

KANSAS CITY DISTRICT'S NEWS MAGAZINE

HEARTLAND ENGINEER



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JULY - SEPTEMBER 2012

Finishing Strong





Photo by Scott Robben

Where I fit in the OPLAN 2012

My Part of the Plan:

Action 1.a.: Conduct District Contingency Operations, planning, training and readiness and support

The Gladys Davies Award is an administrative excellence award given to the individual that exhibits the highest degree of professionalism, dedication to duty, personal initiative and contribution in support of district programs and missions. All of this supports the Kansas City District mission and ultimately the operations plan.

This year's recipient is Rheanna K. Todd. Todd is a program assistant in the Real Estate Division working closely with our Budget Analysts on both military and civil issues. She has worked with the Kansas City District since July 2007 but started at the Missouri River Area Office making the move to the district office in March 2010.

When asked about receiving the award, Todd replied, "It feels wonderful to be recognized for your hard work no matter what, but the fact that I was honored with such a significant award really means a lot."

She credits her parents for her strong work ethic. "I would like to thank my parents, Mike and Cheryl Daro for ensuring that I understood the value of hard work and helping mold me into the person that I have become. I think that values that our parents try to instill in us give us the foundation that we build our entire lives on."

Her hard work and dedication is why she is an important asset to the district mission and the operations plan. "Being recognized with the Gladys Davies award just validates that all my effort is actually worthwhile," said Todd.

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COMMANDER Col. Anthony J. Hofmann / anthony.j.hofmann@usace.army.mil
 DEPUTY COMMANDER Maj. Rachel Honderd / rachel.honderd@usace.army.mil
 P.A. CHIEF David S. Kolarik / david.s.kolarik@usace.army.mil
 EDITOR Amy Phillips / amy.l.phillips@usace.army.mil
 STAFF Diana McCoy / diana.mccoy@usace.army.mil
 DESIGNER Rusty Thomas / rusty.thomas@usace.army.mil

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Richard Bolling Federal Building
601 East 12th Street
Kansas City, MO 64106
Phone (816) 389-2000
Fax (816) 389-3434

ON THE COVER:

Members of the Mississippi River Commission and leaders from the Kansas City District visited upper and lower Missouri River Basin sites, like this, during a low-water inspection trip in August. Photo by Harry Weddington

Looking Beyond the Basin



Col. Anthony J. Hofmann

Greetings Kansas City District! I've had the privilege to visit many of you at our lake sites, military installations and projects where you work. Likewise, I've gotten to see firsthand the incredible results of levee and Missouri River channel repairs to return the system to pre-flood standards following last year's devastating floods. Our mission continues, and you continue to deliver!

In addition to meeting our commitments, as I write this, we are in the midst of fiscal year-end close-out activities. It is truly an understatement to say that this is a hectic and busy time of year. These last minute actions are a true testament to your dedication to serve our many partners, customers and stakeholders linked to our civil works, military and environmental programs. During my visits I continue to be impressed with your positive, "no excuses" attitude. Similar to sporting events, the difference between winning and losing comes down to how one finishes. I already know that we will finish strong, just as we've done in previous years. It's embedded in our work ethic and organizational culture. I want each of you to know that I acknowledge the great effort and continue to be proud of how we tackle our mission year in and year out.

The last edition of our Heartland Engineer reiterated the fact that this publication is a great vehicle to educate not only our internal workforce but also the public we serve who are interested in our mission and congressionally authorized and appropriated projects. As you all know, the last submission discussed the district's project execution of the eight congressional authorities on the Missouri River—directly tied to our efforts to mitigate, restore and recover an ecosystem (the Missouri River) of national significance. This is but one of many areas our district is extremely passionate about. Not all of our readers are aware of the breadth and depth of our mission—all vital to local, regional and national interests. This includes:

- Building the Power Projection Platform for the World's most Powerful Military
- Protecting the Public and Vital Infrastructure from Floods as well as Responding to other Natural Disasters (such as the assistance in Joplin/Duquesne, Mo.)
- Cleaning up the Nation's most Toxic Waste Sites
- Providing Clean, Renewable & Low Cost Power (hydropower) to the Public
- Providing a Navigable Waterway ("a liquid highway") for Clean and Cheap Transportation of Vital Goods
- Providing the Public with the Finest Recreational Facilities

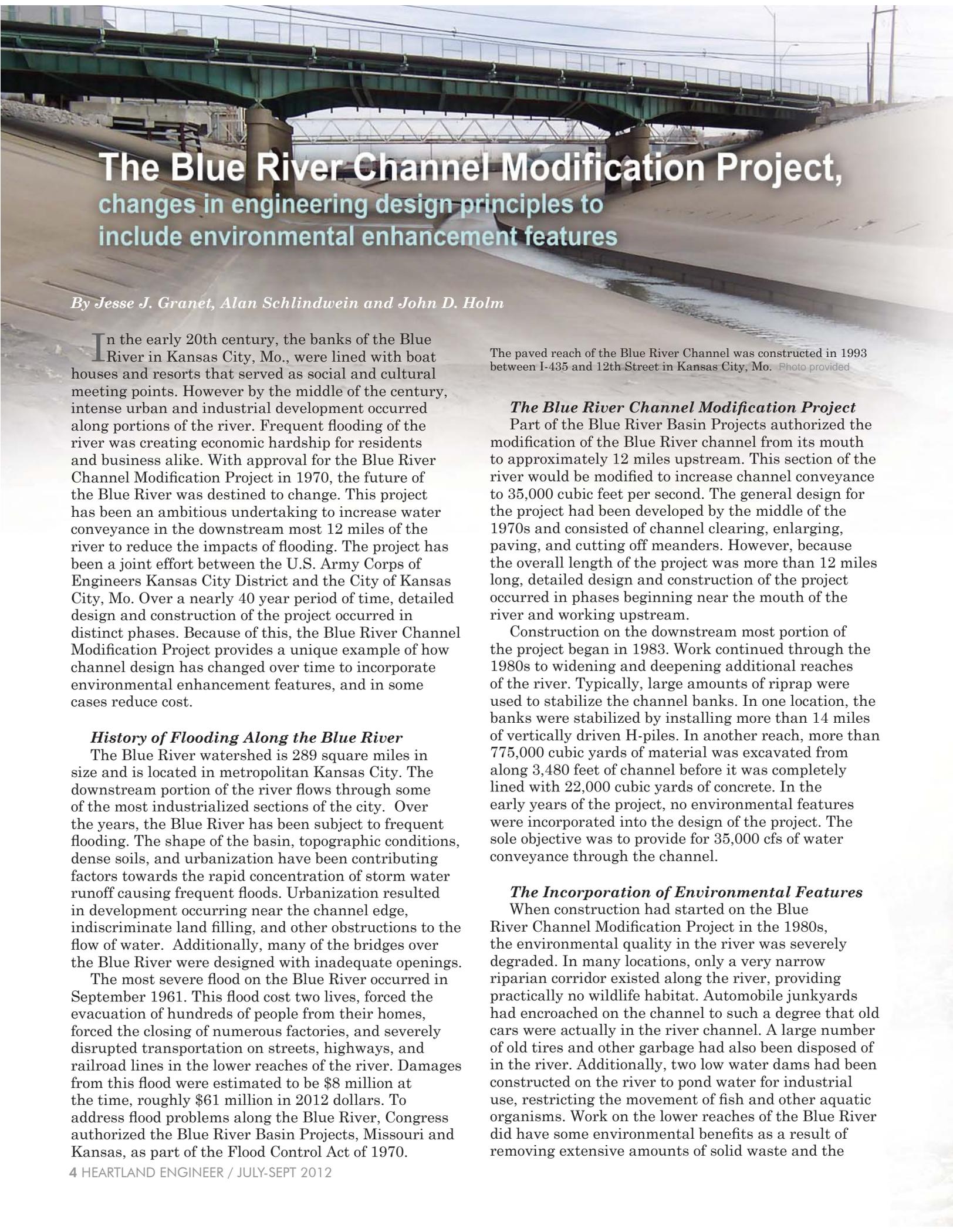
Just like our congressionally authorized and appropriated mission on the Missouri River that I referenced in the last publication, we work equally hard to execute projects in each of the areas listed above. These areas contribute directly to national security. They protect our citizens from natural disasters, saving lives and mitigating destruction. These projects protect the health of our citizens through a clean environment. They provide an alternative energy source as well as another form of transporting commerce; both have huge, positive economic impacts to our citizens. Finally, these projects provide the people we serve with several alternatives to recreate and enjoy the great outdoors.

Delivering projects and emergency management services in these areas are embedded in our culture and define who we are as a district. Many readers may not have realized the breadth and depth of what we do. They certainly do now.

In essence, your work goes far beyond the Missouri River.

Thanks for all you do—continue the mission! I am proud to serve with each of you.

Anthony J. Hofmann



The Blue River Channel Modification Project, changes in engineering design principles to include environmental enhancement features

By Jesse J. Granet, Alan Schlindwein and John D. Holm

In the early 20th century, the banks of the Blue River in Kansas City, Mo., were lined with boat houses and resorts that served as social and cultural meeting points. However by the middle of the century, intense urban and industrial development occurred along portions of the river. Frequent flooding of the river was creating economic hardship for residents and business alike. With approval for the Blue River Channel Modification Project in 1970, the future of the Blue River was destined to change. This project has been an ambitious undertaking to increase water conveyance in the downstream most 12 miles of the river to reduce the impacts of flooding. The project has been a joint effort between the U.S. Army Corps of Engineers Kansas City District and the City of Kansas City, Mo. Over a nearly 40 year period of time, detailed design and construction of the project occurred in distinct phases. Because of this, the Blue River Channel Modification Project provides a unique example of how channel design has changed over time to incorporate environmental enhancement features, and in some cases reduce cost.

History of Flooding Along the Blue River

The Blue River watershed is 289 square miles in size and is located in metropolitan Kansas City. The downstream portion of the river flows through some of the most industrialized sections of the city. Over the years, the Blue River has been subject to frequent flooding. The shape of the basin, topographic conditions, dense soils, and urbanization have been contributing factors towards the rapid concentration of storm water runoff causing frequent floods. Urbanization resulted in development occurring near the channel edge, indiscriminate land filling, and other obstructions to the flow of water. Additionally, many of the bridges over the Blue River were designed with inadequate openings.

The most severe flood on the Blue River occurred in September 1961. This flood cost two lives, forced the evacuation of hundreds of people from their homes, forced the closing of numerous factories, and severely disrupted transportation on streets, highways, and railroad lines in the lower reaches of the river. Damages from this flood were estimated to be \$8 million at the time, roughly \$61 million in 2012 dollars. To address flood problems along the Blue River, Congress authorized the Blue River Basin Projects, Missouri and Kansas, as part of the Flood Control Act of 1970.

The paved reach of the Blue River Channel was constructed in 1993 between I-435 and 12th Street in Kansas City, Mo. Photo provided

The Blue River Channel Modification Project

Part of the Blue River Basin Projects authorized the modification of the Blue River channel from its mouth to approximately 12 miles upstream. This section of the river would be modified to increase channel conveyance to 35,000 cubic feet per second. The general design for the project had been developed by the middle of the 1970s and consisted of channel clearing, enlarging, paving, and cutting off meanders. However, because the overall length of the project was more than 12 miles long, detailed design and construction of the project occurred in phases beginning near the mouth of the river and working upstream.

Construction on the downstream most portion of the project began in 1983. Work continued through the 1980s to widening and deepening additional reaches of the river. Typically, large amounts of riprap were used to stabilize the channel banks. In one location, the banks were stabilized by installing more than 14 miles of vertically driven H-piles. In another reach, more than 775,000 cubic yards of material was excavated from along 3,480 feet of channel before it was completely lined with 22,000 cubic yards of concrete. In the early years of the project, no environmental features were incorporated into the design of the project. The sole objective was to provide for 35,000 cfs of water conveyance through the channel.

The Incorporation of Environmental Features

When construction had started on the Blue River Channel Modification Project in the 1980s, the environmental quality in the river was severely degraded. In many locations, only a very narrow riparian corridor existed along the river, providing practically no wildlife habitat. Automobile junkyards had encroached on the channel to such a degree that old cars were actually in the river channel. A large number of old tires and other garbage had also been disposed of in the river. Additionally, two low water dams had been constructed on the river to pond water for industrial use, restricting the movement of fish and other aquatic organisms. Work on the lower reaches of the Blue River did have some environmental benefits as a result of removing extensive amounts of solid waste and the

low water dams from the river. However, at that time little attention was given to specifically incorporate environmental features into the project.

By the late 1990s, approximately eight miles of the Blue River Channel Modification Project had been completed. Around this time, there was a paradigm shift in the design of the project and more current, environmentally friendly engineering design features were incorporated into the remaining phases. At first, this consisted of small features such as constructing wing dikes in some sections of the channel to diversify water velocities and depths to benefit fish and other aquatic organisms. Then in 2010, along a 3,700 linear feet long section of river, structures consisting of root wads, lunker logs, riffle structures, and boulder clusters were installed. These features created habitat for fish and aquatic organisms by providing cover, creating variability in water velocities and depths, creating rock interstitial spaces, and increasing the amount of organic debris, such as tree leaves, that accumulated in the channel. Instead of solely relying on riprap and non-native grasses to provide bank stability, native willow trees, grasses, and wildflowers were planted along the channel banks. These features were incorporated with no added cost, while still providing a channel that would convey a flow of 35,000 cfs within its banks.

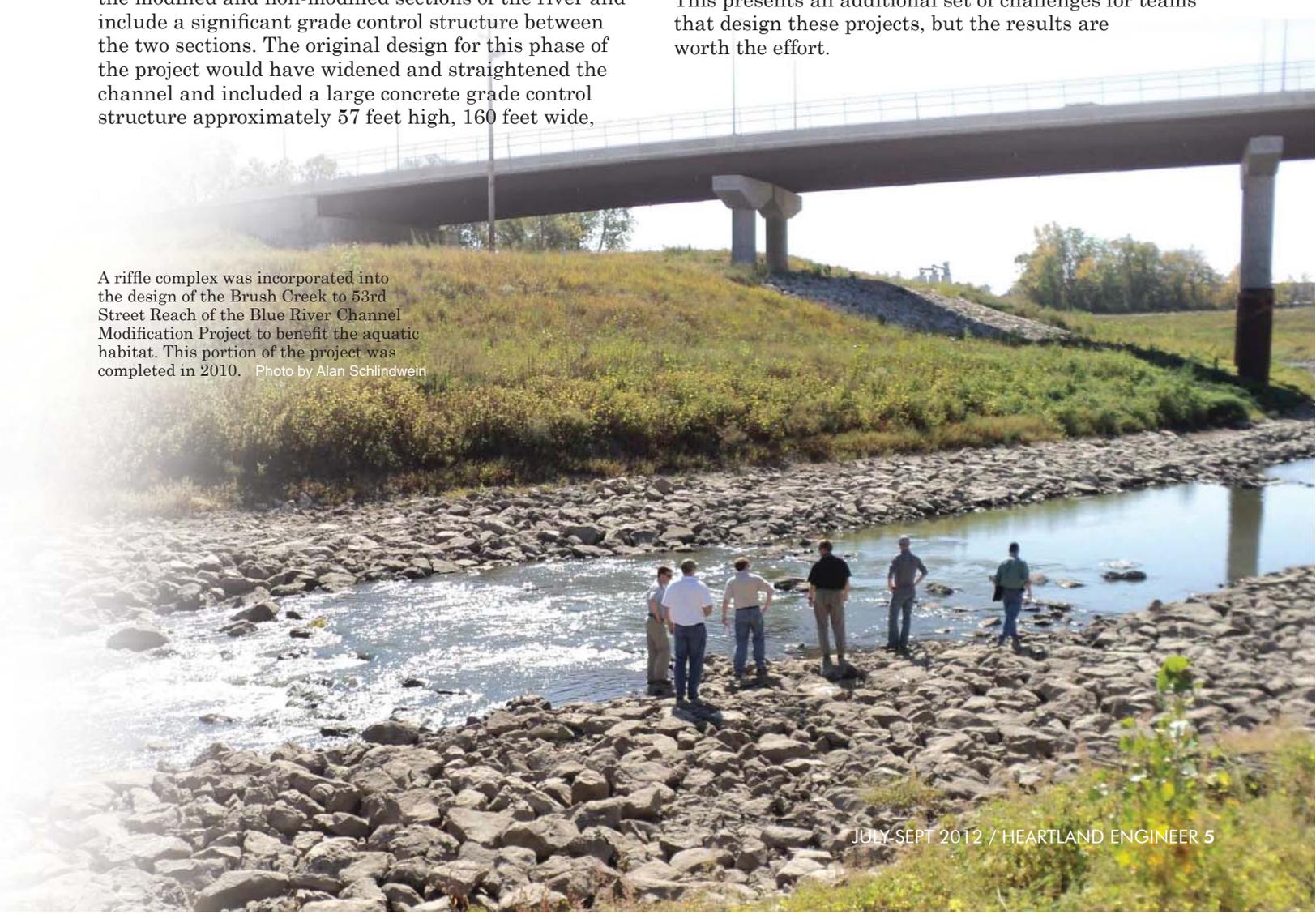
The final phase of the Blue River Channel Modification project was to provide a transition between the modified and non-modified sections of the river and include a significant grade control structure between the two sections. The original design for this phase of the project would have widened and straightened the channel and included a large concrete grade control structure approximately 57 feet high, 160 feet wide,

and 257 feet long. The cost for this portion of the project was estimated at \$40 million. This reach of the river also was one of the only places within the entire 12 mile long project area that had a functioning riparian corridor, providing some habitat for urban wildlife. In an effort to reduce cost and protect the environment, it was determined that grade control through this reach of river could be accomplished by using a series of 6 riprap grade control structures and 10 riprap toe revetments instead of a single large concrete grade control structure. Additionally, the new design would not result in any additional channelization of the river, benefiting the environment. Also, the riparian corridor would only be minimally impacted by the new design. This design would also cost approximately \$10 million; about a 75 percent reduction in cost compared to the original design.

Environmental Stewardship

The Blue River Channel Modification Project illustrates how changes in society's values toward improving the environment have changed over the past 40 years. At the time the project began in the 1970s, the only objective of the project was to provide flood risk management. Now, as major construction on the project has been completed, it is clear that both flood risk management and stewardship of the environment can both be incorporated into channel modification projects. This presents an additional set of challenges for teams that design these projects, but the results are worth the effort.

A riffle complex was incorporated into the design of the Brush Creek to 53rd Street Reach of the Blue River Channel Modification Project to benefit the aquatic habitat. This portion of the project was completed in 2010. Photo by Alan Schlindwein



Project office completes first sustainability project corps-wide



By Diana McCoy

A lake project in eastern Kansas was the first to complete a fiscal 2012 sustainability project throughout the Kansas City District and the entire U.S. Army Corps of Engineers—a project which is on track to save the Corps several hundred dollars annually.

Jim Franz, natural resource manager at Melvern Lake in Melvern, Kan., initiated the project to eliminate an electric meter and subsequent power usage that supplies lighting to the lake's large entrance sign below the project office.

"This was a very simple project," said Franz. "The entrance sign was lit with two lights that were serviced by normal power. All we did was kill the power from the power company and put up a solar panel with two LED lights. The sign runs only off of solar electricity now."

The project took maintenance crews about one day to complete and cost just under \$900.

"This is not a grandiose new idea," said Franz. "But it's one that is easily done for us. Solar lighting is not a new concept, but one that we could do quickly and affordably with the price of solar units coming down."

Sustainability has been a part of the culture of the U.S. Army Corps of Engineers since March 2002, but at the present time the Corps is not meeting its progress goals, having started late on all aspects of the Federal Energy Management Program Execution. Because fiscal year 2012 is the first year the Corps has had funding in the budget for investments in facility energy/water efficiency, and with the late distribution of those funds, execution of the FY12 sustainability/energy requirements is just getting under way.

The Corps of Engineers' sustainability program focuses on two lines of operations: looking at internal operations to improve efficiencies in facilities it owns and operates; and improving the agency's ability to support its customers with services and projects within the context of their sustainability goals and targets.

"We'll gain probably \$500 to \$600 per year in electrical savings," said Franz. Eliminating the power meter will save the project more than \$400 and an estimated 1,100 kilowatt-hours per year. The LED lights use 70 percent less electricity than incandescent or fluorescent bulbs.

"Headquarters set aside \$10 million to help project offices throughout the Corps meet their sustainability goals," said Charles Hall, the environmental/sustainability compliance coordinator for the Kansas City District. "The main goal is to have a 23 percent energy reduction from the FY08 baseline that we have to achieve by 2020."

Hall said they are also trying to reduce building energy usage by three percent annually and increase investment in renewable energy. Renewable energy could include the use of heat pumps, wind power and solar power. The solar lighting project at Melvern Lake Project Office contributes to both goals.

"We're trying to utilize less energy so we're being good stewards of tax-payer dollars," said Hall. "We want to make sure we provide sustainable solutions that address short and long-term environmental considerations."

Hall said that Melvern Lake had an easy project that was completed quickly. Lake projects across the Kansas City District are working on more sustainability projects with bigger impacts, but Melvern Lake was the first to step up and complete one for fiscal 2012 that meets the sustainability matrix incorporated by Headquarters.

Franz said Melvern Lake has another project in the works that involves replacing the lights in their main shop building and updating the fluorescent lighting in that building, which will contribute to the reduction of building energy usage.

Jim Franz, natural resource manager for Melvern Lake in Melvern, Kan., shows off a solar panel that was installed to provide energy to two LED lights that light the large entrance sign to the lake. This project was the first sustainability project to be completed for the Corps of Engineers in fiscal 2012. Photo by Diana McCoy



Arthur Saulsberry

(center) was recognized by Kansas City, Mo., Mayor Sly James, Jr. and Col. Anthony J. Hofmann during the Society of American Military Engineers luncheon held Sept. 10.

Photo by Merrill Watt



Saulsberry selected as Army's Small Business Specialist of the Year

By David S. Kolarik

Arthur Saulsberry of the Kansas City District was recently selected and presented with a national award given by the U.S. Army for his efforts in the arena of Small Business.

Saulsberry was selected from more than 200 Army Small Business Specialists around the country and presented with the Fiscal Year 2011 Small Business Specialist of the Year Award in Washington, D.C., in early August.

The award was presented by Tracey L. Pinson of the Secretary of the Army's Office of Small Business Programs.

Upon receipt of his award Saulsberry addressed the audience and said, "As a civil servant of the federal government, I am extremely honored to receive this award from the Army."

Saulsberry added that federal contract awards to various small businesses are the engine that drives the U.S. economy and that Small Businesses are the number one employer of our military veterans. The Veterans prior federal experience helps small businesses navigate through and understand the complicated procurement process.

Saulsberry manages the Office of Small Business Programs for the Kansas City District. On behalf of the district commander, Saulsberry maintains liaison with other key staff and operating elements within the district, the U.S. Army Corps of Engineers

Northwestern Division, and other federal agencies. He serves as the district's small business advocate in regards to regulatory requirements and the development of contracting opportunities for all types of small and disadvantaged businesses.

Saulsberry has served as the Kansas City District's Deputy of Small Business for 16 years. Throughout his tenure he has consistently demonstrated selfless service, professionalism, integrity and exceptional contracting knowledge by executing the district's Small Business Program. He was instrumental in fiscal year 2011 in leading the district in awarding more than \$325 million to small business firms, which equaled 58 percent of the district's total program awards of \$564 million. The Kansas City District ranked #8 out of all USACE districts in awards to Service Disabled Veteran-Owned Small Businesses.

A Federal Procurement Data System report shows that of the \$325 million executed in FY11, \$117 million was awarded to small businesses in the state of Missouri and \$30.5 million for the state of Kansas totaling \$147.5 million for small businesses in these two states.

Saulsberry is a USACE Small Business Advisor on the National Society of American Military Engineers Small Business Planning Committee and the Greater Kansas City Federal Executive Board Small Business Committee.

District hosts

USACE Deputy Commanding General, Civil Works

By David S. Kolarik



District leadership tour the Turkey Creek project with Maj. Gen. Michael J. Walsh on June 16 and was briefed on Kansas City metro area watershed issues. Walsh is the U.S. Army Corps of Engineers' deputy commanding general for Civil Works. Pictured left to right: Maj. Rachel A. Honderd, John J. Grothaus, Doug A. Clarke, Col. Anthony J. Hofmann, Steven K. Iverson, Melissa R. Corkill, Maj. Gen. Michael J. Walsh.
Photo by Jennie Wilson

The U.S. Army Corps of Engineers Deputy Commanding General for Civil Works and Emergency Operations, Maj. Gen. Michael J. Walsh met June 13 with multiple local levee sponsors, business owners and stakeholders to discuss civil works and infrastructure issues in the Kansas City metro area.

Walsh discussed Kansas City metro watershed issues with representatives of the Kansas City Water Services Department, The Missouri and Associated Rivers Coalition, The Mid-America Regional Council, The State of Kansas Fairfax Drainage District and several local business owners.

Walsh stated that "The might of the nation is based off its infrastructure." He continued and addressed the national budget constraints by stating "The world has been in an economic malaise and we're in austere times."

Walsh emphasized that the Corps will continue its collaboration and successful partnerships with the Kansas City metro area regardless of budget constraints.

"Rivers bring people together," Walsh added.

Tom Roberts, president and CEO of Kansas City, Mo., based CFM Distributors, said that budgets for these projects aren't what they used to be and that they need to coordinate unified government money in to the water resource planning process.

"We all need to be in synch," said Roberts.

Lynda Hoffman, manager of the Water Services Department, Waterways Division in Kansas City, Mo. said, "Every water resource in this area has an active stakeholder group and that the Corps partners with us and our stakeholders very effectively." She added, "Don't tell us what we can't do, tell us what we can," using the Brush Creek project as an example.

Don Curtis, president of Missouri and Associated Rivers Coalition stated that the civil works partnership with the Corps has been very successful over the years, and unlike the upper basin, the lower basin states look to the Corps as the go-to organization for water resources planning and added that the partnership is maintained at the local level. He said that we can all adapt to satisfy our interests in the basin.

Many water resource issues reach across the boundaries of individual communities. Often, these are addressed by working together. The Mid-America Regional Council's Community Development Director, Marlene Nagel, added that coordination for projects affecting numerous communities has been very positive and that they appreciate the working relationship MARC has with the Corps.

Schutte Lumber Company President Michael Fuhrman said that these relationships are important to the area and the community as a whole. Those with interests from two states, numerous cities, stakeholders and business owners—everyone had a voice with Maj. Gen. Walsh today.

"He sincerely thanked us for our time. It was a huge effort for him to hear our concerns and make our case on continued collaboration in the planning process. It just goes to show you how it works," said Fuhrman.

BSNP

team awards major contracts for repairs

By Diana McCoy

The Kansas City District U.S. Army Corps of Engineers awarded four contracts worth several million dollars Aug. 14 to establish a pool of contractors that are available to bid on repairs for the Missouri River Bank Stabilization and Navigation Project.

Damages to the Missouri River BSNP dikes and revetments from the 2011 flood required the award of separate repair contracts funded by Disaster Relief Appropriations Act dollars. The award of the first three task orders was given to W.A. Ellis Construction Company of Independence, Mo., for a total of \$19,557,000.

Besides W.A. Ellis, the contractors available for the pool are Commercial Contractors Equipment from Lincoln, Neb., ESI Contracting Corp. from Kansas City, Mo., and Newt Marine Service from Dubuque, Iowa.

Task Order 001 covers repairs from Atchison, Kan., to Rulo, Neb. Task Order 002 covers repairs from Waverly, Mo., to Atchison, Kan. Task Order 003 covers repairs from the confluence with the Mississippi River to Waverly, Mo. When additional task orders are necessary, the four contractors will be the only contractors allowed to bid on the work. The total amounts of expenditures on the repairs are not to exceed \$45 million over the next five years.

The 2011 flood had a tremendous impact on the BSNP river structures because of the magnitude and duration of the flood waters. Preliminary assessments of BSNP structures indicate the 2011 flood damage to be two to four times the average annual damage, with heavier damages concentrated in the upstream reaches.

Based on initial assessments, there are approximately 400 damaged structures which will require approximately 680,000 tons of stone. Assessments are ongoing, and the number of structures and quantity of stone to repair them will likely increase.

More than \$31 million of DRAA funds were received for BSNP flood recovery. The purpose of the funds is for flood recovery efforts to federally declared disaster areas. The majority of the repairs will be conducted by contract and will likely take three to four years to complete. The exact time to repair all flood damage will be dependent on several factors including contractor availability to access structures, river stages, and potential drought, flood and winter ice conditions.

In June of this year, the Kansas City District awarded a \$2 million contract to W.A. Ellis to perform repair work on the BSNP structures. Those repairs were completed in early August.

In late August, the nationwide drought took its toll on the lower portion of the Missouri River, which dipped low enough to halt barge traffic at River Mile 41 in St. Charles County near Chesterfield, Mo.

The Corps was notified Aug. 26 that several barges were unable to navigate the channel as a sand bar had developed causing the channel depth to be reduced in certain areas to as little as 4.5 feet. Upon learning about the situation, the Missouri River Area Office deployed an in-house labor crew to assist with opening the channel and pursued an emergency contract for dredging work. They also conducted a hydro-survey to assess the conditions and assist all tow boats through as necessary.

“The Kansas City District is committed to working with the navigation industry and our stakeholders to ensure this important liquid highway continues to support navigation so as not to halt the flow of valuable commodities throughout the basin,” said Col. Anthony J. Hofmann, district commander.

The Jumbo and the Stephenson II are used to support operation and maintenance of the Missouri River Bank Stabilization and Navigation Project
Photo by Diana McCoy



Mississippi River Commission visits Missouri River Basin

By David S. Kolarik

In August, The Mississippi River Commission conducted a low-water inspection trip on the Missouri River. The MRC Commissioners visited the upper and lower Missouri River Basin sites, starting in Bismarck, N.D., and concluding in Alton, Ill.

The MRC was established in 1879 and is composed of seven members, each nominated by the President of the United States and confirmed by the Senate. Three of the organization's members are officers of the Corps of Engineers; one member is from the National Oceanic and Atmospheric Administration; and three members are civilians, two of whom are civil engineers.

The MRC last toured and inspected the "Mighty Mo" in 2007 and wasn't scheduled to inspect the river again until 2013.

Col. Joel R. Cross, Omaha District commander, hosted the commission while in the upper Missouri River Basin, and Col. Anthony J. Hofmann, Kansas City District commander, hosted the commission while in the lower Missouri River Basin.

The commission visited locations and hosted public meetings in the Northwestern Division's area of operations. The commission visited Bismarck, N.D., Pierre, S.D., Omaha, Neb., and St. Joseph and Washington, Mo. During their time in the Missouri River Basin, commissioners got a first-hand look at various Corps projects, met with local and regional stakeholders and engaged with senior state officials and congressional delegation staff.

The commission addressed a packed public engagement in St. Joseph, Mo. "We thought it was a good idea to inspect the Missouri River after last year's historic flood," said the Honorable R.D. James, MRC Commission member and civil engineer from New Madrid, Mo.



Col. Anthony J. Hofmann (left) and James D. Rudy of the Missouri River Area Office speak to Col. Anthony C. Funkhouser (right) on Aug. 16 during a tour of the Missouri River Lower Basin. The trip was part of the Mississippi River Commission's visit to hear about the issues with the Missouri River.
Photo by Harry Weddington



Members from the Mississippi River Commission and leaders from the Kansas City District receive a briefing before a public engagement in St. Joseph, Mo., on Aug. 15.
Photo by Harry Weddington

The purpose of the public engagements was to maintain a dialogue, an exchange of viewpoints and ideas, between the public and the Corps. The public hearing process is unique to the Mississippi River Commission and the U.S. Army Corps of Engineers. The benefits of hearing firsthand the issues and concerns through the public hearing process are invaluable to the commission and the Corps. Also, the interaction with congressional, federal and state interests, local boards and non-government organizations and the public is crucial to the decision-making process of the commission.

During a public engagement in Washington, Mo., Col. Anthony Funkhouser, commission member and Northwestern Division commander, addressed a full house stating, "The commission is here today to learn from you, the public, and share your lessons learned as they relate to the river." He continued, "We try to balance all eight of the congressionally authorized purposes and I'll tell you, it's not easy."

The diverse blend of membership on the MRC captures and combines the expertise from two pools of the world's most renowned and innovative engineering talent—the U.S. federal government and the U.S. private sector. This talent is complimented by the capabilities of the National Oceanic and Atmospheric Administration, which provides accurate weather and climate forecasts and objective ecosystem information.

The MRC president also serves as the commanding officer of the U.S. Army Corps of Engineers, Mississippi Valley Division. The other two Corps of Engineers members serve as the commanding officers in the Northwestern Division and the Great Lakes and Ohio River Division, bringing representation from the Corps of Engineers from the nation's three largest watersheds—the Mississippi, Missouri, and Ohio rivers.

Commission duties include the recommendation of policy and work programs, the study of and reporting upon the necessity for modifications or additions to the flood control and navigation project, recommendation upon any matters authorized by law, and making semi-annual inspection trips. The commission is responsible for the entire length of the Mississippi River from its headwaters at Lake Itasca, Minn., to Head of Passes, La., where the Mississippi River empties into the Gulf of Mexico.

Since 1879, the Mississippi River Commission has developed and matured plans for the general improvement of the Mississippi River from the Head of Passes to the Headwaters. The Mississippi River Commission brings critical engineering representation to the drainage basin, which impacts 41 percent of the United States and includes 1.25 million square miles, over 250 tributaries, 31 states, and two Canadian provinces.



Exploring connections to the past

In its original condition, the survey marker was found in poor condition. It was in three pieces, but the team felt fortunate all the pieces were still there to find. They found it remarkable the embossed lettering and triangle seemed to exhibit very little wear and tear after more than 120 years of exposure to the elements. Photo provided

By Chuck Sellmeyer

Kansas City District employees Mike Daro, Bill Nichols and Chuck Sellmeyer visited Weston Bend State Park in Platte County, Mo., on Dec. 8, 2011. The purpose of the day's trip was to rediscover a missing artifact from the U.S. Army Corps of Engineers' early surveying and mapping efforts along the Missouri River. The item being searched for was the Weston Datum origin point, also known as the "zero, zero" marker.

Sometime during the 1870s, Major of Engineers Charles Suter of the Mississippi River Commission was tasked with mapping the Missouri River from its mouth to Pierre, Dakota Territory. Survey markers were placed in the flood plain, and the mapping was completed by 1879. As time went by local groups in the basin starting lobbying Congress for improvements along the river so that river-borne transportation could compete with the existing railroads.

On July 5, 1884, the Missouri River Commission was created by Congress, and Col. Charles Suter was named its president. Sometime thereafter a decision was made to remap the ever-changing river. When they attempted to do so they discovered that many of the original survey markers that had been laid down were washed out. That led to a decision to create a new reference system with the survey markers placed on top of the bluff.

In the late 1880s, the Missouri River Commission began anew to remap the river. The extent of this attempt would stretch from the mouth to Three Forks, Mont. In proud Corps tradition, the best equipment and science of the time were utilized. An observatory at Glasgow, Mo., was used as the starting point, and

a precise measurement of latitude and longitude was established from that instrument. From there base lines were created and monuments at known locations were laid down.

When the commission had finished, over 180 markers had been placed and tied together. The work was not easy. As documented in several "Reports of the Chief of Engineers to Congress" the survey teams measured distances by dragging chains of known lengths through the countryside. This act was accomplished several times for each measurement, and environmental variables such as temperature and humidity were calculated. Measurements were averaged as were all discrepancies between baselines until the refined network was finished. Once finished the commission decided to make the Weston marker the "zero, zero" location for the datum, and it then became known as the Weston Datum.

From the initial survey efforts, teams of cartographers used the plane table mapping method to create the 1894 mapping series that stretched the breadth of the river.



The title plate from the original 1894 atlas produced by the Missouri River Commission. Image provided

Fast Forward a Century

The marker was originally found in the early 90s while Daro was conducting routine survey work with a crew from the Missouri River Area Office.

On March 31, 2012, Daro, Skelton and Sellmeyer returned to Weston Bend. The team met with Matt Carletti of the Missouri Department of Natural Resources who is the head ranger at the park and has played an active role in helping the Corps reestablish the monument.

Carletti organized an Eagle Scout project so that an existing trail in the park could be expanded to the Weston Datum. This trail now ends at the monument, and MDNR plans on creating a kiosk so that hikers can learn about the Missouri River Commission and the early days of the Corps on the river. Corps of Engineer personnel will aid in this effort.

Future plans include an attempt to get the marker registered as a National Historic Landmark. The marker will also get a visit from a hyper accurate GPS unit, and the coordinates will be placed in the National Record of Primary Control Points.

Extending the Kansas City District mapping legacy: old Missouri River maps re-discovered, new Geospatial Branch created

By Jason Sheeley

On March 9 the Kansas City District received copies of re-published Missouri River map atlases from 1879 and 1894. They were drawn from detailed Corps surveys and depict the location of the river channel and land use and topography within the Missouri River floodplain. The atlases are on display in the district office.

The atlas production effort was led by district employees in the newly-created Geospatial Branch, created from the Survey and Geospatial Data Section, due to the group's leadership of a national program to develop breach inundation maps for dams and levees. The Geospatial Branch became official on Feb. 12, 2012. The primary goal of the reorganization is to ensure the branch maintains a balanced focus on both district and national projects. A luncheon and ceremony was held on Feb. 17.

We were excited about the opportunity to make these re-published atlases available to the district and presented proof sheets at the branch standup party. We even had a copy of one of the map sheets embossed on the top of the cake.

There are 40 sheets in the 1879 atlas, covering 1,743 river miles from the Mississippi River confluence at St. Louis, Mo., to Ft. Pierre upstream of Yankton, S.D. There are 84 sheets in the 1894 atlas, covering 2,662 river miles, also starting at the confluence and running all the way to the headwaters of the Missouri River at Three Forks, Mont.

The surveys and resulting atlases were produced by the Missouri River Commission, charged to conduct initial studies and to develop plans for management of the Missouri River. These studies were the seeds that later grew into the Kansas City District. The 1879 map atlas predates the Kansas City District by 28 years.

Each page in these atlases is a work of art. The amount of time, skill and effort that went into developing them was phenomenal. The recently discovered first editions were most likely working copies for one of the district branches or sections. The 1894 book, for example, includes a hand-drawn overlay showing channel migration and Bank Stabilization and Navigation Program dike and revetment structures for all map sheets from St. Louis to Kansas City. This markup does not detract from the quality of the map atlas. Rather, it provides character and context, demonstrating that these map atlases were used for many purposes during the early years of the district.

Through these legacy re-discovery efforts we also realized that the district had updated these map products at least once each decade from the 1920s to the 1960s. The Geospatial Branch has located and scanned the mylar copies of these maps.

I don't know if we will be able to do anything further with them, but these maps provide a wealth of detailed information about how the river moved throughout the floodplain, as well as how the BSNP activities progressed through time.

Other known reproductions of these atlases are lower quality and were not published to original scale and appearance.

The primary goal of the atlases we just received is to preserve the appearance of the originals, and to provide them in a format that can be used. These maps are too historic to be stored only behind glass or, worse yet, at an inaccessible archive.

Now that the re-published copies have been delivered work is in progress to transfer the original copies to a site for historic preservation.

Hill versus the Mighty Mo

By Diana McCoy

Facing grueling triple-digit temperatures, sun, exhaustion, and the low water conditions of the Missouri River, one Kansas City District woman endured to complete the world's longest non-stop river race and one of National Geographic's Top 100 American Adventures.

The Missouri River 340 is an endurance race across the state of Missouri in which competitors are given 88 hours to travel 340 miles from Kansas City to St. Charles by means of race craft propelled exclusively by paddle power.

"My interest in participating in this race began last year when I was out on the river inspecting structures after the flood water had receded," said Heather Hill, a hydraulic engineer for the district. "I saw the race leaders passing through Jefferson City, and I thought it would be a cool thing to do one day."

Participating in the race held meaning for Hill since she works on the river. Competing in this race would help her understand the river on a whole different level. She began talking about it in January in an effort to find a partner that could participate with her in the Women's or Mixed Tandem Division, but she couldn't get anyone to commit. That's when she decided to compete in the Women's Solo Division.

Borrowing a handmade kayak from coworker Ben Johnson, Hill began her training in May.

"I paddled as much as I could on the river," said Hill. "I paddled on some lakes, but mostly I tried to get on the river as much as possible. There's only so much you can prepare for, though. A lot of it was mental—just pushing through exhaustion on all sorts of levels."

Hill did a few longer "paddles" to prepare for the race. On one occasion, she met up with other participants for an 80-mile stretch that lasted from 9 p.m. to 9 a.m. She said it was a tremendous confidence boost for her to believe she even had a chance at completing the race. It helped her understand how much nourishment and water she would need and what kind of equipment and supplies would be helpful during the race.

"Until that point, I didn't really understand what I was getting into," said Hill.



Ground crew Tracy Brown and Colleen Roberts meet up with Heather Hill during the race. With triple-digit temperatures, the crew ensured Hill was stocked up with water and energy drinks and a tube sock filled with ice to keep around her neck. Photo by John Skelton

Coworkers Tracy Brown and Colleen Roberts agreed to be her ground crew before Heather had officially cemented her plan by registering for the race. Hill was surprised when they agreed because of the time commitment involved with the duty, and being a racer's ground crew is no easy task.

"They are essentially doing the same race, but they get to drive," said Hill. "There's a lot involved. Navigating the small country roads to the boat ramps and checkpoints along the river is not apparent. Maintaining a sufficient supply of ice also was a challenge since gas stations were not always close by. They set up camp for me each night and replenished my supplies. I think they got a little more sleep than I did, but not much."

Brown said she thought it sounded like a fun way to experience the river and to follow Hill's progress in the race.

"Heather had a detailed itinerary and plan for when she wanted to arrive at each boat ramp. Part of our preparation was figuring out where we were going to set up the tent based on her goal for each day," said Brown. "We made sure Heather had plenty of water, energy drinks and healthy food to sustain her between check points. Our responsibility as ground crew was to ensure she was getting plenty to eat and drink to keep her energy level high."

Brown said they made very careful choices about camping locations, taking into consideration which towns had train tracks and which boat ramps had room to set up a tent. By the third night, they were too tired to set up a tent and instead slept on their sleeping bags in a park in Washington, Mo.

Hill said she stopped every night for about three to four hours for sleep and no more than 20 minutes at each checkpoint—just long enough to use the restroom and stock up on food and water provided by her ground crew. She compared the river to a conveyor belt. With the river's constant flow, as long as you're in the boat, you're on your way to St. Charles. Racers try to minimize their time off the water as much as possible. Hill's ground crew was essential in making that happen for her.

Hill said she enjoyed the camaraderie between all the competitors.

"It's not cut-throat. You have this bond with all the other competitors out there because you're all experiencing the same heat and exhaustion," said Hill. "One night I couldn't stay awake and this guy in a kayak paddled by and struck up a conversation. We paddled the rest of the night together talking to each other. If I had not paddled with him I wouldn't have gotten through the rest of that night."

Hill said it was neat to see the projects she works on everyday from the viewpoint of the river. She was able to share her knowledge with other competitors about how to navigate around wing dikes and where to find the fastest current.

People along the river followed the race closely. Hill said when she passed under the I-70 Bridge by Overton North all the semi truck drivers could be heard honking their horns, cheering them on and making everyone feel special. One experience near Jameson Island was particularly memorable for her.

"I remember on the left bank of Jameson, there was a house up on the bluff," said Hill. "I was exhausted and lonely, and there wasn't anyone around me. All of a sudden I heard 'Welcome to Howard County. Way to go, Heather,' over a loudspeaker." Hill said she couldn't tell where it was coming from at first. "I thought, 'is this

God?'" She saw a banner hanging from the deck of the house and a small crowd of people with binoculars and cow bells waving back. They had printed off the race lineup and were able to determine her name from her bow number. "I had a smile on my face for the rest of the day."

Exhaustion eventually takes a toll on some competitors. Discussions on a Rivermiles.com forum allude to many participants experiencing hallucinations such as tree people and cartoon characters. Hill said she saw visions of people along the riverbank. She said it took a lot of mental fortitude to push through the exhaustion.

To Hill's surprise, her co-workers were following her progress closely—checking in with her ground crew through Twitter. After Brown and Roberts would tweet a progress update, followers would tweet back encouraging messages that were conveyed to Hill at checkpoints along the way. When Hill reached the finish line, her co-workers in Kansas City, friends and family knew about it. Although her finish was exciting for them, it wasn't as exciting for Hill as she had anticipated it to be.

"I was totally exhausted, and paddling in to that last little bit in St. Charles, and seeing my parents and my friends all cheering for me was just amazing," said Hill. "It was more emotional than anything. I didn't have any energy to do back flips or anything," she joked.

Throughout the race several coworkers supported Hill by coming out unexpectedly to cheer at the start, help the ground crew during the race, or celebrate at the finish line.

Hill finished 10th in the Women's Solo Division in just 79 hours and 3 minutes—well within the 88-hour time limit. Overall, she finished 125th out of the 294 teams/individuals that participated. According to the Missouri River 340 race results, 110 teams/individuals did not finish the race.

"There was never any doubt in our minds that Heather would not finish the race despite the heat and exhaustion," said Brown. "We were very proud of her and excited when she came across the finish line."

More than 300 paddlers wait to start the Missouri River 340 in Kansas City, Mo., the morning of July 31. The race to St. Charles, Mo., is to be completed in less than 88 hours and is listed as one of National Geographic's Top 100 American Adventures. Photo by Tracy Brown



A PRETTY DAM GOOD FINISH

By David S. Kolarik

Congratulations to the Kansas City District on our strong second place finish in this year's Kansas City Corporate Challenge competition.

Of course the desire, spirit and fight was aimed at a first place finish, yet second place is a tremendous achievement due to the large number of teams (22) that competed in Division D this year.

"This year our enthusiasm and participation was at an all time high. The collective effort, camaraderie and team spirit to move from fourth in our division to second was tremendous," said Mike Watkins, KCCC coordinator.

Watkins added that there are tremendous benefits to participating in KCCC in addition to the actual competition—the number of individuals you meet with, level of support and the camaraderie developed amongst Corps employees.

A notable standout in this year's competition was Jim Pennaz who once again dominated the overall individual medal count with four gold and a silver medal in various swimming competitions.

"The best part for me is being on a team with fellow district employees and getting to know them outside of a work environment," said Pennaz.

Pennaz has since transferred to the Honolulu District, yet his swimming achievements throughout his tenure with the Kansas City District will long be remembered. From 2010-2012, Pennaz brought home 11 gold, and three silver medals in support of the district's overall Corporate Challenge efforts.

Corporate Challenge success isn't his only legacy to the district. Pennaz served the district admirably as chief of the Hydrologic Engineering Branch for the past four years.

"This is by far the most interesting and challenging position I've held over the past 39 years with the Corps. I will miss the dedication and professionalism and comradeship of those I've served with in the Kansas City District," said Pennaz.

"I think this year was a tremendous success and a great opportunity to excel next year. We're gaining momentum and I'm very optimistic about our showing next year and think we have a strong chance to do just as well if not win our division," Watkins added.

Thanks to all who volunteered, participated and supported including the Corporate Challenge event coordinators and PDT members. All were extremely critical to this year's successful showing.



Top: Great Dam Team members pose after the half marathon event on May 19. The Corps of Engineers took 2nd place in the meet. Pictured from left to right: Adam Q. Jones, Allen R. Tool, Eduardo H. Fernandez, Stephen J. Spaulding, Thomas Topi, Steven K. Iverson, Maj. Rachel Honderd, Ben Davis, Jean Hilger, Heather B. Hill, Allen J. Chestnut and Col. Anthony J. Hofmann.

Bottom: Jim Pennaz poses with his five medals earned during the Corporate Challenge swim meet held June 25-28. He earned four gold medals and one silver medal. Photos provided

An Engineering Journey

By Jessie Hahn

I have always enjoyed travelling. In the past, my trips have been limited to the places where tourists are supposed to go and experiencing the parts of culture that are chosen to be shared. This summer, I was able to see a different side of travel when I travelled to Guatemala with Engineers Without Borders to work on a potable water project.

EWB is an organization with chapters at universities across the nation. Each chapter is broken up into teams that partner with a community in another country. The students work with that community to engineer improvements such as potable water sources and erosion control. Missouri University of Science and Technology's chapter of EWB is made up of four different teams that partner with communities in Honduras, Bolivia and Guatemala.

I have been a part of the Nahualate, Guatemala, team for about a year. S&T's chapter of EWB has been partnering with this community for five years. Before we got involved, the community had selected a water committee and had purchased a small tract of land for a well. Our work has focused on getting a well drilled and designing an elevated water tank and a distribution system for the community.

The well has been a particular challenge. Initially, we had two bids for the well. We chose the driller who gave the cheaper bid and they started drilling on the tract of land that the community had purchased. After consistent news that the driller was breaking down repeatedly and not making progress, we chose to find a new drilling company—one of the objectives for this summer's trip.

This July we were able to meet with a new driller and discuss the possibility of drilling in the same location. The new driller, Daho Pozos, explained that they could not get their rig into the well site that the community had purchased. Our team then looked for other potential well locations that the driller would be able to access. We found five potential well sites and chose one as the best option. We then took these potential sites to the water committee and discussed each site. The committee brought forth issues and

benefits of some of the sites that we had not realized, such as landowners' opinions about the project and access to other water sources. The water committee discussed their options and decided to change the well site as we recommended. Representatives from Daho Pozos came back to evaluate the new site the next day. The new site was approved and the representative said that they would have a rig on the site within 22 days.

Because of the problems with the first well driller, it was important for us to be working very visibly on this trip to show the community that we were still committed to their project.

We used wooden stakes and marking paint to show where the distribution piping would be throughout the community. The process also helped us to refine our pipe placement. The head of the water committee helped us to negotiate property rights so we could route the pipes through property owner's yards instead of busting through the few paved roads in the community.

We also made detailed drawings of trouble spots in the distribution systems. Every place where the pipe would cross an irrigation

canal, ditch or bridge had to be individually designed while we were in-country so we could see the crossings and how to navigate them. Once we had them hand-drawn, we spent evenings and the hottest part of the day drawing them in AutoCad on a few laptops that we brought with us.

We spent a lot of the trip working hard, but we did make time for some fun. In Nahualate we spent time playing with the kids, who loved having their picture taken and playing soccer. Before we returned to the states we spent a day in the beautiful and historic city of Antigua and hiking a volcano named Pacaya near Antigua.

Hahn is a student employee for the summer of 2012 with the U.S. Army Corp of Engineers at Fort Leonard Wood. She is majoring in Geological Engineering at Missouri University of Science and Technology. Hahn spent time working on the Training Barracks Upgrade Program 2011 and Tech Escort projects as well as Department of Labor enforcement.



Jessie Hahn poses with other team members from Engineers Without Borders during their trip to Guatemala. Their mission was to drill a well and design an elevated water tank. Photo provided



This year's theme for the Combined Federal Campaign is "**The Power of You.**" The CFC meets so many needs, but it's safe to say that **YOU** know someone whose life has been touched, lifted and brightened by a charity using funds collected through the CFC and contributed by your peers. Our district goal for 2012 is \$95,000.

A few key individuals to note—Mr. Ed Kolodziej, this year's loaned executive, Ms. Jeanne Curtis-Thompson, our agency coordinator, and most importantly, our canvassers. Please fill out your pledge card and return it to your CFC canvasser by November 9.

YOU are wanted. **YOU** are needed. And **YOU** have the power to help the CFC help **YOUR** friends and neighbors. It all starts with "**The Power of You.**"

For more information ask your canvasser, or visit www.heartlandcfc.org.

The power of **YOU.**



Civilian Education System **realigned**

By Beverly Hogle

Learning is a lifelong process and critical to our continuing mission within the Department of the Army. Here within the Kansas City District, we view all employees as potential leaders/change makers and feel it is important that we prepare and give you the right tools to succeed.

On your road to success you will find a number of distributed learning courses that permit you to take courses at your computer and progress and develop within your position. But for leadership development, by far, the most important courses you can take are through the Army's Civilian Education System (CES).

The Civilian Education System was launched in January 2007 as a sequential learning system to develop leadership skills and replaced the Army's Management Staff College (AMSC) legacy courses such as **LEAD** – Leadership Education and Development and **OLE** – Organizational and Leadership for Executives.

These programs have continued to evolve and on April 27, 2012, ALARACT 12/2012 announced significant changes to CES moving the program from a sequential learning system to a blended distributed and residential program based on an employee's grade level. The ALARACT also rescinded the 10 year rule for granting equivalent credit for Civilian and Military training.

This means that CES course attendance is now targeted towards specific civilian grades. Employees may take and attend the CES courses targeted for their current grade. Employees are also permitted to enroll in courses below their grade levels. The CES courses and grade targets are indicated below:

Foundation Course (FC)	GS 01 - 15
<i>(NOTE: The Foundation Course is mandatory for all employees hired 30 Sep 2006 and must be completed before taking your targeted CES course)</i>	
Basic Course (BC)	GS 01 - 09
Intermediate Course(IC)	GS 10 -12
Advanced Course (AC)	GS 13 - 15 (no change)
Continuing Education (CESL)	GS 14 -15 (no change)

The 10-year rule for equivalent course credit. This is an important and welcome change for employees who have completed specific approved professional military education courses or legacy civilian leader development courses at any time in the past. You will now show as having met the requirement for your target CES course. Equivalent courses are listed at: https://www.atrrs.army.mil/channels/chrtas/Documents/PDF/Help/CES_Legacy_Courses.pdf.

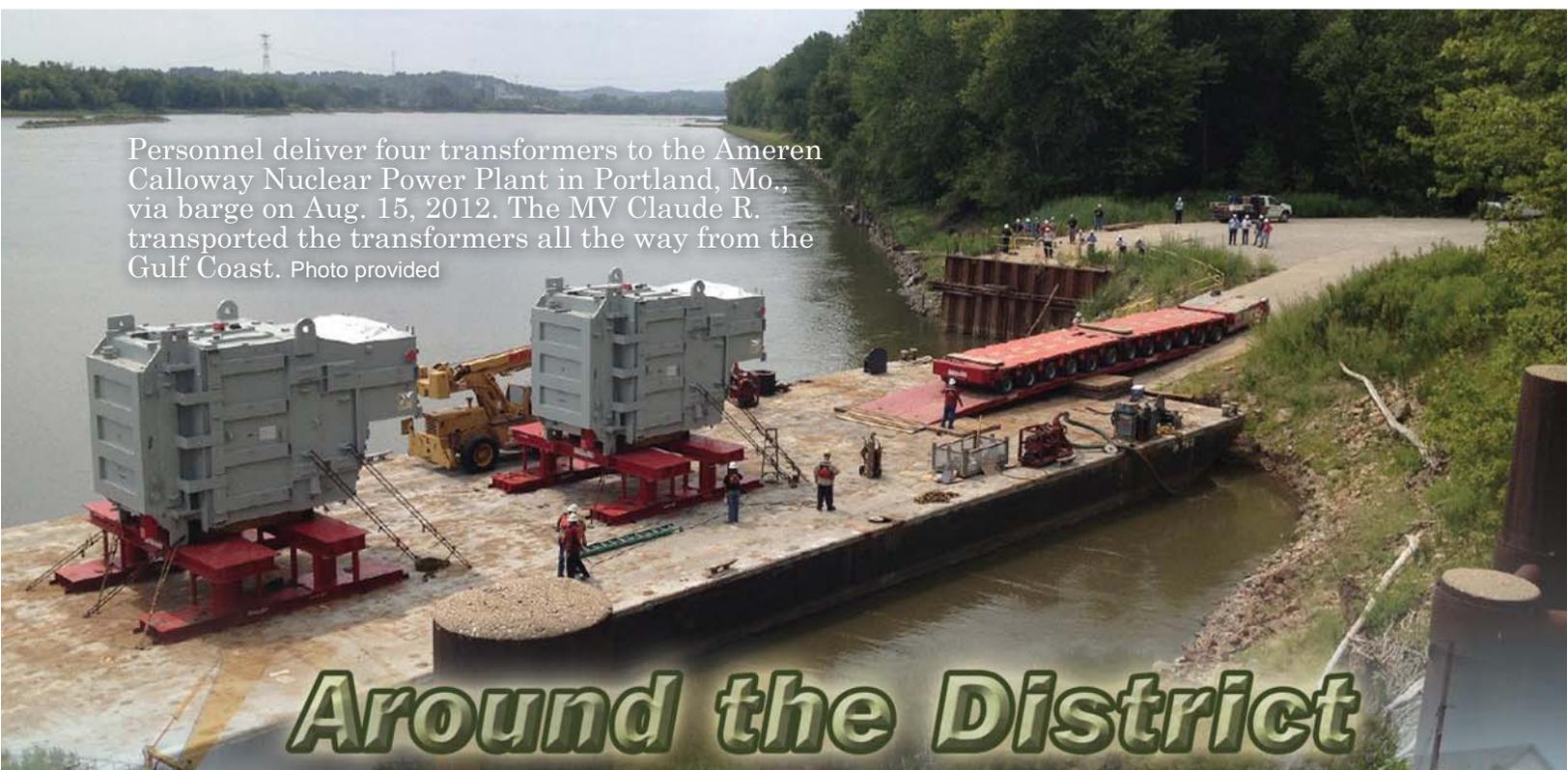
How do you register for your CES course?

Civilians may view their eligibility profile and register for a CES course through the Civilian Human Resource Training Application System (CHRTAS) at: <https://www.atrrs.army.mil/channels/chrtas/student/logon.aspx?caller=1>.

First time users must create a student profile in order to have access to their information or to register for a course. Be sure to include this on your individual development plans for work planning and scheduling purposes.

Be proactive in your personal and professional development. Join the cadre of the Kansas City District employees that are completing the Army's Civilian Education System (CES) courses. It is not only an investment in the Army's future BUT YOURS! To find out more about CES visit the MSO/Training page at: <https://intranet.usace.army.mil/nwd/nwk/ms/pages/home.aspx>.

CES Course	Grade Targets	Distributed Learning	Resident Training
Foundation Course (FC)	GS 01-15 <i>(Required for all Army Civilians employed after 30 September 2006)</i>	57 hours	
Action Officer Development Course	<i>Required for interns and must be completed before conclusion of the intern program</i>	40 hours	
Supervisor Development Course	<i>Required for all Army supervisors (Military and Civilian) of Army Civilian employees</i>	30 hours	
Basic Course	GS 01-09	40 hours	80 hours
Intermediate Course	GS 10-12	44 hours	120 hours
Manager Development Course		40 hours	
Advanced Course	GS 13-15	63 hours	160 hours
Continuing Education for Senior Leaders	GS 14-15	40 hours	40 hours
Senior Service College	GS 14-15	24 months	10 months



Personnel deliver four transformers to the Ameren Calloway Nuclear Power Plant in Portland, Mo., via barge on Aug. 15, 2012. The MV Claude R. transported the transformers all the way from the Gulf Coast. Photo provided

Around the District



Newt Marine installs concrete junction boxes and concrete pipe on Aug. 17 as part of the North Kansas City Relief Well project. The \$1.7 million contract is being administered by the Kansas City Resident Office.

Photo by Joshua A. Watts



Sharon A. Belcher, left, serves lunch to volunteers at the 16th Annual Stockton Lake Cleanup on Sept. 8. Volunteers gathered more than 3,800 pounds of trash from around the lake.

Photo by Becky Groff, Cedar County Republican



Eddie Fernandez, Susan Abbott and Mark Little (left to right) attend an Operational Condition Assessment at Fort Peck Dam in Montana on Sept. 12. An OCA captures critical features of the dam that are in need of repair to determine how best to allocate future O&M dollars by priority.

Photo by Jody Ruckman