Steere, northern Headwaters section supervisor, said, despite their opposition to the dams, many Native Americans helped build them. “We’ve had a number of different families come back trying to research and see if one

of their family members worked on the dams,” he said.

The Dam construction continued in 1882, when the Corps began building more wood-framed dams in the region. Leech Lake Dam, Pokegama Dam, Pine River Dam and Big Sandy Lake Dam were all completed by 1886. The Big Sandy Lake Dam was modified in 1896 to contain the only navigation lock at any of the Headwaters reservoirs.

Despite completing all the wood-framed dams in the Headwaters region, the Corps began rebuilding them less than 20 years later with the more modern construction material – concrete. The Gull Lake Dam, near

Brainerd, Minn., was the last of the dams constructed, and it was the only one initially built in concrete.

According to the Corps’ annual reports, the region’s navigation needs continued to increase south of St. Paul and the reservoirs were looked at as the cure for navigation during the summer. During this time, the Corps was also making improves downstream of St. Paul as part of the four-and-one-half foot channel requirement.

The reservoir cure was short-lived. Henry Bosse, district draughtsman and photographer in the 1880s, testified before Congress in 1898 that the reservoirs only helped raise water levels

in St. Paul during a prolonged drought by more than a foot. “Our boat was aground and we had no rainfall, and that was due to the reservoirs – they raised the river and we floated off,” he said. While the water release was beneficial to navigation in St. Paul, it wasn’t the same further downstream. Bosse said, “I had the general opinion of pilots and other river men that the effect below Lake Pepin was hardly noticeable.”

Even with the Corps’ best efforts to use reservoirs to shield the navigation industry from low water events, Perkl said the Corps ultimately looked toward locks and dams on the Mississippi River as the best option.



Pokegama Lake, near Grand Rapids, Minn., during the winter.
Photo by Tammy Wick



Trees tower over the Winnibigoshish Lake Recreation Area, near Deer River, Minn.
Photo by Patrick Moes



The Gull Lake Dam, near Brainerd, Minn., is the only one of the six Headwaters dams to be initially constructed in concrete. The dam was placed into operation 101 years ago in 1912.
Photo by Patrick Moes



Maintenance and repair employees place a temporary dam, or cofferdam, on the Lower St. Anthony Falls Lock and Dam in Minneapolis during repairs Sept. 20, 2012.

Photo by Shannon Bauer



A barge from the maintenance and repair section in Fountain City, Wis., is used by district staff to complete concrete repairs to Lower St. Anthony Falls Lock and Dam in Minneapolis Sept. 20, 2012.

Photo by Shannon Bauer

District finds opportunity during drought, completes repair work at Minneapolis lock

by Shannon Bauer

Drought isn't all bad. Low flows on the Upper Mississippi River provided the district an opportunity to make concrete repairs at Lower Saint Anthony Falls Lock and Dam in Minneapolis.

Jacob Fall, engineering and construction, said the district has been waiting years for river flows low enough to safely divert water at Lower Saint Anthony Falls from the dam to the attached hydropower facility.

He said during the 2005 periodic

inspection, Corps divers discovered the concrete sill in all three of the dam gate bays had severe erosion at their monolith joints. "We were concerned, because Lower Saint Anthony Falls is built on a highly erodible foundation," he said. "If that were to be compromised, there's a good chance that piping could occur in the foundation." Piping, he explained, is when water flows underneath the foundation eroding the foundation's material. It could result in failure. He added that this happened

to the Northern States Power, or NSP, power plant at an adjacent site in the 1980s.

In addition to being highly erodible, Fall said the geometry of this location is unique. In order to dewater the three dam gate bays, he said, staff from engineering and maintenance and repair needed to design and build a dewatering box, which they did with materials the district already had on hand. "We were trying to be economical," he said, "and it [the dewatering box] worked really well."

After designing, building and installing the dewatering box, closer inspection of the concrete revealed that although there was severely eroded concrete

at all monolith joints, no water stops within the structure were compromised. Their next steps included prepping the eroded surface for placement, replacing reinforcement and then, finally, placing and curing the concrete. An in-house maintenance and repair crew, specifically Mike Gunderson and Josh Rye, both in operations, completed the work, which took around six weeks.

Because the work location was close to the district headquarters, Fall said, it enabled engineering staff the opportunity to go out and view the work and offer technical advice more often than with other projects. "Working together so closely was a great learning experience for both of us," he said.

Extreme makeover near for district website

by George Stringham

With a new year comes a new look to the district's web presence. This Corps-wide process started with the Corps of Engineers Headquarters' website in December 2011 and continued through Jan. 31. Nearly 40 websites have gone live with the new branding. All website migrations are scheduled to be completed by March 31.

While the home page address will remain the same (www.mvp.usace.army.mil), the migration will result in changed web addresses, or URLs, which means current bookmarks or favorites will no longer work.

The new content management system is hosted by the Department of Defense and provides the Corps with a consistent look and feel; streamlines content management to make it easier to keep pages up-to-date; delivers a richer end-user experience that makes use of audio, video and other web elements and provides disability access by compliance with Section 508 of the Rehabilitation Act.

"Corps-wide, the effort to standardize our web presence will make it much easier to access the information the public needs," said Col. Michael Price, St. Paul District commander. "Since our website is the first access point to the St. Paul District, it is important

that it meets their needs and provides them access to the information they are seeking. If the information is not available, then there is contact information for the public to reach out to us."

The first thing the viewer will notice on the new home page is a pane of rotating stories. In the banner at the top of the page is a navigation menu that is consistent throughout the website. In addition to the standard navigation, the home page also has three spots, all surrounding the rotating stories, where the user will have direct links to commonly accessed pages: "HOT INFO," above; three web buttons to the right; and "Quick Links" below.

Under the new navigation, a large portion of the district's information will be found under the "Missions" dropdown menu at the top of the page. Here, viewers will find commonly viewed pages like regulatory and permits; recreation, parks and lock and dam tours; programs and project management pages; and emergency management and disaster response. Other pages of interest can be found under "About." Here, the user will find information about the district's history, leadership and different offices. Under "Media," users will find what has traditionally been labeled Public Affairs.



This screen capture shows what the new district website will look like. The migration is currently scheduled to be completed the first week on February.

Photo by George Stringham

The St. Paul District public website will migrate the first week in February. This means all of your links, bookmarks will need to be reset.



Eric Johnson, engineering and construction, is the Mississippi Valley Division 2012 Construction Hard Hat of the Year recipient.

Photo by Patrick Moes



A construction worker removes rock from the Mississippi River during construction at Lock and Dam 3, near Red Wing, Minn., Jan. 10, 2012.

Photo by Vanessa Hamer

Engineering and construction employee selected as the division hard hat of the year

by Patrick Moes

The Mississippi Valley Division recently announced Eric Johnson, engineering and construction, as the recipient of its 2012 Construction Hard Hat of the Year Award.

The division presents the annual award to recognize excellence in construction quality management by its construction field personnel. Johnson was selected as the recipient over contenders from the entire division.

A Winona, Minn., resident, Johnson was recognized for his actions as construction representative in the Lock and Dam 3 Project Office in Red Wing, Minn. While working there, he was responsible for contract administration and quality management for both the navigation improvement

project and the lower embankment project. Both contracts, the largest American Recovery and Reinvestment Act-funded projects in the division, were valued at nearly \$47 million.

“Eric’s leadership, construction expertise and superior work ethic combined for the successful execution of these projects to the highest quality standards, on-time and within budget,” said Tom Johnson, St. Paul District Eastern Area Office, or EAO, supervisor. “With over 38,000 Corps of Engineer employees, only nine receive this prestigious award.”

Johnson has worked for the Corps of Engineers for 25 years. He currently works as a construction control inspector at the EAO in Winona, Minn.



Eric Johnson, engineering and construction, monitors construction at Lock and Dam 3, near Red Wing, Minn., Jan. 10, 2012.

Photo by Vanessa Hamer



United States Civil War artifacts are currently on display at the St. Paul District Headquarters in St. Paul, Minn. The artifacts were lent to the district by Spencer Johnson.

Rick MaGee, operations, arranged for the artifacts to be displayed at the district office.

Photo by Patrick Moes

Corps of Engineers Civil War history comes alive with display at district office

by Ken Wilk

As we observe the sesquicentennial, or the 150th anniversary, of the United States Civil War, we should also remember the U.S. Army Corps of Engineers role in the war. The Corps was an integral part of the war and had many changes during the conflict.

Prior to 1863, there were two separate engineering branches within the U.S. Army. The Corps of Engineers had a mostly military mission, and they were also responsible for building military and governmental buildings. The Corps of Topographical Engineers, however,

had the mission of providing civilian engineering tasks, such as national border surveys, harbor and river work, highway and railroad surveys and exploration of the western territories.

The Topographical Engineers, authorized for War Department duty March 3, 1813, conducted engineering surveys for military purposes and explored routes for the passage of troops. They reported directly to the Chief of Engineers.

In 1817, Maj. Stephen H. Long explored the Upper Mississippi River.

He selected sites for Fort Smith on the Arkansas River and Fort St. Anthony, later renamed Fort Snelling, at the confluence of the Minnesota and Mississippi rivers.

The link between the topographical engineers and the Corps was short lived. The Topographical Bureau was separated from the Office of Chief Engineer and designated as an independent War Department staff organization June 22, 1831. Despite this separation, direct supervision of topographical engineers remained with the Chief of Engineers. During this period, topographical engineers were responsible for civil works improvements and military functions.

The two branches were completely separated July 5, 1838. The Corps of Topographical Engineers was placed under the supervision of Chief of the Topographical Bureau.

The Secretary of War ordered all federal government civil engineering projects to be transferred to the Corps of Topographical Engineers Aug. 1, 1838. Military functions that were being performed by the Corps of Topographical Engineers were subsequently transferred to the Corps of Engineers in 1839.

The Topographical Engineers, or Topogs, were very active between 1839 and the start of the Civil War. They saw action in the Seminole Wars and Mexican-American War. They were also doing a lot of exploration, mapping and

survey work. This included a border survey with Canada, explorations of the Great Basin, California, the Colorado River Basin and the Transcontinental Railroad Surveys.

The topogs surveyed five possible routes for the railroad, including the Northern Route, which was conducted by then Lt. Gouverneur K. Warren. The route went through Saint Paul, Minn. The route was eventually built by James J. Hill's Great Northern Railroad. Also during this time, 1849-1850, Lt. John G. Parke was assisting in surveying the Iowa and Minnesota territory line.

Civil War

Both Union and Confederate armies were unable, or at times, unwilling to furnish the necessary troops to the engineers. In spite of these deficiencies, the engineers performed valuable and diverse services and many officers became worthy commanders.

Several of the armies had their own engineer departments working in the field during the war. They did research, field work, printing and distribution for the armies while they were on the march. The most sophisticated of these departments was the Army of the Potomac's Office for Surveys and Military Defenses.

The Corps of Engineers and the Corps of Topographical Engineers were reunited in 1863 as "an act to promote the efficiency of the Corps of Engineers."

Editor's Note

Do you have news you want to share with the district? Send your announcements of births, weddings, graduations, etc., to **Crosscurrents**.
cemvp-pa@usace.army.mil.

Newcomers

Jason Brownrigg, administrative assistant, operations, Fountain City, Wis.
Sharon Garay-Rodriguez, engineer, engineering and construction, Fargo, N.D.
Dennis Johnson, student, planning, district office.
Molly Wezel-Peterson, secretary, engineering and construction, district office.

Retirements

Ed Eaton, engineer, engineering and construction, district office.
Christopher Knotts, biologist, operations, district office.
Tom Koopmeiners, procurement analyst, small business, district office.
Robert Kupietz, striker, operations, Fountain City, Wis.
Paul Madison, engineer, engineering and construction, district office.
Shannon Matthews, library specialist, library, district office.

Broomball helps with team building away from

St. Paul District employees finished off another year of broomball at the ice rink in downtown St. Paul, Minn., Jan. 30. The district had two teams play during the season and many employees were able to get some exercise on the ice while playing with their fellow coworkers.

Photo by Patrick Moes



Thanks from overseas

"Thank you and our Saint Paul District team for the nice holiday card full of warm messages and signatures which arrived in my office a few minutes ago. Letters and envelopes are now beginning to arrive on base. Delivery of packages from the U.S. to Afghanistan has been a priority this past month and letters were reportedly held back so that all packages could arrive here in time for Christmas.

I work at [U.S. Forces] – Afghanistan Headquarters located in Kabul, on a well fortified and protected Base. I am safe and well and looking forward to returning home to Donna, White Bear lake, and our district team early this summer."

Ken Beck, real estate.

"I received a heck of a large Christmas card from y'all there at the district office. THANK YOU !!!! Perked me up. It was totally unexpected, but welcome. Again, thanks To all."

John A. (Wojo) Wojciechowski, engineering and construction.

Congratulations

Bryana Sauer, resource management, and her husband welcomed their daughter, **Ariana Grace Sauer**, to their family Dec. 14, 2012. She was 5 lbs., 9 ozs.

Equal Employment Office to create Black History Month display

The district's equal employment is creating a display at the district office in St. Paul, Minn., to recognize Black History Month. Feel free to stop by and learn about the many important contributions African Americans have provided to our nation.

Civil Servant of the Year Award nominations due

The Federal Executive Board of Minnesota 36th Annual Federal Civil Servant of the Year Awards Program and Luncheon will be held at the Crown Plaza Hotel in St. Paul, Minn., at 11:30 a.m., May 3.

This program offers public recognition of federal employees who have demonstrated outstanding performance. All nominations must be submitted to Jamie Engelbretson, (651) 290-5481 or jamie.e.engelbretson@usace.army.mil., no later than Feb. 28.