
2010

US Army Corps of Engineers
Planning Community of Practice Conference



"Planning Smart, Building Strong"

Presented by: Headquarters, USACE
Hosted by: South Atlantic Division

PLANNING SMART, BUILDING STRONG

Developing Sound Water Resources Solutions

CONFERENCE OVERVIEW

- 1. Purpose.** This conference will provide a forum to discuss planning issues and innovations related to the Corps' mission areas, with special emphasis on how the Planning Community of Practice supports the Campaign Plan of the Corps. The conference will emphasize interactions among economists, environmental scientists and engineers. The format will allow for discussions of policy and strategic initiatives, field lessons learned, case studies, and current and potential future issues facing the Corps. Issues relating to the full range of Corps activities including problem identification, plan formulation and evaluation, engineering and construction, operations and maintenance, and adaptive management and monitoring may be discussed. Meetings of the economics, environmental, plan formulation and cultural resources Sub-CoPs will also be held in support of their efforts to improve the state of professional practices in their respective areas.
- 2. Objectives.** The conference has numerous objectives:
 - Strategic goals* - communicate how the Planning organization is advancing to meet USACE strategic initiatives such as the Campaign Plan, the Civil Works Strategic Plan, and the USACE Environmental Operating Principles through collaborative planning, watershed management, partnering, risk-informed decision making, risk communication, etc.
 - Policy* - communicate the latest advances in policy and its implementation - review plans, agency technical review, independent external peer review, model certification, sea level change, watersheds, mitigation, etc.
 - Technology transfer* - communicate the latest technical information and tools to members of the Community of Practice to increase product quality and responsiveness.
 - Lessons learned and best practices* - share what works and what doesn't in the areas of analytical techniques, policy compliance and the planning and study processes, and "getting it right the first time"
 - Professional development* - help individuals focus career goals to enhance the overall Planning Community of Practice
 - Sub-Cop activities* - provide settings for sub-CoPs to meet and further their development

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Planning Community of Practice Conference 2010
"Planning Smart, Building Strong"
CONFERENCE AT A GLANCE

DAY	TIME	TOPIC
Monday June 7	10:00 - 7:00	Conference Registration
	1:00 - 5:00	Various Pre-Conference Sessions - see separate announcements
	5:00 - 7:00	Welcoming Icebreaker
Tuesday June 8	7:00 - 8:20	Last-minute Registration
	7:00 - 8:20	BREAKFAST - Networking and Exhibits
	8:30 - 10:00	PLENARY SESSION: USACE AND INNOVATION
	Welcome:	Colonel Alfred A. Pantano, Jr., Jacksonville District Commander
	Welcome:	Major General Todd T. Semonite, South Atlantic Division Commander
		Ms. Jo-Ellen Darcy - Assistant Secretary of the Army (Civil Works)
		Mr. Patrick Brennan, Vice President, Creative Development - Walt Disney Imagineering
	10:00 - 10:30	Break
	10:30 - 12:00	CONCURRENT SESSIONS I - FIELD APPLICATIONS
	12:00 - 1:30	Lunch
	1:30 - 3:00	CONCURRENT SESSIONS II - CORPORATE ISSUES
3:00 - 3:30	Break	
3:30 - 5:00	SUB-COP WORKSHOPS I: Economics; Environmental; Plan Formulation; Cultural Resources	
Wednesday June 9	7:00 - 8:50	BREAKFAST - Networking and Exhibits
	9:00 - 10:00	PLENARY SESSION: PERSPECTIVES FROM THE CHIEF OF ENGINEERS
		Lieutenant General Robert L. Van Antwerp, Commander and Chief of Engineers
	10:00 - 10:30	Break
	10:30 - 12:00	CONCURRENT SESSIONS III - FIELD APPLICATIONS
	12:00 - 1:30	Lunch
	1:30 - 3:00	CONCURRENT SESSIONS IV - CORPORATE ISSUES
	3:00 - 3:30	Break
3:30 - 5:00	CONCURRENT SESSIONS V - FIELD APPLICATIONS	
Thursday June 10	7:00 - 8:20	BREAKFAST - Networking and Exhibits
	8:30 - 10:00	PLENARY SESSION: PERSPECTIVES FROM CIVIL WORKS & THE PLANNING COMMUNITY
		Mr. Steven L. Stockton, Director of Civil Works, USACE
		Mr. Theodore A. "Tab" Brown, Chief, Planning and Policy Division
	10:00 - 10:30	Break
	10:30 - 12:00	CONCURRENT SESSIONS VI - FIELD APPLICATIONS
	12:00 - 1:30	Lunch
	1:30 - 3:00	CONCURRENT SESSIONS VII - CORPORATE ISSUES
	3:00 - 3:30	Break
3:30 - 5:00	SUB-COP WORKSHOPS II: Economics; Environmental; Plan Formulation; Cultural Resources	



**US Army Corps
of Engineers®**
Jacksonville District

Colonel Alfred A. Pantano, Jr. Commander

BIOGRAPHY



Colonel Alfred A. Pantano, Jr. assumed command of the Corps of Engineers, Jacksonville District in July 2009.

COL Pantano recently graduated from the United States Army War College at Carlisle Barracks, Pennsylvania. Prior to this assignment, he served as the Chief of Staff of the United States Army Engineer School at Fort Leonard Wood, Missouri. COL Pantano commanded the 94th Engineer Combat Battalion (Heavy) in Germany, Iraq, and at Fort Leonard Wood, Missouri. He was responsible for transforming the 94 ECB (H) to a modular structure and rebasing it from Germany to Fort Leonard Wood as part of the Army's Global Rebasing and Restationing Initiative.

COL Pantano has served in a myriad of staff positions as a field grade officer to include Executive Officer to the Chief of Staff, United States Army Europe in Heidelberg, Germany; Executive Officer of the 1st Armored Engineer Brigade in Baghdad, Iraq; Executive Officer and Operations Officer, 94th ECB(H) in Vilseck, Germany; Operations Officer, North Atlantic Division, United States Army Corps of Engineers at Fort Hamilton, New York; and Project Manager, New England Division/District United States Army Corps of Engineers, Waltham/Concord Massachusetts. COL Pantano commanded the 887th Light Equipment Company, 326th Engineer Battalion (Air Assault) at Fort Campbell Kentucky.

COL Pantano is a native of Milford, Massachusetts. He graduated from the Virginia Military Institute and was commissioned into the Army Corps of Engineers on May 15, 1987. He has a Bachelor of Science degree in Civil Engineering from the Virginia Military Institute and a Master of Science degree in Engineering Technology from Murray State University. He is a graduate of the Engineer Officer Basic and Advanced Courses and the Command and General Staff College.



US Army Corps of Engineers

South Atlantic Division

BUILDING STRONG®



Major General Todd T. Semonite **Commander** **South Atlantic Division** **U.S. Army Corps of Engineers**

Major General Todd T. Semonite is Commander and Division Engineer of the U.S. Army Corps of Engineers, South Atlantic Division. He took command on May 1, 2009. The South Atlantic Division is one of eight Corps of Engineers regions providing engineering and construction services to the nation. It is the Corps' regional business center in the southeast, the Caribbean, and Central and South America, with district offices in Wilmington, NC, Charleston, SC, Savannah, GA, Jacksonville, FL, and Mobile, AL.

As Division Commander, MG Semonite oversees the planning, design and construction of projects to support the military, protect America's water resources, and restore and enhance the environment within a 250,000 square mile area which includes all or part of 8 southeastern states.

MG Semonite's immediate past assignment was as Commander of the U.S. Army Corps of Engineers North Atlantic Division in New York City. Prior to that he served as Commanding General, Maneuver Support Center and Ft. Leonard Wood, MO. He also served as Assistant Commandant, U.S. Army Engineer School and Ft. Leonard Wood, MO, and in a wide variety of command and staff positions including: Director, Office of the Chief of Engineers, HQDA at the Pentagon; Deputy Commander, Task Force Restore Iraqi Electricity (responsible for designing and executing a \$1.1 billion reconstruction program); and Executive Officer to the Commanding General, USAREUR and 7th Army.

MG Semonite has also served as Commander of the 130th Engineer Brigade and the V Corps Engineer at Hanau, Germany; Chief of Military Operations and Topography, and Chief of International Operations, both with USAREUR; Battalion Commander, 23rd Engineer Battalion, 1st Armored Division, Friedberg, Germany (with a one-year deployment to Bosnia); Construction and Design Supervisor, 416th ENCOM, Chicago, IL; S4, 937th Engineer Group, and S3 and Executive Officer, 1st Engineer Battalion, both at Ft. Riley, KS; and Operations Officer, Corps Of Engineers Office, Ft. Drum, NY.

MG Semonite, a native of Bellows Falls, VT, is a registered professional engineer in Virginia and Vermont. He graduated from the U.S. Military Academy, West Point, NY and was commissioned into the Corps of Engineers in 1979. He has a Bachelor of Science degree in Civil Engineering from the U.S. Military Academy, a Master of Science in Civil Engineering from the University of Vermont, and a Masters of Military Arts and Sciences from Fort Leavenworth. He is a graduate of the Engineer Officer Basic and Advanced Courses, the Combined Arms Services Staff School, the Command and General Staff College, and the Army War College.

MG Semonite's awards include the Legion of Merit (4 Awards), Bronze Star, Meritorious Service Medal (7 Awards), Army Commendation Medal (3 Awards), Army Achievement Medal, Army Superior Unit Award (2 Awards), NATO award, Ranger tab, and Parachutist Badge



Jo-Ellen Darcy

Assistant Secretary of the Army (Civil Works)

Biographical Statement

Ms. Jo-Ellen Darcy, the Assistant Secretary of the Army (Civil Works), establishes policy direction and provides supervision of the Department of the Army functions relating to all aspects of the U.S Army Corps of Engineers' Civil Works program, including all reimbursable work performed on behalf of Federal and non-Federal entities, as well as the formulation and oversight of the program and budget of the Army National Cemeteries. These responsibilities include programs for conservation and development of the nation's water and wetland resources, flood control, navigation, and shore protection.

On August 11, 2009 President Barack Obama appointed Jo-Ellen Darcy as Assistant Secretary of the Army (Civil Works) following confirmation by the Senate. Prior to her appointment, Jo-Ellen Darcy was the Senior Environmental Advisor to the Senate Finance Committee, responsible for environment, conservation and energy issues. Previously, she was Senior Policy Advisor to the Senate Environment and Public Works (EPW) Committee, concentrating on water resource and conservation issues involving the Army Corps of Engineers and the U.S Fish and Wildlife Service, as well as nominations for presidentially-appointed positions. At the start of the 107th Congress, she was the Deputy Staff Director for the EPW Committee. From 1993 through 2000, she served as a professional staff member on the EPW Committee, working on a variety of issues, including the Safe Drinking Water Act, Army Corps of Engineers programs, FEMA, Everglades restoration and the Clean Water Act.

Before joining the EPW Committee, Jo-Ellen was legislative representative for the Investment Company Institute, the trade association representing the mutual fund industry. She worked on water resources and transportation issues for Governor Jim Blanchard of Michigan in both Lansing and Washington, D.C. Previously, she worked for the Subcommittee on Economic Stabilization of the House Banking Committee and was an elementary school teacher.

She hails from Fitchburg, Massachusetts, and has a B.A. in philosophy and sociology from Boston College and a M.S. in resource development from Michigan State University.

Patrick Brennan
Vice President of Creative Development
Walt Disney Imagineering – Florida,
Global SQS and Design Services

Patrick Brennan is currently the Vice President of Creative Development for Walt Disney Imagineering Florida. Patrick is responsible for locally driven design work for Walt Disney World Parks and Resorts and leads a diverse group of artist, designers, technical specialist and managers. Patrick's global responsibilities include leading the team of Imagineers responsible for SQS (Show Quality Standards) and Design Services at the Disneyland Theme Park, Tokyo Disney Resort, Hong Kong Disneyland Resort and Disneyland Resort Paris.

Patrick began his career with The Walt Disney Company in 1980 working in show production and show installation for Epcot, i.e. the Land Pavilion, Energy Pavilion, Germany and Mexico Pavilions. Some of his past projects include Tokyo Disneyland original park, Horizons Pavilion, Norway Pavilion, Typhoon Lagoon, Splash Mountain in Tokyo Disneyland and Crush 'n' Gusher, to name a few. He was also Design Director for Tokyo Disneyland, and later Tokyo DisneySeas. He lived in Japan with his family for many years.

Prior to joining the Walt Disney Company, Patrick worked on the design and construction of the Miami Metro Zoo creating natural habitats for animals.

Patrick was born in Binghamton, New York and moved to Miami Beach Florida in 1969. He graduated from the University of Miami with a Bachelor of Fine Arts. Patrick now resides in Windermere, Florida with his wife Catherine and currently supporting two daughters in college.



**Lieutenant General Robert L. Van Antwerp
Chief of Engineers and Commanding General,
U.S. Army Corps of Engineers**

On May 18, 2007, Lieutenant General Robert L. “Van” Van Antwerp became the U.S. Army Chief of Engineers and Commanding General of the U.S Army Corps of Engineers (USACE). General Van serves as the senior military officer overseeing most of the Nation’s civil works infrastructure and military construction.

As the USACE Commanding General, he is responsible for approximately 33,000 Civilian and 600 military employees, who provide project management and construction support to 250 Army and Air Force installations in nearly 100 countries around the world. USACE has a key role in support to Overseas Contingency Operations, with thousands of Civilians and Soldiers deployed to support reconstruction in Iraq and Afghanistan. General Van is also responsible for hundreds of environmental protection projects and for overseeing the regulatory permit program to protect, restore and enhance thousands of acres of wetlands. In addition, USACE has an emergency response mission to support the Federal Emergency Management Agency in restoration and repair after a disaster, whether natural or manmade.

General Van took command of USACE after serving, most recently, as Commanding General, U.S. Army Accessions Command, responsible for recruiting and training thousands of young patriots who represent the epitome of “Army Strong.”

Other command assignments include the U.S. Army Maneuver Support Center and Fort Leonard Wood; Commandant, U.S. Army Engineer School, Fort Leonard Wood, Missouri; U.S. Army Corps of Engineers, Los Angeles District during the Northridge Earthquake of 1994; the U.S. Army Corps of Engineers, South Atlantic Division, Atlanta, Georgia; and the 326th Engineer Battalion, 101st Airborne Division (Air Assault) during OPERATION DESERT SHIELD and OPERATION DESERT STORM in Saudi Arabia and Iraq.

A graduate of the U.S. Military Academy at West Point in 1972, General Van completed Ranger, Airborne and Air Assault training, and both the Engineer Officer Basic and Advanced Courses. He holds a Master of Science degree in Mechanical Engineering from the University of Michigan and a Master of Business Administration degree from Long Island University in New York. He is a Registered Professional Engineer.

General Van and his wife, Paula, have been married for 34 years and have five children, Jeff, Luke, Rob, Julia and Kathryn.



Biography

Department of the Army



Steven L. Stockton, P.E.
Director, Civil Works
Headquarters, U.S. Army Corps of Engineers
Washington, D.C.



Steven L. Stockton serves as the Director of Civil Works, Headquarters, U.S. Army Corps of Engineers, Washington, D.C. In this position he shares the responsibilities of the Deputy Commanding General for Civil and Emergency Operations, under the policy guidance of the Chief of Engineers and the Assistant Secretary of the Army (Civil Works), for managing and directing the policy development, programming, planning, design, construction, emergency response, operation, and maintenance activities of the Army Civil Works Program, a \$5 billion annual program of water and related land resources of the United States. He also serves as Chairman of the U.S. Section Permanent Engineering Board for the U.S.-Canada Columbia River Treaty, the Corps of Engineers Dam and Levee Safety Officer, and is a Governor on the World Water Council Board of Governors.

Mr. Stockton was selected to the Senior Executive Service in January 1996. From August 1998 thru May 2005, he served as the Director, Engineering and Technical Services; Director, Programs Management; and Director, Regional Business; for the U.S. Army Corps of Engineers, South Pacific Division in San Francisco, California. From May until November 2004, Mr. Stockton was the Director, Business Management, U.S. Army Corps of Engineer, Gulf Region Division in Baghdad, Iraq. From his selection in January 1996 thru July 1998, Mr. Stockton was the Chief, Engineering Division, Civil Works Directorate, Headquarters, U.S. Army Corps of Engineers, Washington, D.C.

CAREER CHRONOLOGY:

- 1988 – 1996: Chief, Planning and Engineering Division, U.S. Army Corps of Engineers, Portland District, Portland, OR
- 1975 – 1988: Various positions including Branch Chief, Geotechnical Branch, U.S. Army Corps of Engineers, Portland District, Portland, OR
- 1972-1975 Naval Officer. Multiple Mediterranean and Caribbean deployments

COLLEGE:

- BS, Civil Engineering, Oregon State University, 1971

SIGNIFICANT TRAINING:

- Senior Executive Fellow, John F. Kennedy School of Government, Harvard University, 1991

CERTIFICATIONS:

- Registered Professional Civil Engineer, State of Oregon

AWARDS AND HONORS:

- Presidential Rank Award – Meritorious Executive, 2003
- Oregon State University, Academy of Distinguished Engineers
- Secretary of the Army’s Exceptional Civilian Service Award
- Meritorious Civilian Service Award (2)
- Superior Civilian Service Award (2)
- Commanders Awards for Civilian Service (3)
- North Pacific Division and the Portland District Engineer of the Year Award, 1982

PROFESSIONAL MEMBERSHIPS AND ASSOCIATIONS:

- Society of American Military Engineers
- American Society of Civil Engineers

MAJOR PUBLICATIONS:

- U.S. Army Corps of Engineers 2012: *Preparing USACE for the 21st Century*, 2003



Biography

Department of the Army



Theodore A. (Tab) Brown, P.E. Chief, Planning and Policy Division and Mississippi Valley Division Regional Integration Team U.S. Army Corps of Engineers



Since January 2009, Mr. Theodore A. (Tab) Brown has served as Chief of Planning & Policy in the Headquarters, U.S. Army Corps of Engineers (USACE), Washington, DC. He also serves as the Leader of the Mississippi Valley Division Regional Integration Team in Headquarters. In this capacity, he provides leadership and oversight for Coastal Louisiana post-Katrina reconstruction and planning. Mr. Brown also serves as the leader of the USACE-wide Planning Community of Practice. In his current position, Mr. Brown formulates and coordinates Army Civil Works policy with the Department of Army, Federal agencies, and Office of Management and Budget (OMB); serves as Executive Liaison for the Chief's Environmental Advisory Board (EAB), and provides representation to other Federal Advisory Committees. Mr. Brown is responsible for leading efforts in the implementation of the 2007 Water Resources Development Act. He serves as principal Civil Works point of contact with congressional authorizing committees on policy and planning matters. He also formulates civil works environmental policy and develops new civil works planning and program initiatives for issues where water and related land resources, Corps experience and expertise, and multiple-objective problem solving potentially come together. He also served in this position in an acting capacity from November 2007 – May 2008.

PRE-SES CAREER CHRONOLOGY:

- Chief, Planning and Policy Division, Great Lakes & Ohio River Division, USACE Cincinnati, OH, 2002-2009
- Chief of Business Management Office, Great Lakes & Ohio River Division, USACE, Cincinnati, OH, 1999-2002.
- Chief, Planning Branch, Nashville District, USACE, Nashville, TN, 1997-99
- Assistant Chief, Plan Formulation Branch, Huntington District, USACE, Huntington, WV, 1996-1997
- Developmental Assignment as Chief, Economic and Social Analysis Branch, Huntington District, USACE, Huntington, WV, 1995-1996
- Assignments as Senior Study Manager, Project Manager, and Quality Control Manager, Planning Division, Huntington District, USACE, Huntington, WV, 1988-1995
- Developmental assignment as Planning Program Manager, Ohio River Division, USACE, Cincinnati, OH, 1992

- Junior Fellow/Engineer Student Trainee, Special Studies Branch, Planning Division Huntington District, USACE, Huntington, WV, 1983-88

COLLEGE:

- Master of Business Administration, Marshall University, Huntington, WV, 1991
- Bachelor of Science in Civil Engineering, The Ohio State University, Columbus, OH, 1988

SIGNIFICANT TRAINING:

- USACE Planners and Project Managers Program, Fort Belvoir, VA 1994-95
- Junior Fellowship Program, Huntington District, USACE, Huntington, WV, 1983-84

CERTIFICATIONS:

- Registered Professional Engineer, State of Ohio

AWARDS AND HONORS:

- Commander's Award for Civilian Service 1999
- Outstanding Planning Achievement Award, Ohio River Division, 1996
- Outstanding Planning Achievement Award, Huntington District, 1996
- Outstanding Planning Achievement Award, Huntington District, 1995
- District Black Engineer of the Year Award, Nashville District, 1998
- District Black Engineer of the Year Award, Huntington District, 1996
- District Black Engineer of the Year Award, Huntington District, 1995
- District Black Engineer of the Year Award, Huntington District, 1992

PROFESSIONAL MEMBERSHIPS AND ASSOCIATIONS:

- Society of American Military Engineers

MAJOR PUBLICATIONS:

- Holding Back the Grundy Floods, *Military Engineer*, November/December 1991. co-author

SESSION I

TIME: Tuesday 8 June, 10:30-12:00

ROOM: Salon 3

TRACK: Systems Approaches

TOPIC: Watershed Planning

MODERATOR: Vachere Lampley, SAD

PRESENTATIONS:

“Sustaining our Past – Securing our Future” – A Comprehensive Watershed Reconnaissance Report for the Ohio River Basin.

Presenters: Mike Worley and Beth Cade, Huntington District

Abstract: The Ohio River Basin Comprehensive (ORBC) Reconnaissance Report is a multi-faceted watershed approach to planning. It covers approximately 204,000 square miles, portions of 15 states and four Corps Districts. Formulated by a multi-district team, the study presented a challenging opportunity to effectively collaborate with Federal, state, regional and local agencies, NGO's, the public and within our own organization. Using a watershed approach, the report evaluated the needs, problems and opportunities of water resources across the basin and working with partners to develop alternatives that addressed the issues and concerns of the basin population. Of the many issues raised by the public, unregulated land development, water quality, stormwater management and potential effects of climate change on the water resources were most frequently cited. The Corps' strategic planning efforts are beginning to chart a new course of land stewardship, watershed management strategies and multi-agency programs that will be geared towards sustainability of the basin land and water resources as well as protection of sensitive ecosystems. The process relied heavily on GIS databases and mapping to analyze complex relationships of natural systems and human development.

This presentation will discuss the challenges of effectively reaching out to the public and stakeholders and qualitative plan formulation at the reconnaissance level. Participants will be given a foundation to conduct effective large scale watershed planning at their home district.

Columbia River Treaty 2014 / 2024 Review; Planning Considerations and Issues In Support of Potential Renegotiation of an International Treaty

Presenter: Matthew Rea, Portland District

Abstract: The U.S. and Canada executed the Columbia River Treaty in 1964, obligating the nations to jointly develop water resources in the Columbia River Basin and to optimize management of the system for flood control and hydropower. The Treaty has no expiration date, continuing indefinitely unless either nation chooses to terminate after 2024 with a minimum ten years advance notice. The Treaty is recognized as a model for international collaboration in transboundary water management. Yet conditions in the basin have changed substantially since the Treaty was executed. It isn't clear that continuation of the Treaty is in the economic best interest of the two nations. Also, water resource priorities have changed and there is interest amongst stakeholders in amending the treaty to address fisheries and other river outputs. Regardless of a decision to terminate or not, after 2024 there will be major changes in the use of Canadian reservoir storage for flood control downstream in the U.S. The Corps' Northwestern Division, in cooperation with Bonneville Power Administration and entities of the Canadian Government, is evaluating future treaty alternatives that will ultimately support a decision by the U. S. Department of State (DOS) to continue, terminate or amend the Treaty. This paper will explore complex considerations associated with applying Corps planning processes and procedures to an international treaty decision, including application of current flood

risk management tools and procedures to a treaty based on historic flood control principles, and development of a base condition based on highly uncertain treaty decisions after 2024.

Great Lakes Habitat Initiative (GLHI)

Presenter: Michael J. Greer, Buffalo District

Abstract: In March 2006 the Assistant Secretary of the Army for Civil Works announced the selection of the Great Lakes Habitat Initiative as one of five projects to be funded for analyses of complex water resources issues within large, multijurisdictional watersheds. The Great Lakes Habitat Initiative resulted an implementation plan for the protection and restoration of wetlands and aquatic habitat that builds upon the recommendations of the *Strategy of the Great Lakes Regional Collaboration* released on December 12, 2005. The Great Lakes Habitat Initiative helped bridge the gap between the regional needs identified in the Strategy of the Regional Collaboration and the programs that provide funding for “on-the-ground” actions.

This presentation will focus on the lessons learned during the transformation of the GLHI Steering Committee to the Great Lakes Habitat and Species Work Group and; how the tools developed as part of the GLHI have been sustained and used by various stakeholders since the project’s completion in 2008.

***A Software Program to Aid in the Design and Construction of Conceptual Ecological Models:
CEMCAT***

Presenter: Craig Fischenich, ERDC

Abstract: Conceptual models are a key component of ecosystem restoration projects and should be developed for each Corps project. These models provide a valuable foundation throughout the planning process as a means of identifying key system elements and interactions, describing problems and possible solutions, communicating concepts to stakeholders, and evaluating if and how project goals are being realized. ERDC has developed a software program, the Conceptual Ecological Model Construction Assistance Toolbox (CEMCAT), to assist in the design and implementation of these models. The software streamlines constructing conceptual models for project developers who already incorporate them into the planning process, and offers a standard structure in which to design and build them. The software also allows those less familiar with conceptual ecological models to quickly and efficiently incorporate this recommended element into the planning and implementation process. It has been used at meetings where multiple individuals and partners have come together to develop a conceptual model (including, for example, a multi-agency collaboration to develop a model for the Southwest Coastal Louisiana Feasibility Study, and a USACE Kansas City District urban stream restoration project), and has facilitated this process by providing a simplified software environment that allows on-the-fly, on-screen development of a visual representation of the model using contributions from all individuals present. The capabilities and operation of the software will be presented.

SESSION I**TIME: Tuesday 8 June, 10:30-12:00****ROOM: Salon 4****TRACK: System Approaches****TOPIC: Collaboration and Communication****MODERATOR: Brad Hudgens, SWD****PRESENTATIONS:*****Reaching out to Tribes – Havasu Creek Watershed Study******Presenter: Kathleen Bergmann, Los Angeles District***

Abstract: The Havasupai Tribe's village of Supai is located in the remote Cataract Canyon on Havasu Creek in the Grand Canyon. After a long drive to the Canyon Rim, the only way to the village is an eight-mile hike, a helicopter ride, or a horseback ride. Mail is delivered by mule train. The beautiful waterfalls, which attract tourists from around the world and provide the Tribe with the majority of its income, are another 2 miles further downstream. Motorized vehicles are not an option. The village, its trails, and falls have suffered from frequent flood events and debris flows. There are few escape routes available to visitors and Supai Residents. The watershed is large (3030 square miles). The Havasupai control only 8% of the land; however, all actions taken in the watershed have potential to impact the Tribe due to its location at the terminus of the watershed at its confluence with the Colorado River. Therefore, any study will require watershed wide collaboration. The Tribal Partnership Program will provide the Tribe with answers to their following frequent questions: "Is there a way to prevent these floods? Is the cause in the canyon or the watershed?"

"Our Mississippi River" Public Outreach Initiative***Presenter: Chuck Spitzack, Rock Island District***

Abstract: The "Our Mississippi River" public outreach initiative was launched in December 2009; the initial response has been overwhelmingly positive. "Our Mississippi River" is the outcome of a search for more effective communication with the public about the work the Corps of Engineers is doing in management of the Upper Mississippi River System (UMRS) and its tributary watersheds. The goal is to inform and engage the public about integrated, sustainable river management; the role of the Corps of Engineers; and how it accomplishes its work in collaboration and partnership with five states, federal agencies, communities and non-government environmental and industry groups. The challenges were the complexity and size of the system, the many Corps programs and mission areas, the diversity of stakeholders and the public, and the desire for holistic presentation. The ongoing initiative is a three-district (St. Paul, Rock Island, and St. Louis) regional effort within the Mississippi Valley Division.

***Comprehensive Plan for the Water Resources of the Susquehanna River Basin
A Case Study in Collaborative Watershed Planning***

Presenter: Maria Franks, Baltimore District

Abstract: The Susquehanna River Basin Commission (SRBC) is an interstate entity composed of the States of New York, Pennsylvania and Maryland, and the Federal Government. As the Federal Commissioner, the USACE represents 16 Federal agencies with an interest in the water resources of the basin.

In 2008, the SRBC adopted the *Comprehensive Plan for the Water Resources of the Susquehanna River Basin*. The Comprehensive Plan provides a framework to manage and develop the basin's water resources and serves as a guide for SRBC, Federal agencies, States, and non-governmental organizations. To ensure the Comprehensive Plan is always current, a Water Resources Program (WRP) Appendix is updated annually. The WRP is arranged according to the Priority Management Areas (Water Supply, Water Quality, Flooding, Ecosystems, Chesapeake Bay, and Coordination, Cooperation, and Public Information). In addition, as the lead Federal agency, USACE has held one Federal Agency Summit and is currently planning a second Summit for 2010. The summits are used to educate Federal agencies about emerging issues and to align how the agencies could best support the goals of the SRBC Comprehensive Plan.

This presentation will include the challenges and benefits of working with a large number of Federal and State agencies to implement a watershed-based comprehensive plan. The discussion will include the steps taken to engage the agencies and to evaluate progress.

***Vision into Action (V2A); A Tool for Community Focus and Motivation: Iowa/Cedar
Watershed Study***

Presenters: Jim Waddell, HQ, Nancy Porter, HQUSACE, Diane Karnish, Rock Island District

Colorful drawing is the key, and has led to insight that traditional workshops have not been able to accomplish. By encouraging participants to draw and discuss their thoughts, the V2A Tool takes individual's ideas, then finds common themes, that lead to dedicated action by individuals and community leaders. The process energizes the participants, and helps the community focus and prioritize the steps needed to achieve their common vision.

V2A is an innovative interview and visualizing technique for capturing and integrating individual and community visions. While similar community "visioning" initiatives are often structured to achieve predetermined design, business or economic solutions; the V2A Tool is geared to occur within a more open community forum with the goal of first listen and obtain diverse individual visions and assessments, whatever they might be, and then integrate them into a regional or community vision. Occurring within the context of sustainability, these integrated individual/community visual images can then be applied to frame a community's future direction and spur additional collaboration, energy and actions in a truly comprehensive manner. It encourages and empowers individuals to be proactive at the local and regional level and take personal responsibility for immediate action.

SESSION I

TIME: Tuesday 8 June, 10:30-12:00

ROOM: Salon 5

TRACK: Risk Informed Decision Making

TOPIC: Risk Applications In Planning

MODERATOR: Larry Cocchieri, NAD

PRESENTATIONS:

Legacy Projects: Planning Challenges

Presenter: Rhiannon Payne, Rock Island District

Abstract: As the focus of flood risk management shifts, infrastructure once critical to the safety of many people is replaced or abandoned (or both). Authorized in the Rivers and Harbors Act of 1930, the Mill Creek – South Slough channel was reconfigured to divert flow from Mill Creek into the Mississippi River, “protecting” the Village of Milan from flooding. It was dredged regularly from 1933 until 1984 when a comprehensive levee system was completed in Milan.

Maintenance dredging encouraged agricultural use of the land and in 1977 the City of Rock Island built its wastewater treatment plant there, constructed on fill material to raise it out of the 100-year floodplain. However, the service lines were placed underneath a matrix of emergent and forested wetlands. Since the discontinuation of dredging, the wetlands are advancing and deepening; and larger, deeper wetlands increase repair time and expense during utility line failures. Wetland advancement is also consuming farmland at an estimated 1 acre/year.

This situation is a complex issue in which the wants and needs of the locals must be weighed against the possibility of destruction of several hundred acres of wetlands. Given that much of the Nation’s infrastructure has outlived its economic/design life but no plans were made for its afterlife, this presentation will illustrate the process of evaluating Federal projects in which O&M has lapsed more than seven years by the example of the Mill Creek - South Slough project

An Approach to Incorporate Sea Level Rise into the Encinitas & Solana Beach Shoreline Protection Feasibility Study

Presenter: Joseph Lamb, Los Angeles District

Abstract: Engineer Circular EC 1165-2-211, “Water Resource Policies and Authorities Incorporating Sea-level Change Considerations in Civil Works Programs” provides USACE guidance for incorporating the potential direct and indirect physical effects of projected future sea level change in the engineering, planning, design, and management of USACE projects. USACE requires a multiple scenario approach to address uncertainty and help develop better risk-informed alternatives. In response to this guidance the Encinitas-Solana Beach Feasibility Study developed a White Paper describing the approach to incorporating the guidance into the feasibility study. The PDT created a draft Sea Level Rise White Paper that was reviewed by the Coastal Planning Center of Expertise (PCX), South Pacific Division, the Sea Level Rise Review Panel, and USACE Headquarters.

Potential effects from this acceleration of sea level rise on coastal environments, such as erosion, increased wetland inundation, and storm surge have the potential to displace coastal populations, threaten infrastructure, intensify coastal flooding, and ultimately lead to loss of recreation areas, public access to beaches, and private property. This presentation will focus on the approach developed to incorporate sea level rise into plan formulation, engineering and economic analysis for the Encinitas & Solana Beach Shoreline Protection Feasibility Study.

Planning a 21st Century Flood Risk Management Project on an Early 20th Century Foot Print, the Sacramento River Bank Protection Project

Presenter: Mike Dietl, Sacramento District

Abstract: Sacramento District's Sacramento River Bank Protection Project (SRBPP) invited a group of over 20 experts to develop study plans to comply with biological opinions, and begin the planning of a general reevaluation report. The SRBPP implements actions on a system wide basis and conducts consultation for each project with resource agencies for 10 listed species at any given location. Participants include Sacramento District, Corps Labs, and other agencies. The goal is to develop a five year plan of study to prioritize technical studies in determining the effects of past projects and developing future with and without project conditions to determine potential problems and opportunities.

The study plan focuses on the effects of rock revetment on listed fish species, expected erosion and failure rates of rock revetment placed over the past 100 years, development of impact assessment methodologies, bringing constructed sites into compliance with Engineering Technical Letter 1110-2-571 "Guidelines for Landscape Planting and Vegetation Management at Levees, Floodwalls, Embankment Dams, and Appurtenant Structures", designs for future environmentally friendly designs through riparian installation manuals, soil placement manual, and an in stream woody material placement manual. Additional items that need to be further developed are identifying locations of various suitable habitats, an engineering monitoring plan for constructed sites, and identification of studies needed to remove rock revetment no longer necessary for protection of lands.

Louisiana Coastal Area Diversion Planning at White Ditch

Presenter: Marshall Plumley, Rock Island District

Abstract: Current guidance directs the formulation of alternatives that account for a variety of relative sea level rise (RSLR) scenarios as part of the comparison of alternatives for coastal Civil Works projects. The presentation will discuss the RSLR considerations made during the development of project Goals and Objectives. Further, determining a desired future condition as well as alternative plan comparison in an environment subject to the risk and uncertainty associated with RSLR will be discussed. This restoration project is downstream of New Orleans and the existing Caernarvon diversion structure and provides for a diversion from the Mississippi River into the central River aux Chenes area using a controlled structure. The objective of the feature is to provide additional freshwater, nutrients, and fine sediment to the area between the Mississippi River and River aux Chenes ridges. This area is currently isolated from the Mississippi River. The Tentatively Selected Plan includes a 35,000 cfs diversion along with modifications to outfall canals and ridge creation. The project would be the largest freshwater diversion for ecosystem restoration on the Mississippi River and restore critical deltaic processes that have been degraded.

SESSION I**TIME: Tuesday 8 June, 10:30-12:00****ROOM: Salon 6****TRACK: Collaborative Planning****TOPIC: Tools for Collaborative Planning****MODERATOR: Dana Coburn, SWL****PRESENTATIONS:*****Building A Strong Community of Practice for Ecosystem Restoration Through the Gateway******Presenter: Valerie Ringold, Northwestern Division***

Abstract: At the 2008 PCoP conference in San Antonio, the Ecosystem Restoration Gateway concept was introduced. The ER Gateway is a spin-off of the Natural Resources Management Gateway developed by the Operations community. The aim of the ER Gateway is to develop a body of information and knowledge that will create a sub-Community of Practice which will then support PDTs and practitioners in planning, designing, constructing and operating ecosystem restoration projects. The goal of the “sub-COPs” is to allow individuals working on similar types of ecosystem restoration projects to network with each other and share information. The Gateway utilizes subject matter experts (SMEs) from across the country to help identify and organize the types of information and content that is useful to their sub-COP. Since early 2009 we have held 4 workshops to begin building the Gateway content. This presentation will give an update on the Gateway activities since the last PCoP conference as well as a general demonstration of the various features of the Gateway. We will also be looking for more great volunteers to continue to help us build this very powerful tool.

Using a GIS Spatial Decision Support System as a Collaborative Plan Formulation Tool in Ecosystem Restoration Projects: A Case Study on the Missouri River***Presenters: Jeff Lin, Wilmington District and Tim Fleeger, Omaha District***

Abstract: The Emergent Sandbar Habitat Evaluation and Ranking (ESHER) tool is a Spatial Decision Support System (SDSS) that aids in the selection of restoration sites for two federally-listed shorebird species, the least tern and the piping plover, as part of the Missouri River Recovery Program. The tool employs spatial measurements of geomorphic, biological, socio-economic, and plan formulation variables, coupled with user input on the relative importance of these variables, to evaluate the restorability of potential sites. The tool was developed in a collaborative context with input from a group of Corps experts and representatives from state resource agencies as well as other federal agencies. The result is a well-documented and consistent approach to annual site-selection that incorporates stakeholder concerns, engineering challenges, and biological criteria very early in the plan formulation process. Incorporation of GIS technology also streamlines the discussion of environmental impacts and reduces the need for physical measurement of impacts to other resources such as vegetation, wetlands, and cultural resources.

Building a New Structure Valuation Model for Flood Risk Management Studies

Presenter: Valerie Ringold, Northwestern Division

Abstract: The field use of IWR-GeoFIT highlighted a number of opportunities to improve the floodplain inventory process. IWR-GeoFIT has been undergoing a major restructuring, and a key improvement will be the inclusion of a new structure valuation model. The new model will allow the user to concentrate on the variables that are most significant to structure valuation. It provides a transparent structure, where the user can understand the breakdown of the structure calculations, and it allows flexibility when incorporated into IWR-GeoFIT, which is no longer dependent on the structure any off-the-shelf software. This presentation will demonstrate the procedures that were used in developing the new valuation model, how it has been tested, and how Corps users can apply the model in the field.

Web-based Tools to Improve Information Management for the Corps Planning Process

Presenters: Athline Clark and Debbie Solis, Honolulu District

Abstract: As a planner – have you ever been overwhelmed by all the information related to the Corps planning process and trying to get just the information you need for the one step you are working on? POH, as an outcome of the 2009 Planning Leader’s Conference, has developed a “beta version” of a web-based process map to help organize all our information. The web-based map simplifies the information into phases of the planning process including study initiation, reconnaissance, and feasibility phase (design and construction to be added later). Within each phase, key steps are identified, such as develop Feasibility Scoping Meeting (FSM) package or conduct Agency Technical Review (ATR). Clicking on the step link takes the user to a page that provides links to the related regulations and circulars, existing templates and checklists, more detailed process maps, links for requirements and tools for specific disciplines (i.e. environmental, cost engineering, economics, etc.) and examples. The information used to develop the beta version pools into one location tools already developed by Headquarters, the Planning Community of Practice (COP), the Planning Centers of Expertise, or other Districts and Divisions. The goal of this presentation and discussion is to seek input from the audience to ascertain if this would be a useful tool to the Planning COP and if so, to expand this more fully, develop an inter-District project management team to complete it, and launch it through the Planning COP sharepoint.

SESSION I

TIME: Tuesday 8 June, 10:30-12:00

ROOM: Salon 7

TRACK: Planning Community of Practice

TOPIC: Planning at the Interface: Ecosystems and the Built Environment

MODERATOR: Janet Cushing, IWR

PRESENTATIONS:

Applying Vegetation Management Policy to Levee and Banks: Early Experiences from Sacramento River Bank Protection Project, California

Presenters: Tom Adams, HDR Engineering; Miki Fujitsubo, Sacramento District

Abstract: The Sacramento River Bank Protection Project (SRBPP) Project Delivery Team needed to develop a strategy to construct newly authorized 80,000 linear feet of bank protection at over 100 identified erosion sites along the Sacramento River. The disposition of the existing vegetation on the levees is the dominant issue. Existing riparian vegetation especially Shaded Riverine Aquatic along the Sacramento River is of high value and critical habitat to endangered migratory fish. But at the same time any bank protection efforts must comply with, ETL 1110-2-571, Guidelines for Landscape Planting and Vegetation Management at Floodwalls, Levees, Embankment Dams, and Appurtenant Structures.

Several issues were encountered when overlaying a vegetation free zone at actual levees and banks under a variety of Sacramento River site conditions. Issues include definition of the critical levee structure, differing terminology between the environmental, geotechnical, and hydraulic disciplines, and how an adjacent setback levee might resolve incompatibility between bank protection and the natural ecosystem. The resulting programmatic bank protection plan is a work in progress, but may present a roadmap for reconciling flood risk management with environmental resources along the Sacramento River.

Working with Nature Environmental Enhancements and Navigation Infrastructure

Presenters: Burton Suedel, ERDC

Abstract: Navigation infrastructure projects all involve human management of some aspect of the natural environment such as current flow, channel depth, or linkages between waterways (e.g., dredged channels, locks, jetties, canals). While minimizing unintended and adverse impacts from such endeavors is the goal of environmental assessment, there are also environmental enhancements that can be incorporated into the design of projects. When identified early, these potential features are more easily incorporated into the planning process. USACE policy (2009 Campaign Plan, 2002 Environmental Operating Principles) supports the concept of incorporating environmental design features as part of USACE projects, but realities associated with funding policies must also be factored into decisions. The investigation being conducted will (1) identify existing and potential navigation project features designed with the express intent of enhancing environmental benefit, (2) identify laws, regulations, and policies (formulation boundaries) that both support and hinder such design features, (3) identify opportunities for increasing environmental benefits for navigation projects within existing formulation boundaries, (4) propose potential changes to formulation boundaries that would further increase opportunities for environmental benefits, and (5) identify potential areas where research may increase the opportunity to integrate environmental features into future projects.

The objective of this presentation will be to identify ways in which USACE can increase the integration of environmental enhancements into navigation infrastructure projects. The work will identify existing and envisioned environmental enhancements of USACE navigation infrastructure by surveying, interviewing, and engaging key individuals with knowledge of navigation, policy, and funding requirements both within and outside of USACE. This work will further the concepts developed in the 2008 PIANC Position Paper titled Working with Nature. The need for such approaches was also recognized in the US for dredging projects with the 1994 publication of The Dredging Process in the United States: An Action Plan for Improvement, the subsequent 1995 National Dredging Policy, and the establishment of the National and regional dredging teams which have a goal to foster earlier and more effective stakeholder involvement.

Wet Meadow Restoration Demonstration Plots

Presenter: Don Moses, Omaha District

Abstract: As a component of the Western Sarpy/Clear Creek Levee Improvement Project, it is necessary to create 40 acres of wet meadow habitat in order to mitigate 10 acres of wetland impacts caused by levee construction. The restoration site is an abandoned sand and gravel quarry located adjacent to the Platte River near Ashland, Nebraska. Restoration of an abandoned quarry into a wet meadow has never been attempted before in Nebraska. The vegetation, soil type, and hydrology of local native wet meadow sites were researched. Soil samples were obtained from these local native sites and tested for texture, soil chemistry and organic content. The demonstration project was constructed in 2009 in order to determine the optimum combinations of wet meadow seed and hay mixes for varying depths of water. The demonstration site is approximately one acre in size. The site was laid out into 32 test plots. The plots varied in elevation from two feet above to two feet below the targeted average annual water surface elevation.

The San Marcos River: Section 206 on a river of endangered species and invasive aquatic plants

Presenters: Jeff Tripe, Fort Worth District, and Chetta Owens, ERDC-Aquatic Ecosystem Research Facility

Abstract: The San Marcos River emerges from numerous springs originating from the Edwards Aquifer and these clear waters have resulted in a diverse and productive native aquatic plant community, including the endangered aquatic plant species Texas wild rice. In addition to the desirable native plants, 16 introduced aquatic and riparian plant species are known to occur, including East Indian hygrophila, hydrilla, water hyacinth, and the emergent elephant-ear. The Section 206 San Marcos River Restoration Project is a cooperative partnership between the Corps of Engineers (SWF) and the City of San Marcos to incorporate various ecosystem restoration projects within and adjacent to the San Marcos River, Texas. These projects include but are not limited to riparian corridor restoration, in-stream aquatic ecosystem restoration, and wetland enhancement and creation. Planning and implementing invasive plant control and restoration efforts will require preliminary surveys and mapping of existing vegetation. ERDC's Lewisville Aquatic Ecosystem Research Facility conducted a survey (SOG: Surface Observational GPS) on the San Marcos River to determine location and acreage's of introduced and native plants, including all aquatic and riparian species. Survey results will be discussed as well as options for restoration in a river that is home to 5 endangered species.

SESSION I**TIME: Tuesday 8 June, 10:30-12:00****ROOM: Salon 8****TRACK: Planning Community of Practice****TOPIC: Economics and Decision Making****MODERATOR: Todd Boatman, SAM****PRESENTATIONS:*****Bayonne Bridge Air Draft Analysis: Deep Draft Navigation turned Upside-Down******Presenter: Naomi Fraenkel, New York District***

Abstract: The Corps of Engineers and the Port Authority of New York and New Jersey have an ongoing partnership based on the Corps deep draft navigation and environmental restoration missions in New York Harbor. When the Port Authority needed to determine how and when to remedy the channel restriction caused by the land-based Bayonne Bridge, the agency hired the Corps of Engineers for its specialized cost-benefit analysis expertise through the Corps' Intergovernmental and International Services project authority. In this case, the Corps treated the cost-benefit analysis as a deepening upside-down and estimated what the benefits of removal of the obstruction would be on a National Economic Development basis in the form of transportation cost savings derived from the removal of the height obstruction. These NED benefits were then arrayed over the costs of replacing the channel crossing by either modifying the existing bridge, building a new bridge, or constructing a tunnel. The Bayonne Bridge Air Draft study exemplifies a unique application for Corps cost-benefit analysis as well as an advance in Corps planning expertise.

Economic Impact of Louisville District***Presenters: Ken Meffert and Nicolas Luts, Louisville District***

Abstract: The economic significance of the US Army Corps of Engineers is primarily felt through the benefits accrued by projects in its numerous business lines. However, regional impacts are also made through expenditures in construction and operations and maintenance. The identification, estimation and communication of these impacts can often be integral to ensuring stakeholder support for future and ongoing projects. To aid this effort, LRL economists utilized an IMPLAN based I/O model, developed in concert with the Louis Berger Group and IWR, to capture the multiplier effects of its expenditures for design, construction, and operation of both civil works and military projects and those of recreational visitors to its projects. The model calculates direct, indirect and induced job and economic activity impacts for a variety of regions. Outputs from these analyses are then integrated with project benefit information in presentations to stakeholders, including congressional interests. Coordination continues with senior members of the Great Lakes and Ohio River Division Economics Community of Practice and the Inland Navigation Planning Center of Expertise to ensure consistency in how the model is applied across the region.

This presentation will provide an overview of the methods used and will describe results obtained through the analysis.

Stakeholder Assessment of the Effects of Reallocation on NED Recreation Benefits at Chatfield Lake, Colorado Using a Modified Unit Day Value Method

Presenter: Elizabeth Peake, Omaha District

Abstract: Storage reallocation at Chatfield Lake is proposed by 15 water providers to increase sustainable water supplies to partly fill a projected shortfall in meeting growing Denver-area water demand and reduce reliance on non-renewable groundwater. Alternatives considered in detail in Feasibility are reallocation raising lake levels 5 or 12 feet, and no action. Effects of reallocation on recreation benefits were expected to vary by activity, and visitation data is collected by primary activity at Chatfield State Park (SP), which comprises most of the project. Therefore, a Unit Day Value (UDV) analysis was approved for 30 activities, each of which (unlike the entire SP) had under 750,000 visits/year. UDV required significantly less time and funding than other methods. Chatfield recreationists were identified by Corps/SP staff and invited to assign UDV points for each of their activities. 55 recreationist stakeholders and 9 Corps/SP staff attended at least one of three workshops in April 2009, at which in-kind recreation modification plans were presented and the UDV point rating tables (Economic Guidance Memorandum 09-03) were explained. For each activity and alternative, raters assigned points for two timeframes: 1-10 and 11-50 years after reallocation. Cooperating agency staff also observed at the workshops, to inform their collaborative efforts. Written and telephone comments solicited from the recreationists were compiled as an exhibit for the recreation appendix and were provided to cooperating agencies.

Economic Transportation Analysis for the Fargo Metropolitan Study

Presenter: Kevin Bluhm, St. Paul District

Abstract: Detailed Description: St. Paul district economics contracted a large and detailed transportation report to find the total local and regional transportation impacts do to flooding for the with & without project conditions in the Fargo Metro feasibility study. The transportation corridor in the study area includes 2 interstate highways, 4 railroad lines, and a airport. All these facilities are located in the 500 year floodplain and have issues in larger flood events. Multiple issues and several scenarios were worked out to reflect real traffic impacts due to flood fight efforts, clean-up, and community repairs long after the flooding is past. Models were reviewed by area experts to refine and test assumptions. Report is included as an appendix to the economics section in the final feasibility report.

MVP Economics with contractor URS Corporation- Gaithersburg, MD Kevin Bluhm Lead

SESSION II

TIME: Tuesday 8 June, 1:30-3:00

ROOM: Salon 3

TOPIC: Helpful Hints on Washington Level Review

MODERATOR: Jeremy LaDart, HQ

PRESENTATION:

Helpful Hints on Washington Level Review

Presenters: Stacey Brown, Wes Coleman, Harry Kitch, Marianne Matheny-Katz, and Andrea Walker

Abstract: This session is designed for District planners to help them better understand the Washington level review process. It is further intended to help planners understand common policy issues that are raised at various milestones for planning studies – Feasibility Scoping Meetings, Alternative Formulation Briefings, and Civil Works Review Boards. The session will provide helpful hints for the conduct of studies from initiation to Congressional Authorization.

Potential Topics:

- A walk through of Washington Level Review milestones.
- Making the most of early review meetings – by avoiding common policy issues.
- Perspectives from senior reviewers and a Civil Deputy from a Regional Integration Team to help you be better prepared.
- Helpful hints for successful coordination and briefings to ASA(CW) and OMB.

SESSION II**TIME: Tuesday 8 June, 1:30-3:00****ROOM: Salon 4****TOPIC: Climate Change Initiatives****MODERATOR: Rolf Olsen, IWR****PRESENTATION:***Climate Change Initiatives**Presenter: Rolf Olsen, Institute for Water Resources*

Abstract: This session will review some current USACE and interagency climate change activities, including the Response to Climate Change program and the Interagency Climate Change Adaptation Task Force directed by the Council on Environmental Quality. The session will also discuss the recent workshop on nonstationarity and the implications for USACE planning. Other Federal agency activities climate change will also be presented.

Potential Topics

- Review of Response to Climate Change Program – Bob Pietrowsky
- Council on Environmental Quality (CEQ) Climate Change Adaptation Task Force – Bob Pietrowsky or Rolf Olsen
- Workshop on Nonstationarity, Hydrologic Frequency Analysis, and Water Management – Rolf Olsen
- DOI Climate Science Centers and Landscape Conservation Cooperatives – Robin O'Malley (USGS)

SESSION II

TIME: Tuesday 8 June, 1:30-3:00

ROOM: Salon 5

TOPIC: Watershed Policy and Procedures

MODERATOR: Jan Rasgus, HQ

PRESENTATION:

Watershed Policy and Procedures

Presenter: Jan Rasgus, HQ

Abstract: This session will provide an overview of the new Watershed EC 1105-2-411. Discussion will include authorities, challenges and innovations related to Corps involvement in watershed planning and studies. Issues and challenges related to procedures, products, collaboration, and other topics will be presented. There will also be a discussion of forthcoming guidance for Regional Sediment Management.

SESSION II

TIME: Tuesday 8 June, 1:30-3:00

ROOM: Salon 6

TOPIC: Quality Guidance: EC 1165-2-209 and Review Plans

MODERATOR: Stewart McLean, HQ

PRESENTATION:

"Quality Guidance: EC 1165-2-209 and Review Plans"

Presenter: Stuart McLean, HQ

Abstract: This session will provide an overview of EC 1165-2-209 Civil Works Review Policy and the role of the Planning Centers of Expertise (PCXs) in implementing the EC. Discussions will include the requirements of the EC, PCXs roles and responsibilities, review plan requirements, and the ongoing development of review plan guides.

SESSION II**TIME: Tuesday 8 June, 1:30-3:00****ROOM: Salon 7****TOPIC: Mitigation Policy and Activities****MODERATOR: Jeannete Gallihugh, HQ****PRESENTATION:***Mitigation Policy and Activities**Presenter: Jeannete Gallihugh, HQ*

Abstract: It is USACE policy that mitigation planning be an integral part of the overall planning process, and ensures that project-caused adverse impacts to ecological resources have been avoided or minimized to the maximum extent practicable. Remaining, unavoidable impacts are compensated through in-kind mitigation to the extent incrementally justified so that no more than negligible impacts on ecological resources will occur with project implementation. Section 2036 of WRDA 2007 reiterated USACE policies and practices, as well as created some additional requirements for monitoring, interagency consultation, and project tracking. Civil Works guidance on mitigation planning is consistent with the standards and policies of the USACE Regulatory Program for wetlands mitigation and Section 2036 (a) of WRDA 2007.

Policy requires the use of a habitat-based methodology, supplemented with other appropriate information, to describe and evaluate the impacts of alternative plans and to identify the mitigation need of the with-project condition as measured against the future without-project condition. Once a mitigation need has been identified, mitigation objectives must be developed to address the identified losses. The preparation of mitigation plans, including objectives, plan design, determination of success criteria and monitoring needs will be undertaken in coordination with Federal and State resources agencies to the extent practicable. Features of the mitigation plan and how it will be implemented will be identified in the project decision document. Session will allow for a Questions and Answers period.

Potential Topics:

- USACE Civil Works policy on mitigation incorporating WRDA 2007 requirements
- USACE Regulatory Mitigation Rule
- Mitigation planning from a District perspective

SESSION II

TIME: Tuesday 8 June, 1:30-3:00

ROOM: Salon 8

TOPIC: Planning Community of Practice Listening Session

MODERATOR: Sue Hughes, HQ

PRESENTATION:

Planning Community of Practice Listening Session

Presenter: Susan Hughes, HQ

Abstract: Listening Session with Deputy Chief of the Planning CoP and senior Planning staff from headquarters to hear and discuss your ideas for fostering growth and development within the Planning CoP. Emphasis in this interactive session will be on how the Planning CoP leadership can better help you and the format will encourage questions and discussion from the audience.

SESSION III

TIME: Wednesday 9 June, 10:30-12:00

ROOM: Salon 3

TRACK: Systems Approaches

TOPIC: Watershed Planning

MODERATOR: Brian Rast, NWK

PRESENTATIONS:

Restoring Floodplain Function Along the Willamette River and Its Tributaries

Presenter: Chris Budai, Portland District

Abstract: The purpose of this study is to restore natural floodplain function along the Willamette River and its tributaries. The study emphasizes the identification of opportunities for restoration of aquatic and riparian ecosystems, recovery of proposed and listed threatened and endangered species, and improvement of water quality. The Willamette is the 10th largest U.S. river and is a major tributary of the Columbia River. This study is being conducted in phases due to the large size and complexity of the Willamette River Basin. The current study phase involves the feasibility study of floodplain restoration opportunities in the lower Coast and Middle Forks of the Willamette River.

The study is a pilot project to develop the tools needed to more clearly understand the complex and dynamic interaction between the river and its floodplain and to develop restoration alternatives to function in this dynamic environment.

These particular subbasins were chosen because 1) Many opportunities exist below the dams to restore natural floodplain functions, 2) Corps dams and bank protection projects, among other activities, have significantly altered hydrologic and hydraulic conditions, 3) The high percentage of public land ownership in these subbasins increases the likelihood that a cost-effective, integrated restoration plan can be implemented, and 4) There is a high degree of interest in floodplain restoration among stakeholders and potential sponsors in these subbasins.

Development of a Watershed Restoration Plan in an Urbanized Area

Presenter: Andrew Roach, Baltimore District

Abstract: The Anacostia Restoration Plan (ARP) is the product of a two-year planning effort to produce a systematic 10-year restoration plan for environmental and ecological restoration within the entire Anacostia River Watershed. This urban watershed in and around Washington, D.C is highly impervious, highly polluted, and ecologically stressed. One purpose of the ARP is to identify and prioritize specific opportunities for the restoration and protection of the watershed. Specific restoration opportunities within eight categories (stormwater retrofits, stream restoration, wetland creation/restoration, fish blockage removal, riparian reforestation, trash reduction, toxic remediation, and parkland acquisition) were first identified via a desk-top GIS exercises. Nearly all sites were then visited and assessed in the field. For each potential restoration site and strategy, pollutant reduction was calculated, and the project scored and ranked based on over 20 variables. This produced a ranking of potential projects within each of the 15 Anacostia River sub-watersheds. Potential projects were also evaluated watershed wide, with a clustering scheme developed to help jurisdictions and project partners implement all 3,018 potential projects systematically.

This presentation will present an overview of the technical steps (data collection, GIS, modeling) used to develop the restoration strategy for the Anacostia Watershed, as well as a brief discussion of lessons learned.

Upper Mississippi River System Ecosystem Restoration Objectives 2010

Presenter: Chuck Theiling, Rock Island District

Abstract: A “top-down,” system-scale process for ecosystem restoration planning was undertaken to assist regional program managers and individual project teams in developing project objectives. The “top-down” process for the Upper Mississippi River System starts with a vision statement, then a logical hierarchy of a system goal, ecosystem goals, and reach- and system-scale ecosystem objectives. The ecosystem objectives led reach planning teams to identify future restoration project areas. The ecosystem objectives will assist project teams developing project area-specific objectives that contribute to attaining the reach and system objectives. Goals and objectives for condition of the river ecosystem are central to the process, and are logically linked to management actions, indicators of ecosystem conditions, performance criteria describing objectives, monitoring activities, reporting on ecosystem conditions, and learning.

Partners, scientists, policy, and now law emphasize the point that restoration activities must be process- based to achieve system-wide sustainability. Understanding and restoring important ecosystem processes and functions will make the UMRS ecosystem more productive of native life forms and resilient to human and natural disturbances. New information quantifying hydrologic and geomorphic processes was acquired from flood damage reduction and archeological studies and adapted for ecological investigations. Flood stage estimates were converted to inundation layers and geomorphological classifications were unified across four regional investigations. Multiple spatial layers were integrated in GIS for visualization and analysis during the planning process.

Using a Decision Analysis Approach to Assess Alternatives for the Grays Harbor Long-term Management Strategy

Presenters: Jongbum Kim, Larry Scudder, David Michalsen, Steve Martin, Burton Suedel, Cynthia Banks, Environmental Laboratory-ERDC and Seattle District

Abstract: The south and north jetties at the entrance to Grays Harbor, located at the mouth of the Chehalis River, Washington have functioned to secure the navigation channel in this area for over 100 years. Yet the harbor entrance is continually being modified by the jetties. Sustained erosion of the south beach resulted in a breach of the south jetty in December 1993. Previous studies confirmed that erosion of South Beach is likely to continue, but a long-term plan for the south jetty has yet to be developed due to environmental concerns voiced by some stakeholder groups. Decision making for the Grays Harbor Long-term Management Strategy (LTMS) is thus a complex decision making exercise because the stakeholders (1) have different objectives with different priorities and (2) expect different outcomes from management decisions. Furthermore, the system in which decision makers operate is subject to inherent uncertainty associated with management actions. Two important questions in decision making for the project are (1) how do we balance the *many objectives* described in monetary and non-monetary units and evaluate their trade-offs?; and (2) how do we include the *risk and uncertainties* relevant to environmental management that are important to decision makers and stakeholders? We will present how we answered these questions and arrived at a recommend path forward for the Grays Harbor LTMS.

SESSION III**TIME: Wednesday 9 June, 10:30-12:00****ROOM: Salon 4****TRACK: System Approaches****TOPIC: Tools for Ecosystem Restoration****MODERATOR: Jeff Lin, SAW****PRESENTATIONS:*****GIS Based Comparative Sub-watershed Impact Analysis for Ecosystem Restoration in a Watershed Planning Context******Presenter: Rena Weichenberg, New York District***

Abstract: The Bronx River Study presented an opportunity for development of ecosystem restoration within the context of watershed planning. Given the sponsors' interest in water quality improvement, comparison of relative input of sediment, nutrient and pathogen loads; by sub-watershed was critical. All existing data sets and physical models were combined. Using GIS, sub-watersheds associated with each sampling location were identified. Deltas in values between sampling locations were assumed to be based upon loads that entered the river between those points. This linkage provided the basis for identification of sub-watersheds with significant probability of contributing VERY HIGH, HIGH, MEDIUM or LOW loads. This approach was consistently applied to the three loading parameters. For each data set a rank of VERY HIGH, HIGH, MEDIUM and LOW received ranks of 4, 3, 2 and 1 respectively. Ranks from the data sets were added to establish overall loading ranks for each parameter. Data sets were weighted such that rankings were based equally on model output, and actual physical data. Lastly, the three loading maps were integrated into a cumulative water quality loading map which provides the context to potential restoration actions. Using this approach, restoration at sites within a sub-watershed identified as a HIGH contributor may have greater potential of improving the overall watershed than those in a sub-watershed identified as a LOW contributor.

Use of Two-Dimensional Hydraulic Models in Ecosystem Restoration Planning, Upper Mississippi River***Presenters: Jon S. Hendrickson, P.E. and Aaron Buesing, P.E., St. Paul District***

Abstract: Habitat restoration on the Upper Mississippi over the last 20 years has included actions such as island creation, water level management, and secondary channel restoration. Tributary restoration and fish passage may be added to the action list in the future. Planning for these actions often relies on the use of two-dimensional hydraulic models to inform the decision making process.

Criteria describing the effects of physical stimulus on habitat and biota are evolving to become more specific and ecologically based. As this evolution proceeds, the need to simulate not just hydraulics, but also water quality and geomorphology, and the response of biota becomes apparent. Recent advances in two-dimensional modeling, specifically with the continued development of the Adaptive Hydraulics (ADH) model through the System Wide Water Resources Program (SWWRP) is providing project delivery teams the tool to do these simulations. ADH has been used in the planning process to inventory existing conditions, forecast future without project conditions, establish objectives and performance criteria, perform alternative analysis, and to develop reference conditions.

This talk will describe past two-dimensional model uses in the Corps' planning process, and future improvements that are possible with ADH.

Stream Habitat Analysis Package: Choosing One Stream Restoration Alternative Among Many

Presenter: Michelle Gomez, Baltimore District

Abstract: A common challenge of stream restoration planning and engineering is determining which configuration of channel form and structures provides the greatest habitat benefit. The challenge is further complicated because determining benefit is often required before site-specific data (bathymetry, animal movement, etc.) are collected. We used the Stream Habitat Assessment Package (SHAPE) to create 3D mesh representing channel form that included structures such as double wing deflectors, rock sills, step pools, overflow areas, and outlet protection structures based on a 10% design. Using this mesh, a 3D hydrodynamic model provided information on hydraulic pattern resulting from the interaction of water movement over the channel bathymetry. We then analyzed hydraulic pattern using Eulerian-Lagrangian-Agent Methods (ELAMs) to evaluate two habitat occupancy strategies (place-searching or migratory versus place-specific or rearing). Our results indicate the five restoration alternatives for Cameron Run may provide different benefits depending on the number and placement of structures, structure type, and fish behavior but that one alternative was superior for the discharge that was simulated. The analysis allowed us to recommend one alternative over the others. SHAPE allows simulation of stream restoration projects from information available for most streams around the country (aerial photographs, discharge, cross sections) making it widely applicable. SHAPE and ELAMs also provide a representation of rivers that can be related to the principals of fluid dynamics, geomorphology, and animal sensory biology. Simulations developed using SHAPE and ELAMs are thus subject to fewer assumptions than current state-of-the-practice approaches that rely on habitat units or weighted usable areas and therefore may better serve the plan formulation and plan selection in a feasibility study. There is uncertainty if this process would lend itself to benefits calculation. There may be modifications of other processes which could augment SHAPE and ELAM to make them more useful for this purpose.

KEYWORDS: Ecological modeling, planning, engineering design, movement, ELAM

Application of the Comprehensive Aquatic Systems Model (CASM) to Lake Texoma, Oklahoma and Texas

Presenter: Gerard A. Clyde, Jr., Ph.D., Omaha District

Abstract: The Comprehensive Aquatic Systems Model (CASM) is a complex bioenergetic aquatic system model that considers water chemistry characteristics, spatial and temporal scales, and food web structures. In 2006 the Assistant Secretary of the Army (Civil Works) directed the Tulsa District to re-evaluate the Area VI only portion of the authorized Red River Chloride Control Project in southwest Oklahoma. The CASM was selected to assess the cumulative environmental impacts (risks) of reductions total dissolved solids (TDS) in Lake Texoma on food-web dynamics within the reservoir. Additionally, the CASM was calibrated to assess the impacts of reduced TDS in conjunction with observed environmental variability and longer-term losses of reservoir capacity from sediment transport into the reservoir.

SESSION III

TIME: Wednesday 9 June, 10:30-12:00

ROOM: Salon 5

TRACK: Risk Informed Decision Making

TOPIC: Innovative Analytical Procedures & Tools

MODERATOR: Jeremy Weber, NWD

PRESENTATIONS:

*Tool for Analysis of Non-Structural Alternatives (TANA):
An Application of Risk Analysis to Non-Structural Measures*

Presenters: Keven Lovetro and Brian Maestri, Memphis District

Abstract: New Orleans District developed a model, Tool for Analysis of Nonstructural Alternatives, or TANA, which can be used to quantify the uncertainty implicit in the analysis of two nonstructural flood damage reduction options: structure raising and buyouts. The user can assign a probability distribution to the key input variables used in the calculation of the benefits and costs. The input variables include stage-frequency relationships, depth-damage relationships, structure valuations, contents-to-structure value ratios, first floor elevations, structure raising costs, and acquisition costs. The model can then be used to quantify the uncertainty surrounding the without-project damages, the benefits attributable to the nonstructural options, and the costs of these measures. Finally, the model can be used to compare the benefits and costs of nonstructural alternatives at the level of the individual structure.

In the following presentation, we will identify the input data required for the TANA model. We will then describe the statistics used to identify the uncertainty surrounding the output variables. Finally, we will discuss the importance of analyzing non-structural alternatives using risk analysis in flood risk management evaluations.

Fly Through Flooding

Presenters: Craig Newcomb and Kevan Schneidmiller, Walla Walla District

Abstract: Flood elevation, cross sections, water depths, and other data don't always bring the message across. Visualization of a flooded neighborhood helped the sponsor bring the message to their stakeholders. Quick and at low cost method using available tools and software can help the Corps provide value to sponsors as they try to bring awareness to watershed users of the threat of flooding. Walla Walla District Planning and Hydrology partnered with Sponsors to help bring the message to residents that flooding threat is real, and it will encompass their neighborhoods. Google Earth Pro, and H&H data provided an inexpensive tool to provide 3-D fly-through video's for presentation at public meetings. The same methods have also been used for Dam Safety presentations, both within the Corps and with public and Stakeholders. As little as 4 hours work and \$400 software provide video fly through of the flood plain that can be burned to cd, stored to a hard drive, or posted to http site.

Craig and Kevan's presentation will provide the steps that anyone can use to provide service and tools that add value to Corps products and are especially useful to provide real world interpretation to sponsors and stakeholders.

***Implementing Non-Structural Flood Damage Reduction Alternatives Under the Corps of Engineers' Public Law 84-99 Authority:
The Louisa County, Iowa, #11 Levee District***

Presenter: Jerry Skalak, Rock Island District

Abstract: Recurring significant flood events and resultant physical damages to levees throughout the Midwest region have increased interest in implementing non-structural alternatives to levee repairs. Public Law 84-99 (P.L. 84-99) provides the Corps of Engineers with authority and responsibility for the repair of flood damaged levees enrolled in its levee program or to implement non-structural alternatives to those structural repairs. Following the Midwest floods of 2008 the Iowa Interagency Levee Work Group, which subsequently evolved into the Iowa Silver Jackets Flood Risk Management Team, identified and coordinated a precedent setting non-structural alternative to full repair of the Louisa County, Iowa, #11 Levee District's levee system. This non-structural alternative consisted of leaving five breaches in the lower end of the levee system open while repairing two breaches in the upper end of the system. Implementation of this alternative will result in nearly 3,200 acres of previously isolated floodplain being permanently reconnected with the Iowa River as well as increased flood storage benefitting down stream interests. The remaining increment of repaired levee will continue to provide flood deflection benefits for a major county road and approximately 400 acres of agricultural lands within the levee district.

Visualizing Coastal Change: Two Examples Using CanVis Software

Hansje Gold-Krueck and Jeffery E. Adkins, NOAA Coastal Services Center

Abstract: Can Vis is a free software package that makes it easy for resource managers to edit their own photographs and other images to help their audiences visualize the impacts of natural and human-induced change. This session shows how CanVis was used to illustrate the potential impacts of sea level rise in Washington's Puget Sound and in Charleston, South Carolina. Coastal professionals working in the Puget Sound have used CanVis to help audiences visualize the impacts of sea level rise using photographs of existing seawalls and new seawalls that have been "added" to specific areas. In Charleston, users are shown the simulated impacts of sea level rise on the historical Battery located at the southeastern tip of the peninsula. CanVis was developed by U.S. Department of Agriculture (USDA) National Agroforestry Center, who partners with the National Oceanic and Atmospheric Administration (NOAA) Coastal Services Center to provide the software to coastal professionals. NOAA's Coastal Services Center also provides free Web-based training in the use of CanVis and maintains an online library of coastal symbols and figures that makes it even easier for users to develop images to illustrate the visual impacts of alternatives associated with a wide range of resource management issues including storm surge, sea level rise, living shorelines, offshore wind turbines, dock placement, and land use change.

SESSION III

TIME: Wednesday, June 9, 10:30-12:00

ROOM: Salon 6

TRACK: Collaborative Planning

TOPIC: Applications in Water Supply

MODERATOR: Lanora Wright, SWD

PRESENTATIONS:

Collaboration with Stakeholders in an Increasingly Challenging Water Resources Environment

Presenters: Christina Ostrander and Zach White, Kansas City District

Abstract: The Corps of Engineers operates six federal reservoirs in the Kansas River Basin and is working to support the Kansas Water Office (KWO) in their efforts to extend the usable life of these reservoirs. The KWO has developed the Reservoir Sustainability Initiative to highlight the existing condition of the federal reservoirs, address critical sedimentation issues, and develop a long-term plan to extend the life of the reservoirs.

The KWO and the Kansas City District have effectively collaborated to leverage several Corps programs to conduct studies that provide beneficial information to support the planning needs of the KWO in the Kansas River Basin. The Corps of Engineers participation and expertise is one of the keys toward meeting the short-term and long range planning goals for the state.

The presentation will discuss the challenges with participation including the scoping process, leveraging District capabilities, recognizing opportunities, and an overview of the variety of studies being implemented and how they fit into the KWO planning objectives. Some of the limitations and challenges of participation from the federal level and the potential for future collaboration to further a comprehensive watershed plan will be discussed.

Successful Collaboration for Water Supply Projects

Presenter: Gwyn M. Jarrett, Omaha District

Abstract: “Whiskey’s for drinkin. Water’s for fightin.” said Mark Twain. A critical water shortage is looming in the South Platte River Basin where the population is expected to double by 2050. Multi level agency officials are aggressively seeking out practical solutions to meet future water demands. Chatfield Water Storage Reallocation Project exemplifies a challenging yet successful coalescing of county, city, state and federal representatives, fifteen water users and special interest groups to work toward a solution attempting to reduce future water pressures. The reallocation would occur in the existing federal Chatfield Reservoir complex. The \$5,750,000 cost shared study is sponsored by the Colorado Water Conservation Board (CWCB). Its end product is a GI Feasibility Study/Environmental Impact Statement. Unique to this project, is the sponsor’s commitment to 100% of implementation costs.

This presentation will discuss the process CWCB used to determine the water users, designing a plan for dividing up water supply, and obtaining project commitment and financial support. The Corps use of “technical advisors” and how the Economic and Environmental Principles and Guidelines promote synergism will also be discussed. In conclusion, examples of maintaining group momentum while confronting political hurdles, policy issues and funding considerations related to economic, environmental and social impacts will be considered.

Multi-Agency Collaboration for the Protection of a Tribal Water Supply

Presenter: Eric Lynn, Kansas City District

Abstract: A unique partnership of Federal agencies has resulted in the maximum application of government funds to protect a Tribal water supply. The Kickapoo Tribe in Kansas relies upon the Delaware River as their sole source of drinking water. Erosion of the river bed and banks and damages from flooding are threatening the stability and long-term viability of their water treatment plant's concrete weir intake structure. Loss of this structure would cause a critical public health emergency for the Tribe and jeopardize the services they provide to the local community. Examination of the repair needs determined that the total project scope was beyond the authority and capability of a single Federal agency. The U.S. Army Corps of Engineers, Kansas City District, developed a collaborative partnership with the Tribe, the Federal Emergency Management Agency, and the Indian Health Service, that has resulted in a phased approach to stabilize and protect this critical piece of infrastructure. Corps participation is being achieved through Section 14 Emergency Streambank Stabilization under the Continuing Authorities Program. This innovative stakeholder partnership will ensure the delivery of an essential and sustainable water resource solution to protect the current and future water supply needs of the Kickapoo Tribe in Kansas.

Ecosystem Restoration in the Sonoran Desert – The Quest for Water

Presenter: Richard Legere, Los Angeles District

Army Corps of Engineers projects are inextricably linked to our watercourses through the authorities granted by Congress. In most of the U.S., this link virtually assures a reliable source of water for ecosystem restoration projects. Plan formulation in these areas tends to revolve around funding, land use constraints, and desires of the cost sharing sponsor(s). However, in Arizona's Sonoran Desert, water availability becomes a major planning constraint. In this arid environment, water demand exceeds supply, and thousands of claims to often-nonexistent water await adjudication in the State courts. Laws regulating appropriative water rights generally consist of two broad tenets: "first-in-time, first-in-right," and "use it or lose it." Given these tenets, ecosystem restoration projects have little chance of competing with long-established agricultural, mining and livestock interests for a reliable water supply. Arizona's water supply is harnessed almost to the breaking point by groundwater overdraft, dams, canals and diversions. These actions are the primary reason for the loss of the riparian areas needing restoration. We face the challenge of allocating large volumes of water for restoration projects, while ensuring that sufficient water is available to support future population growth. This presentation will briefly examine the water availability and management issues that Arizona's Corps planners must consider, and then review some of the creative ways that we can stretch our meager water supply to achieve ecosystem restoration.

SESSION III

TIME: Wednesday 9 June, 10:30-12:00

ROOM: Salon 7

TRACK: Collaborative Planning

TOPIC: Innovations and Lessons Learned From Collaboration

MODERATOR: Rhiannon Payne, MVR

PRESENTATIONS:

Lessons Learned from Regional Planning Efforts for Ecosystem Restoration: Louisiana Coastal Area, Convey Atchafalaya River Water to Northern Terrebonne Marshes (LCA-ARTM)

Presenters: John Peukert, St. Louis District, Sean Mickal, New Orleans District, Kip Runyon and Donald Duncan, St. Louis District

Abstract: The LCA-ARTM Study Area comprises approximately 1000 square miles (~660,000 acres) in Southern Louisiana in the vicinity of the City of Houma and Terrebonne Parish. The study also includes the evaluation of Multipurpose Operation of Houma Navigation Lock for environmental benefits, which is part of the Morganza to the Gulf coastal flood risk management project. The authorizing language of the LCA-ARTM study requires the Secretary of the Army to submit one feasibility report to Congress on the project by December 31, 2008 and a Chief's Report by 31 December 2010. This compressed schedule required a unique and challenging ecosystem restoration planning effort with overall program control in the New Orleans District and the bulk of the planning and technical efforts being carried-out by a St. Louis District project delivery team. The lessons learned from this study effort have lead to valuable knowledge on planning in a regional context. This presentation will briefly discuss the planning efforts to date and share pros and cons of regional planning work load sharing.

Interagency Collaboration in the Columbia Basin Fish Accords

Presenter: Robert Willis, Northwestern Division

Abstract: In 2008, the Corps, Bonneville Power Administration, and the Bureau of Reclamation (the Action Agencies) entered into Memoranda of Agreement with several Tribes, the Columbia River Inter-Tribal Fish Commission, and the States of Idaho and Montana; followed in 2009 by an agreement with the State of Washington that focuses on estuary restoration. These historic and unprecedented agreements address direct and indirect effects of construction, inundation, operation and maintenance of the Federal Columbia River Power System (FCRPS) and Reclamation's Upper Snake River Projects on Columbia River Basin fish resources. The Action Agencies and the Tribes intend that these Agreements provide benefits to all the Parties, resolving issues regarding Action Agencies' ESA compliance for the FCRPS and Upper Snake Projects, and with the Pacific Northwest Electric Power Planning and Conservation Act and the Clean Water Act; addressing the Parties' mutual concerns for certainty and stability in the funding and implementation of projects benefiting fish affected by the FCRPS and Upper Snake Projects, affirming and adding to the actions proposed in the draft FCRPS and Upper Snake Biological Opinions; and fostering a cooperative relationship in implementing the mutual commitments in these Agreements. The Columbia Basin Fish Accords, as they have become known, involved over two years of negotiations with multiple Federal agencies and multiple Sovereign nations. This presentation will discuss how they are a unique example of very complex interagency collaboration, entailing regional public involvement periods for the Action Agencies and internal votes for each Tribe's membership, and examine the lessons learned.

Collaborative Planning of Bull Shoals Lake Water Supply Storage Study

Presenter: Renee S. Wright, Little Rock District

Abstract: Presented with a challenging opportunity to resolve the highest priority of the Arkansas Department of Health, the Little Rock District's study team developed a streamlined process to complete a reallocation report and environmental assessment in one year. The twenty separate low-income communities served by the Ozark Mountain Regional Public Works Association (OMRPWA) in central Arkansas are currently supplied from groundwater sources contaminated with radium, fluoride and hydrogen sulfide. The communities' only feasible option for obtaining a clean source of water is to switch to an existing surface water reservoir, Bull Shoals Lake. The cost of developing such a supply had been prohibitive until the American Recovery and Reinvestment Act (ARRA) of 2009 made \$56 million available through the USDA's Rural Development program. To secure these funds, OMRPWA must first have a water storage agreement with USACE by August 2010. The study began in the summer of 2009 and a milestone schedule was developed using the finish date of August 2010 and working backwards. The district developed a collaborative, streamlined study plan that included early public input, transparent communication among stakeholders, phased ATR of report sections, and concurrent MSC and HQ review at study milestones. Aggressive coordination among the district's study team has facilitated responses to unforeseen obstacles such as the need for geotechnical testing at the dam site.

Lessons Learned in Collaboration Between Federal Agencies: American River Watershed, CA: Folsom Dam Joint Federal Project

Presenters: Miki Fujitsubo and Jane Rinck, Sacramento District

Abstract: The American River Watershed Folsom Modification and Folsom Dam Raise Projects in California presented a unique opportunity to collaborate with another Federal Agency, the U.S. Bureau of Reclamation (Reclamation), in addition to State and local sponsors to address both the significant flood risk of the Sacramento area and the dam safety risk at Folsom Dam. The Corps' Folsom Modification and Folsom Dam Raise projects and Reclamation's safety of dams program through a convergence of timing and opportunity were able to collaborate to create the "Joint Federal Project (JFP)." This cooperative effort focused on expedited corrective action to (1) address risks identified with the structural integrity of Folsom Dam, (2) incrementally improve the flood risk management capacity, and (3) upgrade security at the Folsom facility. The JFP includes flood risk management components that the Corps will design and construct and dam safety and security components that Reclamation is constructing at the Folsom facility to address the significant flood risk to the Sacramento Area. This unique effort involved collaborative planning efforts, joint NEPA/CEQA documentation, and collaborative design and construction efforts resulting in a compressed completion schedule of the planning, engineering, and environmental documents in less than 18 months.

This presentation will provide a brief overview of the project and highlight some of the personal lessons learned from a planning and environmental perspective, and the continued challenges during the JFP design and construction.

SESSION III

TIME: Wednesday 9 June, 10:30-12:00

ROOM: Salon 8

TRACK: Planning Community of Practice

TOPIC: New Tools for Evaluating Marine Environments

MODERATOR: Candida Bronson, SAJ

PRESENTATIONS:

Potential Impacts of Sea Level Rise on Storm Surge in Southern Louisiana

Presenters: Mary Cialone, Coastal and Hydraulics Laboratory, Engineer Research and Development Center

Abstract: The design elevation of coastal Louisiana flood protection levees are based on many factors including analysis of storm surge levels, waves, wave run up, tides, and anticipated sea level rise (SLR). Historically, SLR estimates were linearly added to design water levels, but this approach can over- or under-estimate the effect of SLR on total water level, thereby making the levee unnecessarily high or causing flooding, respectively. In order to evaluate the effect of SLR on total storm surge, numerical modeling of synthetic storms of varying intensity was employed to estimate the surge sensitivity to three water levels: present and two estimated future SLR conditions. SLR will impact the type of viable wetland vegetation in this micro-tidal environment, therefore roughness values were also modified in the model simulations. The presentation will focus on storm surge response to altered water level, vegetation type, and frictional resistance. Results indicate that peak water levels are generally higher for SLR simulations, but it is not a linear process. Some “pocket” areas experience amplification in peak surge and other areas decrease slightly. Surge propagation over broad, shallow, wetland areas of moderate peak surge are highly sensitive to SLR, with surge levels increasing more than the SLR itself. Deeper water depths due to SLR and the degradation of the wetlands appear to increase the surge propagation speed and allow greater inundation.

Airborne Sensor Fusion for Coastal Environmental Applications

Presenter: Molly Reif, ERDC

Abstract: The U.S. Army Corps of Engineers (USACE) and the U.S. Naval Oceanographic Office jointly operate a program dedicated to the collection of high-resolution airborne lidar and hyperspectral imagery in support of planning, engineering, construction, operation, and maintenance activities along U.S. coastlines. Using an integrated airborne sensor suite, topographic and bathymetric lidar and aerial and hyperspectral imagery are processed into a variety of Geographic Information Systems (GIS) data products. These include 1-meter Digital Elevation Models (DEMs), 1-meter bare earth DEMs, true color orthorectified aerial image mosaics, pre-processed hyperspectral image mosaics, basic land cover classifications, and zero-contour shoreline vectors. Several studies have been conducted in response to an identified need to expand the use of data resulting from this USACE/NAVY program to support environmental project work at USACE coastal district offices. This presentation will illustrate environmental application and product examples, such as mapping invasive species at the Kennedy Space Center, identifying stamp sands containing copper and other toxic metals along Lake Superior, discriminating submerged aquatic vegetation species in a dredged New England harbor, and examining post-Katrina elevation and land cover changes along the south shore of Lake Pontchartrain. The presentation will also discuss planning activities with the coastal districts including mission planning and more specifically

working directly with Environmental and Planning Chiefs to increase their awareness of environmental products and applications, address environmental priorities, and initiate collaborations.

Use of “Environmentally Friendly Blasting” to Complete a Previously Unfinished Harbor Deepening Project in Miami Harbor, FL and the Implications for Future Blasting Projects Throughout the Nation.

Presenter: Terri Jordan, Jacksonville District

Abstract: In 1990, Congress authorized the deepening and expansion of the Miami Harbor, Port of Miami, Miami-Dade County, Florida. Part of the project included deepening of the Dodge Lummus Island Turning Basin and Fisherman's Channel to -42'. The Port of Miami (Port) previously attempted to complete the project without underwater blasting. The contractor and subsequent surety company were unable to successfully complete the authorized work primarily due to the limestone bedrock that was resistant to dredging. The District determined that blasting would be required as a construction technique, and Miami Harbor is routinely occupied by a number of marine species protected under the Endangered Species Act of 1973 including the Florida manatee and marine turtles. As a result the Corps initiated consultation with the National Marine Fisheries Service (NOAA Fisheries) and the U.S. Fish and Wildlife Service under Section 7 of the Endangered Species Act was required. Also a population of bottlenose dolphins protected under the Marine Mammal Protection Act had been documented transiting through the Port and could be affected by the proposed blasting. This presentation reviews the analysis of the results from marine mammal monitoring; an overview of acoustic and pressure measurement data collected during construction; and potential implications for upcoming port construction activities using blasting as a construction technique in Florida by the Jacksonville District or elsewhere by others.

Potential Use of Sonar and Night Vision Technologies to Protect Manatees and Sea Turtles in the Vicinity of Clamshell Dredging Operations

Presenter: Paul Stodola, Jacksonville District

Abstract: Various measures have been traditionally implemented to protect manatees and sea turtles in the vicinity of clamshell dredging operations throughout the state of Florida. These actions have included dedicated marine animal observers, illumination for nighttime operations, no wake restrictions, etc. However, many of these measures are only effective when there is good visibility and when animals are at or near the surface of the water. Night vision technologies, such as infrared cameras and light intensifiers, can be used by observers to better identify and track manatee and sea turtle movements. Like other protection measures, the effectiveness of night vision technologies is also limited to when the animals are at or near the surface. Sonar has the potential to detect marine animals throughout the water column. Recent advances in sonar technology suggest that it may also be possible to classify, or identify, targets of interest. Classification of objects moving through the work area is critical because we want to be able to differentiate between manatees, sea turtles and other marine animals such as schools of small fish, sharks, rays, dolphins, etc. Accurate classification would allow us to temporarily suspend dredging operations when appropriate, and avoid unnecessary shut downs when objects such as schools of fish are moving through the work area. We plan to conduct sonar demonstrations in the near future.

SESSION IV

TIME: Wednesday 9 June, 1:30-3:00

ROOM: Salon 3

TOPIC: Lesson Learned from Policy Review

MODERATOR: Lee Ware, HQ

PRESENTATION:

Lessons Learned from Policy Review

Presenter: Lee Ware, HQ

Abstract: This session is designed for district planners to better understand the concerns identified through policy compliance review for various project purposes and to help them be better prepared for report preparation and policy review meetings. The session will be divided into two parts with the first half reviewing lessons learned relative to the six steps of the planning process for ecosystem restoration projects. This includes numerous examples and case studies. Major “Take Away Points” from the ecosystem restoration session include the need for a thorough explanation of problems and opportunities and setting the stage in terms of the causes of environmental degradation; the importance of which ecological outputs are selected and measured, not just for CE/ICA, but also to demonstrate the “worth” of the investment; describing the significance of environmental outputs; the need to formulate plan increments and showing the benefits of each increment; and finally the importance of “Telling the Story” in alternative plan selection and justification. The second half of the session will focus on helpful lessons from review of planning reports on other project purposes including deep draft navigation, coastal storm risk management, and flood risk management. For example, topics will include: developing defensible forecasts of future without-project conditions based on reasonable assumptions and empirical data; supporting project formulation using incremental analyses; and getting the cost sharing right for your tentatively selected plan. Time will be allotted for your questions and discussions.

Reviewers from HQ Office of Policy review host an informative discussion on common, significant issues that have come up during policy compliance review, ways to improve analyses and reporting, and tips to PDTs for successful planning of various type projects.

SESSION IV

TIME: Wednesday 9 June, 1:30-3:00

ROOM: Salon 4

TOPIC: Flood Risk Management Forum

MODERATOR: Peter Rabbon, IWR

PRESENTATION:

Risk Management, A Shared Responsibility

Presenters: Pete Rabbon, IWR/HQ; Larry Larson, Association of State Floodplain Managers; Susan Gilson, National Association of Flood and Stormwater Management Agencies; Federal Emergency Management Agency, Department of Homeland Security(TBA); Jennifer Dunn, IWR; Brandon Brummett, LRL; Jeff Morris, SAS; Tom Oswald, Iowa Homeland Security and Emergency Management Division.

Abstract: USACE established the National Flood Risk Management Program (FRMP) in May 2006 to integrate and synchronize USACE flood risk management programs and activities, both internally and externally, with a vision to lead a collaborative, comprehensive and sustainable national flood risk management program to improve public safety and reduce flood damages to our country. The program has been identified as one of the top seven Civil Works actions for 2010. This presentation provides an overview of the program status, accomplishments, and way ahead, including the Executive Order 11988 revision, co-leadership of the Federal Interagency Floodplain Management Task Force, collaboration via Silver Jackets, the California Framework Agreement and creation of the Regional Flood Risk Management Team in the Midwest.

Management of the nation's flood risk is truly a shared responsibility; managing risk must address managing both *floodwaters* to reduce the *probability* of flooding (i.e. structural approaches such as levees and dams) and *floodplains* to reduce the *consequences* of flooding. As USACE transitions from the concept of flood damage reduction to a broader focus on flood risk management, collaboratively engaging our partners with roles, responsibilities, and authorities in floodwater and floodplain management is critical. In order to leverage the successes of Map Modernization, FEMA has developed Risk Mapping, Assessment and Planning Program (Risk MAP). Risk MAP combines flood hazard mapping, risk assessment tools and Mitigation Planning into one seamless program with the vision to work collaboratively with State, local, and tribal entities to deliver quality data that increases public awareness and lead to action that reduces risk to life and property. Partner perspectives on shared responsibility will be discussed in a panel format.

This session will also include a panel of select successes in collaborative flood risk management. As the state-level implementation tool for the FRMP, Silver Jackets teams are led by state priorities to manage risk throughout the flood risk life-cycle. As no single agency can provide the complete solution, Silver Jackets teams serve as the forum where the state, Federal, and sometimes local, tribal and non-governmental organizations come together to collaboratively apply their resources. Indiana and Georgia Silver Jackets teams will share their experiences in leveraging USACE programs. The Regional Flood Risk Management Team is another example of collaborative teaming to addresses flood risk. Through partnership with Illinois, Iowa, Minnesota, Missouri and Wisconsin, USACE and many additional Federal agencies integrate pre-flood mitigation with a long-term strategy to plan and implement pre- and post-flood emergency actions, while developing promising nonstructural alternatives and other flood risk mitigation actions recognized to reduce future flood risk within the region.

SESSION IV

TIME: Wednesday 9 June, 1:30-3:00

ROOM: Salon 5

TOPIC: Policy Update: Model and Certification and IEPR

MODERATOR: Jeremy LaDart, HQ

PRESENTATION:

Policy Update: Model Certification and IEPRs

Presenter: Jeremy LaDart, HQ

Abstract: This three part session will focus upon lessons learned in assuring quality of Planning Models, processing Independent External Peer Reviews (IEPR), and the preparation of corporate responses to IEPRs. This session will include leaders from the Planning Centers of Expertise, policy analysts, and field practitioners.

SESSION IV

TIME: Wednesday 9 June, 1:30-3:00

ROOM: Salon 6

TOPIC: Planning from Non- Federal Perspectives

MODERATOR: Zoltan Montvai, HQ

PRESENTATION:

Planning from Non-Federal Perspectives

Presenter: Zoltan Montvai, HQ

Abstract: Partnership and collaboration in USACE water resources planning take place at many different levels. This session will address the experiences, observations, insights and lessons learned of several non-Federal practitioners who have been highly involved in addressing water resources planning in partnership and collaboration with the Corps.

Session will include the presentations, a panel discussion and time for questions and answers from the audience.

SESSION IV

TIME: Wednesday 9 June, 1:30-3:00

ROOM: Salon 7

TOPIC: Planning in International Settings

MODERATOR: Bob Pietrowsky, IWR

PRESENTATIONS:

International Activities and their Influence on USACE Domestic Planning

Presenter: Bob Pietrowsky, Institute for Water Resources

Abstract: The three presentations during this session will highlight some of the international planning activities managed by IWR and HQ, which can enrich domestic planning activities by augmenting the knowledge base, processes and tools available to planners and expanding partnerships and collaborative efforts.

IWR International Activities & ICIWaRM. The USACE Institute for Water Resources is establishing partnerships and working world-wide with agencies and governments to promote integrated water resources management. Recently, IWR led efforts with the Office of the Assistant Secretary of the Army (Civil Works), the U.S. Government and the U.S. Mission to UNESCO to establish the International Center for Integrated Water Resource Management (ICIWaRM) as a global water center for the advancement of the science and practice of integrated water resource management (IWRM) around the globe. In November 2009, ICIWaRM became the first UNESCO Category II Water Centre in North America within the UNESCO International Hydrological Programme (IHP) water network. The water science node is led by an academic consortium headed by the University of Arizona, and includes partnerships with the Universities of New Hampshire, Oregon State, Florida International, and Colorado State. ICIWaRM's structure capitalizes on the diverse capabilities and broad technical resources of many U.S. institutions currently engaged in the development and application of IWRM methods and their transfer to developing nations and nations in transition around the globe. The Center's initial emphasis is in Central and Latin America and Africa.

International Lake Ontario-St. Lawrence River & International Upper Great Lakes Studies. Two recent IJC Great Lakes studies have resulted in major advances in planning, evaluation and hydrologic and hydraulic analysis tools - and especially in methods for dealing with climate uncertainty in real decision making settings. The Great Lakes are treated as unique but very large reservoirs. Operating rules for those reservoirs affect a huge economy centered on the Great Lakes. The interests of 8 states, two large provinces in Canada and those of both nations are affected with each decision. So there is a need for comprehensive analysis; considerable collaboration, public involvement and consultation at many levels and extraordinary levels of technical peer review of each of the numerous technical studies undertaken. Fortunately, the studies have available to them among the best government laboratories of the Corps, NOAA, USGS and Environment Canada, as well hundreds of well-regarded academicians.

Initiated in 2001, the International Lake Ontario-St. Lawrence River Study (ILOSRLR) is the largest comprehensive study of Great Lakes water level management ever undertaken for the International Joint Commission (IJC); a US/ Canadian Commission established by governments to resolve water disputes between the two countries. The five-year, \$20 million study developed alternative outflow regulation plans for Lake Ontario using shared vision planning principles with stakeholder input and technical assistance from over one hundred scientists from agencies and academia around the Great Lakes. Drs. Eugene Stakhiv and Tony Eberhardt, of IWR's International Water Resources Group were US Co-Director and US Co-Manager for the Study which was completed in 2006. The successful completion of the ILOSRLR Study led the IJC to select IWR to

again direct and manage a similar comprehensive study of upper Great Lakes water levels. The International Upper Great Lakes Study (IUGLS) was initiated in 2007, to investigate possible physical changes in the St. Clair River, such as dredging for commercial navigation that may have been the cause of declining water levels on Lakes Michigan, Huron and Superior. Improvements to the outflow regulation plan for Lake Superior are also being developed. Shared vision planning is being employed to consider alternatives subjected to various hydrologic scenarios including long-term climate change and adaptive management strategies are being developed. The \$17 million study will be completed in 2012.

USACE Joint Efforts with The Nature Conservancy. The Corps of Engineers (Corps) and The Nature Conservancy (TNC) have been partnering for close to ten years on ecosystem restoration projects, environmental flow management, and training and software development. During this time, the majority of the work has been conducted domestically. In the past few years, USACE has been working in partnership with TNC to advance work on the Yangtze River in China, the Magdalena River in Colombia, and the Zambezi River Basin in SE Africa. Both organizations recognize the significance of these river basins and the need to advance integrated river basin management on systems with global relevance. Collaboration and working with stakeholders is a consistent theme throughout this unique public-NGO partnership, which allows us to jointly bring a unique perspective to host nations and improve the sustainability of these river systems.

SESSION IV

TIME: Wednesday 9 June, 1:30-3:00

ROOM: Salon 8

TOPIC: R&D Roundtable and Listening Session

MODERATOR: Rennie Sherman, HQ

PRESENTATION:

R&D Roundtable and Listening Session

Presenter: Rennie Sherman, HQ

Abstract: Representatives from ERDC, IWR, HEC will discuss different aspects of the Civil Works research process and program, including tech transfer and communications.

Potential Topics:

- How does the R&D process work
- How can you get the most from Corps R&D resources
- What can different labs and research programs offer to your studies and projects
- How can you be a research participant and bring a field perspective to research
- What is a RARG??
- How can R&D meet field needs most effectively?

SESSION V**TIME: Wednesday 9 June, 3:30-5:00****ROOM: Salon 3****TRACK: Systems Approaches****TOPIC: Tools for Watershed Planning****MODERATOR: Kevin Knight, IWR****PRESENTATIONS:*****Using Pair Wise Comparison and Measure weighting to screen large initial arrays of alternatives******Presenter: Kathleen Bergmann, Los Angeles District***

Abstract: Budget realities and tight schedules required a logical and repeatable way to screen the qualitative analysis of large initial arrays of alternatives two Southern California restoration studies of highly modified systems: the Big Bear Lake, California Ecosystem Restoration and the Los Angeles River, California Ecosystem Restoration Studies. The number of potential measures proposed to address the ecosystem degradation problems for each study resulted in an unmanageable array of alternatives. Study budgets and time constraints would not allow for the habitat assessment and cost analysis of all of these alternatives for an incremental cost analysis. The Lead Planner and study team needed to reduce the number of proposed alternatives, make sure alternatives met objectives, and consider other factors to screen the alternatives to a more manageable preliminary array for analysis using a logical, repeatable method. The methods chosen were a pair wise comparison by the PDT and Habitat Team to weight objectives, and an objectives-measures matrix helped to rank each measure for its impact on objectives. Scoring the results helped to visually weight alternatives and help narrow down the larger array to a smaller preliminary array of alternatives for each study.

Multi-objective Reservoir Optimization for the Columbia River – An Application of HEC-ResPRM***Presenters: Sara M. O’Connell and Leila Ostadrahmi, Hydrologic Engineering Center, Mark Parrish, Hydropower Analysis Center***

Abstract: The U.S. Army Corps of Engineers and the Bonneville Power Administration are currently in discussion with British Columbia Hydro regarding the future of the 1964 Columbia River Treaty. Flood control and hydropower operations were the focus of the Treaty, but many other water demands are of concern to the system. Review and refinement of the operating strategies is needed to support the Treaty study and to better meet increasing pressures on the system.

The Hydrologic Engineering Center (HEC) is conducting research on development of enhanced procedures for deriving reservoir system operating rules using simulation and optimization. Reservoir optimization offers the opportunity to investigate operating policies that best meet system goals and priorities and demonstrate trade-offs between different objectives. One relatively new tool available to inform management decisions and improve operating policies is HEC-ResPRM (Prescriptive Reservoir Model). HEC-ResPRM is multi-reservoir system optimization software that can be used to develop and support optimal operational strategies that meet a variety of objectives over time. Deterministic network-flow optimization is used to “prescribe” optimal values of flow and storage by minimizing penalty functions. Penalty functions associate a penalty or reward with designated levels of flow or storage and can be adapted to capture the system priorities and balance all objectives. This talk describes the application of ResPRM to the Columbia River in support of the Columbia River Treaty Study.

Demonstration of a Physically Based Distributed Watershed Water Quality Model (Gridded Surface Sub-Surface Hydrologic Analysis Model) - Eau Galle Watershed, Wisconsin.

Presenter: Billy E. Johnson, Environmental Laboratory – ERDC

Abstract: The control of nutrients arising from Non-Point Source Pollution (NPSP) is difficult because the source areas can be hard to identify due to the distributed nature of the pollutants. In order to quantify potential benefits, detailed hydrologic/water quality modeling of watersheds and the effects of BMPs is required. Extending model results beyond the range of calibration to model future conditions requires the use of physically based models that include the important processes that generate stream flow, material transport, uptake, loss, transformation, and recycling. In addition, given the complex nature of surface water and groundwater interaction, as well as the spatial nature of constituent distribution, a distributed source transport model is needed to accurately account for the movement of water and material through the various landscape media where more simplistic models are not applicable, or are homogeneous which is not appropriate for the heterogeneous nature of distributed sources. This paper will briefly discuss the current research effort taking place at the Engineer Research and Development Center (ERDC) as it relates to the development of a physically based distributed watershed water quality model in addition to presenting the demonstration study currently being finalized at the Eau Galle Watershed located in Wisconsin. Results from this modeling effort will be presented in addition to a discussion of the future directions for the development of water quality kinetics.

Development & Application of HEC-WAT

Presenters: Penni Baker, Institute for Water Resources, Hydrologic Engineering Center and Stacy Samuelson, Sacramento District

Abstract: For the past several years, the Corps' Institute for Water Resources, Hydrologic Engineering Center (HEC) has been developing the Watershed Analysis Tool (HEC-WAT). HEC-WAT was created to help Project Delivery Teams (PDT) conduct watershed and water resources studies. These studies can often be difficult to complete. A PDT must come to a consensus on the definition of the issues involved, along with the definition of various models, events and analyses that are required to make appropriate decisions. HEC-WAT was created so that PDT's could conduct these integrated, comprehensive and systems based analyses. The WAT improves coordination and communication between the members of a PDT, involves modelers early in the study process, improves management's ability to track project status, and encourages a team approach. The schematic of the WAT provides the means to share and visualize data and results easily, ease of model and alternative definition/representation, ability to track project status, and the ability to display results during public and project status meetings. Since its release in late 2009, HEC-WAT has been applied in several watersheds. This presentation will discuss the development, features and capabilities of the WAT and will also document those applications. New features are being designed and implemented so the WAT will be able to perform a robust risk analysis. These features will also be discussed.

SESSION V**TIME: Wednesday 9 June, 3:30-5:00****ROOM: Salon 4****TRACK: System Approaches****TOPIC: Economics and Decision Making****MODERATOR: Becky Moyer, LRD****PRESENTATIONS:*****The Economic Benefits of Navigation Due to Reductions in Pollutant Emissions******Presenter: Doug Gorecki, Buffalo District***

Abstract: Corps navigation projects are typically justified based on the cost savings associated with moving commodities by water rather than land. However, maintaining waterways for shipping provides additional benefits not typically considered in Corps analyses. Among these benefits are the reductions in emissions afforded by navigation over rail and/or truck. While these emission savings pertain to a number of pollutants, it is particulate matter less than 10 microns (PM-10) that environmental scientists have most successfully valued emissions-related costs.

This study evaluated the changes in PM-10 emissions associated with a modal switch from water to land routings on the Ohio River System. A sample of 50 movements was selected and mapped using GIS software to determine the mileages by mode within various metropolitan statistical areas (MSAs) for both water and all-land routing scenarios. Based on these mileages, it was possible to determine fuel consumption and the associated PM-10 emissions in each MSA for both routing scenarios. The changes in emissions when going from water to all overland routings were compared to baseline PM-10 concentrations and used to determine health impacts in terms of human loss of life and work days lost. The results of this study provide further insight into the benefits associated with maintaining Corps navigation projects on the Ohio River.

Planning for Dam Safety Investments***Presenters: Alex Ryan and Nicholas Lutz, Louisville District***

Abstract: Planning for the repair or rehabilitation of an aged portfolio of dams has become a growing priority of the Corps. An integral facet of the planning for dam safety investment includes estimating the benefits that at-risk-structures provide. Data on the Corps' most vulnerable dams, DSAC I, II and III structures, were gathered with the intent of presenting a consistent valuation of the projects. The benefits of each dam's flood risk management, recreation, navigation, water supply and hydropower components, when applicable, were examined and adjusted for the probable time that they would be foregone following a failure. In addition, to assist prioritization, an estimate was made for the value of each dam's benefits for the period of the project's extended life. Once compiled, the results were used in conjunction with dam failure consequence data, cost information and risk factors to provide a comparative aid for dam safety investment planning.

This presentation will discuss the data and methods used and the assumptions made in order to assemble a database of the dams' economic benefits. Results of the effort will be shared with the audience.

Developing Meaningful Economic Metrics for O&M Budget Prioritization on the Great Lakes Navigation System

Presenter: Jon Brown, Buffalo District

Abstract: Historically, the relative merit of proposed O&M project funding was strongly influenced by the harbor's ranking according to the most recently reported harbor commercial tonnage statistics. In recent years, as a result of a shrinking budget, the Corps Budget Process for O&M funding has become much more rigorous, requiring multiple criteria that are used in the HQ prioritization of project funding. As total available O&M funds become more scarce creating competition between projects, it is becoming more important to prioritize O&M investment decisions based on a comparison of each project's net economic value from a National Economic Development (NED) perspective.

The Buffalo District has developed, for use on the Great Lakes, an economic evaluation model to estimate the transportation costs associated with varying harbor maintenance depths. The model uses the most recent detailed domestic and foreign shipment data from WCSC, lake levels, vessel operating characteristics, distance tables, dock and connecting channel depths, loading and unloading rates, maneuvering times, Coast Guard vessel load line limits, commodity stowage factors, etc. to develop transportation cost – by depth relationship at all federal Great lakes harbors. These are used, in part to show the consequences of discontinuing maintenance dredging at select projects and to help prioritize budgeted O&M dredging activities.

Estimating Transportation Damages and Benefits of Flood Risk Reduction Projects Using VISTA Dynamic Traffic Simulation Model and HEC-FDA.

Presenter: David Bucaro, Chicago District

Abstract: As part of the Upper Des Plaines River and Tributaries Feasibility Study, the Chicago District and VISTA Transport Group developed a process for estimating flood-induced transportation damages and benefits over a 475-square mile watershed, which encompasses much of the Chicago Metropolitan area. VISTA, which stands for Visual Interactive System for Transport Algorithms, is a collection of modules which dynamically routes traffic over a network of roads, finding an equilibrium condition for which no vehicle can shorten its travel time or mileage between its origin and destination. Developed at Northwestern University, VISTA has been successfully used on transportation projects across the U.S. and Europe. The process involves first defining a road network and routing average daily traffic information through the network to determine normal condition total travel times and mileage by vehicle type. To analyze the effects of flooding on traffic, the network is modified by closing roads at specific start times and durations to simulate flood conditions. Differences in travel time and distance are monetized by calculating the value of time occupants are delayed and per-mile operating costs vehicles are detoured. While taking into account primary and secondary effects road closures have on traffic networks, a method was developed to allocate system-wide effects to specific closures. Direct damage functions were developed for use by HEC-FDA in calculating transportation benefits and justifying flood risk reduction projects.

SESSION V

TIME: Wednesday 9 June, 3:30-5:00

ROOM: Salon 5

TRACK: Risk Informed Decision Making

TOPIC: Applying Policies and Procedures

MODERATOR: Noel Clay, SAW

PRESENTATIONS:

Evaluation of Levee Systems for the NFIP, Engineer Circular 1110-2-6067

Presenters: Woodrow L. Fields, Institute for Water Resources, Hydrologic Engineering Center, and Tammy L. Conforti P.E, HQUSACE

Abstract: The U.S. Army Corps of Engineers (USACE) is developing Engineer Circular 1110-2-6067, Evaluation of Levee Systems for the NFIP, to address levee system evaluations performed by the Corps. Levee systems risk assessments are being performed in association with the FEMA Map Modernization and National Flood Insurance Program (NFIP) efforts. The EC provides new guidance on how to perform these system-wide risk assessments. The assessments are to determine whether a levee system meets FEMA and USACE requirements for certifying that the system can be reasonably expected to provide flood protection from the 1% annual chance of exceedance flood. A levee system comprises one or more components which collectively provide flood damage reduction to a defined area. Failure of one component within a system constitutes failure of the entire system. The levee system is inclusive of all components that are interconnected and necessary to ensure protection of the associated separable floodplain – levee and floodwall sections, closure structures, pumping stations, culverts, and interior drainage works. The EC describes policy, study process and outreach, coordination, technical criteria and guidance for complete engineering evaluation, and ITR and staffing/signature requirements.

Other Social Effects (OSE) Analysis

Presenter: Kevin Bluhm, St. Paul District

Abstract: Working with experts that contributed to the social impacts from Katrina, we contracted a stand alone Other Social Effects report for the Fargo Metro study to help detail the effects of long term flood issues and contrast the with project case to show and illustrate benefits to the OSE account for a permanent project. The report is a lengthy qualitative analysis that examines the social and human stressors related to prolonged exposure to flood related trauma. The report was included as an appendix to the economics section in the final feasibility report.

MVP Economics with contract assistance from URS Corp, Gaithersburg, MD Kevin Bluhm lead

Flood Damage Data—It's Not Mickey Mouse Economics

Presenters: Susan Durden, IWR; Kara Reeves and Patrick Nowack (DA intern), Omaha District

Abstract: There is a general perception that a giant data base exists that contains comprehensive data on potential and historic damages from flood events. While such a source would be valuable, it doesn't exist. There are useful sources of data in the Corps, FEMA, NWS and other and sundry sources, however, each is designed for a specific purpose; they cannot be merged and they are not accessible to the uninitiated seeker. In response to a request by the National Committee on Levee Safety (NCLS) a team of IWR and Omaha economists with strong support from FEMA, members of the NCLS and ERDC (National Levee Data Base) synthesized available data sources; projected, at a broad view level, potential future damages; and outlined a structure for integrating flood damages data. The sources and techniques investigated are applicable to all Districts in maintaining their own data banks.

Non Structural Flood Risk Mitigation Methodologies and Policies

Presenter: Joe Remondini, Tulsa District

Abstract: Non Structural Flood Risk Reduction measures must be evaluated as an alternative within the Corps of Engineers Planning process. These measures and individual flood proofing options are becoming more wide spread as Flood Plain Management and Flood Damage Reduction tools in the Corps of Engineers and across the Country. Floodplain Managers, Citizens, Government Representatives and others realize more and more that these options work extremely well as a green or ecosystem restoration approach to reducing flood damages while also achieving no adverse impacts! This presentation gives an introduction and basic understanding of all the non structural and flood proofing measures. It will provide contact information on the non structural issues that will be forthcoming, and provide some examples of non structural applications by the Corps and elsewhere.

SESSION V**TIME: Wednesday 9 June, 3:30-5:00****ROOM: Salon 6****TRACK: Collaborative Planning****TOPIC: Lessons Learned and Changed Relationships****MODERATOR: Kim Gavigan, SPL****PRESENTATIONS:*****HD.GOV: An Interagency Web Portal Focused On the Human Dimensions of Natural Resource Management******Presenter: Jeffery E. Adkins, NOAA Coastal Services Center***

Abstract: Through the Internet, users have access to a large volume and great variety of potentially useful information on the human dimensions of natural resource management. Much of this information, although produced with public funds, is hard to find and access because it is scattered across a number of servers hosted by different governmental and nongovernmental agencies. The *HD.gov* (*HumanDimensions.gov*) Web portal, released in June 2009, was developed to address this problem, providing “one-stop shopping” for credible, peer-reviewed information. Its content management system makes it easy for social scientists to submit new information to the portal and provides a user-friendly interface to facilitate peer review. The site serves two distinct communities: those who develop social science information and tools and the natural resource managers who need the information and tools. This session will also include updates on other efforts of the National Oceanic and Atmospheric Administration (NOAA) Coastal Services Center that may be of interest to planners in the US Army Corps of Engineers (USACE), including The Digital Coast, CanVis and green infrastructure training, and an agreement between USACE and NOAA that helps our agencies to collaborate on social science projects.

A Modern Ahupua'a Framework: Programmatic Outcomes of Integrated Planning Initiatives in Hawaii.***Presenters: Cindy Barger and Athline Clark, Honolulu District***

Abstract: Ahupua'a is a Native Hawaiian traditional concept of land management that not only takes a holistic approach to the management of the lands and water resources but also integrates the social, cultural, and spiritual aspects of the use of the ahupua'a or watershed. A revival within Hawaii of wanting to embrace the Native Hawaiian concepts in a contemporary context, the shifts in the last 10 years in Corps policies and regulations to systematic and collaborative approaches, and a change in Honolulu District's initiatives in integrated planning have resulted in sponsors and stakeholders viewing the role of the Corps and their relationship with the Corps differently. After years of Honolulu District being a proponent for collaborative watershed planning, today non-traditional sponsoring agencies (Department of Health, Division of Aquatic Resources, environmental and cultural non-government organizations) are requesting assistance and actively participating in the planning process. Through the authorities of Section 2007, WRDA 2007 – other federal agencies (NOAA and EPA) are approving the use of their funds to the State as match for Corps watershed plans. This presentation will discuss how a programmatic approach to embracing integrated and collaborative planning over the last 4 years has resulted in a change in how non-federal sponsors are engaging with the Corps (from passive participants to active partners), how other federal agencies are interacting with the Corps (from a hard bargaining negotiation to a consensus building joint-

ownership), and how stakeholders are viewing the Corps (from a single purpose technical problem solver to an systematic planning integrator).

Lessons Learned and Gauging the Effectiveness of the Model Improvement Program for a CERP (Comprehensive Everglades Restoration Plan) Project

Presenters: Mark Shafer and Ray Wimbrough, Jacksonville District

Abstract: A model improvement program was established by the U.S. Army Corps of Engineers (Corps) in 2003 to "assess the state of planning models in the Corps and to make recommendations to assure that high quality methods and tools are available to enable informed decisions on investments in the Nation's water resources infrastructure and natural environment." The model certification process, part of the model improvement program, is used to determine if a model is technically sound in both theory and computational correctness. The model certification process was utilized to evaluate the Ecological Model that was used to estimate environmental benefits for the C-111 Spreader Canal Western Project. The C-111 Spreader Canal Western Project is an ecosystem restoration component of the Comprehensive Everglades Restoration Plan (CERP), which is being recommended for implementation by the Corps. The model certification process resulted in several adjustments to performance measures in the Ecological Model, which served to strengthen the environmental benefit analysis and reaffirmed the plan evaluation and selection for the proposed project. Along with quality assurance checks, additional documentation was prepared that both supported and improved the final product. Overall, the model certification exercise provided an additional layer of transparency to the Corps Planning Process, should result in further gains of public trust, and further reinforces the competency of the Corps' Ecosystem Restoration Mission.

Playing Nicely in the Sandbox: Lessons Learned in Collaborative Planning, Truckee Meadows Flood Project, Reno-Sparks, NV

Presenter: Jerry Fuentes, Sacramento District

Abstract: Collaborative planning for the Truckee Meadows Flood Project has been an ongoing process for the past decade. Throughout this complex and dynamic planning process, the Sacramento District has encountered many challenges and developed a vital and ongoing process of collaboration that is bringing together federal, state and local agencies, non-profit organizations, academia, tribal groups, and local stakeholders. This early attention to collaborative planning provided forums for a wide variety of interest groups to provide vital input into the process and contributed to a wider understanding of regional problems and opportunities. Addressing additional project purposes, development of a local community coalition, a political oversight committee, specific technical working groups, and continued public outreach are all features of this collaborative planning effort. This presentation would examine the key components of the collaborative process used by the Sacramento District and provide specific lessons learned derived from the implementation of each component. Equal time will be spent on both the positive and negative aspects of how this collaborative effort has been implemented, as well as a focus on continued innovative approaches in the future as the project nears completion.

SESSION V

TIME: Wednesday 9 June, 3:30-5:00

ROOM: Salon 7

TRACK: Planning Community of Practice

TOPIC: Cultural Resources Applications

MODERATOR: Ken Zwickl, HQ

PRESENTATIONS:

Gladesmen Ethnographic study: Traditional Cultural Properties of non-Traditional Cultures

Presenters: Grady Caulk and Dan Hughes Jacksonville District

Abstract: During public comments for the CERP (Comprehensive Everglades Restoration Plan) Recreation Master Plan the members of the public stated (verbally and in writing) that the Jacksonville District was out of compliance with the National Historic Preservation Act for failing to consider effects on “Gladesmen Folk Culture” traditional cultural properties. This paper provides an overview of the methods used to determine if this is a “culture” and if any “traditional cultural properties”, as defined by National Register Bulletin 38, exist. The early 20th century “Gladesmen” was a south Florida swamp (Everglades) expression of the Florida Cracker culture. Like decedents of most regional folk cultures the “Modern Gladesmen” are well integrated (acculturated) into modern society; however, they maintain social relationships revolving around the use of the greater Everglades. The paper also discusses the difficulties associated with the identification and evaluation of traditional cultural properties associated with non-ethnic minority groups.

Section 106 and Derelict Vessels Removal

Presenters: Dan Hughes and David McCullough, Jacksonville District

Abstract: The Rivers and Harbor Act of 1899 entitles the Corps to remove sunken vessels and obstructions from the federal channel. This authority recently came into conflict with the National Historic Preservation Act when the US Coastal Guard asked the Jacksonville District to remove two derelict vessels located on the edge of the federal channel near Dania Beach, Florida. The conflict would take the researchers down into the Caribbean, north to the Great Lakes, and finally across the Atlantic to Sweden to assess the vessels historic significance and solve the mystery of how two tugs came to be derelict vessels in Dania Beach, Florida. This paper will discuss the implications of attempting to remove derelict vessels from the federal channel without review for impacts under the National Historic Preservation Act. In addition, the paper will also discuss the difficulty in defining the significance of foreign vessels under National Register guidelines

Ten Thousand Years Under the Sea: Section 106 and Submerged Prehistory

Presenter: Wendy Weaver, Jacksonville District

Abstract: As part of our Section 106 responsibilities, the US Army Corps of Engineers conducts submerged cultural resources surveys on our projects involving channel improvements, operation and maintenance, shore protection and the designation of new offshore disposal areas. Typically these surveys are focused on locating shipwrecks and other historic properties that are potentially eligible for the National Register of Historic Places. Recently, submerged prehistoric sites have been recorded on the continental shelf in the Eastern Gulf of Mexico off the coast of Florida. Using a subbottom profiler to identify submerged landscapes and cultural features in conjunction with the standard remote sensing array consisting of a magnetometer and a side-scan sonar, prehistoric sites now submerged by sea level rise can be identified. The Jacksonville District is developing strategies to evaluate potential submerged prehistoric cultural features within our project areas.

Using Landform Sediment Assemblage Models to Predict, Assess, and Mitigate Impacts to Archeological Sites on the Upper Mississippi River and Illinois Waterway

Presenter: Jim Ross, Rock Island District

Abstract: Thirty years of historic properties management on the Upper Mississippi River and Illinois Waterway have resulted in the accumulation of a wealth of geomorphological and archaeological data. Landform sediment assemblage (LSA) datasets that resulted from these investigations have proven very effective in both systemic and site specific planning. For example, under the Navigation and Ecosystems Sustainability Program, the Corps had to assess the potential impact to archeological sites across 2200 miles of shoreline. By using LSA and archeological geographic information systems (GIS) datasets with bank erosion models, Rock Island District was able to reduce that area of potential effect to roughly 86 miles of shoreline. This approach has proven to be a very effective tool in evaluating archeological potential at site-specific projects as well. This was demonstrated dramatically in 2008 with the flooding on the Mississippi River and the levee breaks near Oakville, Iowa. Timely and accurate predictions of significant buried archeological potential at the break location allowed for expedited survey, testing, and mitigation of a unique archeological site and permitted construction of the repair within a very short period of time. The LSA datasets provide the means to summarize impacts in a meaningful way that addresses both management and budgetary concerns, as well as research objectives, and compliance requirements of the National Historic Preservation Act.

SESSION V**TIME: Wednesday 9 June, 3:30-5:00****ROOM: Salon 8****TRACK: Planning Community of Practice****TOPIC: Planning for Sustainability****MODERATOR: Daniel Small, SAD****PRESENTATIONS:*****Sustainability: Recommended principles and definition of USACE******Presenters: Dick Cole, Institute for Water Resources and Frank Appelfeller, Great Lakes and Ohio River Division***

Abstract: Recommended USACE principles and definitions for sustainability are described. They were developed by the Sustainable Solutions Project Delivery Team (PDT) to facilitate achievement of USACE Campaign Plan Objective 2a. The eight principles reflect the ethics of sustainable development inspired by the United Nations. If principles are followed, irreversible loss of economic, social and environmental heritage will be avoided. Economic development, social needs, public safety and environmental protection will be integrated into a systems approach to human welfare improvement. Degraded environments will be improved and protected for present and future generations. USACE actions will equitably respect basic human rights to life essentials, including implementation of management systems that ensure human safety. Loss of community integrity, security, economic welfare, and other social capital will be avoided. All stakeholders in decisions will be involved and their needs addressed. Education, research, technological development and adaptive management are well supported to sustain managed and natural systems. Local to global cooperation will be commonplace. The recommended definition for sustainability follows: “Sustainability is the result of integrating essential economic, social and environmental elements into systems approaches to meeting the needs of present and future generations.” Definitions are also suggested for environmental sustainability, economic sustainability, and social sustainability. Future activities of the PDT are described including recruitment for field perspectives

St. Johns County Regional Sediment Management Study***Presenter: Laurel Reichold, Jacksonville District***

Abstract: A Regional Sediment Management (RSM) study completed by the Jacksonville District of the US Army Corps of Engineers identified sediment transport patterns and management alternatives for Federal projects in the region surrounding St. Augustine Inlet, Florida. Currently there are three Federal navigation projects, one Federal shore protection project, and one Federal hurricane and storm damage reduction feasibility study active within the study area. Through historical data analysis, data collection, and hydrodynamic modeling this study evaluated all Federal projects within the study vicinity in order to illuminate the sediment pathways, sources and sinks within the beach and inlet system. This study crossed mission objectives by assessing navigation and storm damage reduction projects holistically, and played a pivotal role in the state evaluation of continued use of the inlet ebb shoal as a sand source for the authorized shore protection project. Dredging schedules for inlet and beach maintenance projects were evaluated for potential coordination which could result in cost savings and reduced environmental impacts. The continuing study will update the existing sediment budget to reflect the construction of the St. Augustine Beach shore protection project and dredging of the inlet and Intracoastal Waterway. The study will present alternatives to improve

performance of Federal navigation and storm damage reduction projects located within the study area by evaluating management strategies and better defining current mechanisms driving coastline change.

*Smart Planning from Lessons Learned by the
Monitoring Completed Navigation Projects (MCNP) Program*

Presenter: Lyndell Hales, ERDC Coastal and Hydraulics Laboratory

Abstract: Optimizing navigation project performance requires that projects be monitored and evaluated against preconstruction projections. Lessons learned can then be translated into proactive management guidance for District smart planning for future applications. Knowledge gained from the MCNP program is used to verify designs, identify deficiencies, optimize, and provide upgraded field guidance to reduce life-cycle costs on a national scale. Monitoring plans are developed jointly by CHL and District Team Members (PDT) where the particular project is located. Ongoing FY10 MCNP studies include (a) Houston-Galveston Navigation Channel, (b) Montgomery Point Lock and Dam, and (c) Marmet Lock and Dam. (a) Historically, channel deepening and widening has been economically justified in part on the assumption that maintenance dredging costs will not increase. Channel shoaling has nearly doubled O&M cost at several USACE navigation channels. (b) Montgomery Point L&D features a dam with a unique gated navigable pass consisting of 10 hydraulically operated hinged gates that lie flat on the river bottom during high water stages, and are elevated to form a navigation pool during low water. (c) Marmet L&D has a unique filling system through the upstream sill, and an unusual valve mechanism. The filling/emptying tunnel may be susceptible to concrete scour and erosion.

Collaborative Capacity Assessment Initiative Results

Presenter: Hal Cardwell, Institute for Water Resources

Abstract: This session will present the results of the Collaborative Capacity Assessment Initiative, an effort to conduct an internal assessment that highlights current strengths in USACE's collaborative capabilities and identifies areas that could be enhanced. This presentation will include how the Corps plans to implement the findings of this initiative and the steps that will be taken to improve our collaborative capacity. The session will be led by IWR staff and several of the MSC POCs who helped to organize and lead the assessment in their Divisions.

Background: The Collaborative Capacity Assessment Initiative is led by IWR's new CX, the Conflict Resolution and Public Participation Center (CPC). Beginning in the summer of 2009, IWR conducted a workshop in each MSC that targeted leaders from diverse functional areas at the MSC and District levels, especially those who are significantly involved in collaborative efforts. A little over 200 people completed an on-line collaborative capacity assessment survey in advance of each workshop. At the workshops, participants discussed the results, their implications, ways to improve the Corps' collaborative capacity, and resources for enhancing USACE's collaborative capacity. Each MSC workshop was organized with the assistance of CPC's POC network, which was established to partner with the CX in enhancing the USACE capacity to collaborate with external stakeholders.

SESSION VI**TIME: Thursday 10 June, 10:30-12:00****ROOM: Salon 3****TRACK: Systems Approaches****TOPIC: Fish Passage Applications****MODERATOR: Jodi, Staebell, MVD****PRESENTATIONS:*****Forecasting fish response to levee repair features of the Sacramento River Bank Protection Project******Presenter: Brian Mulvey and David L. Smith, Sacramento District***

Abstract: The Sacramento River Bank Protection Project was authorized to protect more than 1700 kilometers of levees and flood control facilities. A key component of the levee repair work is the incorporation of environmental features that restore riparian and fish habitat function. Presently, the primary tool for planning the incorporation of these features is the Standard Assessment Methodology (SAM). SAM uses a combination of field data, riparian and geomorphologic models to assess proposed project impacts, but there still remains uncertainty regarding the function and value of the incorporated features for benefiting the target fish species.

To improve the assessment ability of SAM and better understand the benefits of the constructed habitat features, we are collecting two-dimensional fish movement data using acoustic tags and developing models supporting the use of Eulerian Lagrangian Agent Method (ELAM). The ELAM extends the use of computational fluid dynamics models because virtual fish are released inside the model field where they can react to habitat alterations such as levee repairs. The fish movement tracking data can be used to calibrate and validate ELAM output, which can be used to model generalized results to produce site-specific habitat suitability curves that can be incorporated into the SAM and improve assessment and forecasting capabilities. The combination of the SAM with ELAM is a promising approach that could improve the planning and execution of ecological projects.

Evaluating fish passage alternatives on the Mississippi River using the Eulerian Lagrangian Agent Method – A Demonstration Project***Presenters: Mark A. Cornish, Rock Island District, Aaron W. Buesing, St. Paul District, Kara N. Mitvalsky, Rock Island District, and David L. Smith, ERDC***

Abstract: Planning for warmwater fish passage is challenging because of the wide range of fish species being considered and the limited engineering design guidance. The biological response to different fish passage designs was studied at Lock and Dam 22 on the Mississippi River using the Eulerian Lagrangian Agent Method (ELAM). This method simulated fish movements by combining Adaptive Hydraulics (ADH) computational fluid dynamics model outputs and computer generated fish behavior patterns. The ELAM created an environment where virtual fish were allowed to swim in response to the fine - scale hydrodynamics and choose their destination. Two scenarios were developed, one with and one without the proposed fish ladder, and these results were compared to data collected in the field. These findings were valuable in confirming the location of the fishway and provided a useful visualization of how the project is expected to function once constructed. Future work will focus on utilizing ELAM modeling techniques in the planning activities at other locations in the Mississippi River and developing behavior models for smaller sized fish. This will allow refinement of other fish passage designs, maximizing effectiveness while reducing costs.

Yellowstone River-Intake Modification Project: Engineering Design

Presenter: Tiffany Vanosdall, Omaha District

Abstract: Modifications to Intake Dam and diversion headworks are proposed to allow fish passage and to prevent entrainment into the irrigation canal. Design of project features includes the use of both numerical and physical modeling. For fish passage, the approach to and preliminary results from numerical modeling used to evaluate key parameters relative to success criteria are presented. Ongoing analyses to overcome challenges encountered with entrainment prevention are discussed.

The diversion dam associated with Bureau of Reclamation's Lower Yellowstone Project likely has impeded migration of the endangered pallid sturgeon for more than 100 years. In addition, monitoring indicates that an average of 500,000 fish of 36 species are annually entrained into the main irrigation canal.

Fish Passage Operations at Jim Woodruff Lock and Dam

Presenter: Brian Zettle, Mobile District

Abstract: The construction of Federal and private dams in the Alabama-Coosa-Tallapoosa (ACT) and Apalachicola-Chattahoochee-Flint (ACF) River Basins have blocked historical migratory pathways for native fishes to access important spawning habitat. In an effort to restore access to previously available spawning habitat for Alabama shad, the U.S. Army Corps of Engineers (Corps) has worked collaboratively with several other agencies to study fish passage opportunities at Jim Woodruff Lock and Dam in the ACF Basin. The Corps has participated in interagency study efforts over the past five years by incorporating operations that use the navigation lock to give the fish access to nearly 200 miles of previously inaccessible spawning habitat in the Flint and Chattahoochee rivers. Restoration of these and other migratory fish populations can improve the overall ecology of the ACF river system, Apalachicola Bay and the Gulf of Mexico. Based on the preliminary data analysis, the navigation lock technique was also utilized at the Claiborne and Millers Ferry locks and dams in the ACT River Basin in 2009. These ongoing studies suggest that the locking technique could be used to help migratory fishes in other parts of the country repopulate from declines experienced after construction of Corps projects.

SESSION VI

TIME: Thursday 10 June, 10:30-12:00

ROOM: Salon 4

TRACK: Systems Approaches

TOPIC: Activities in the Missouri River Basin

MODERATOR: Kayla Eckert Uptmor, NWO

Special 90-minute Session highlighting many of the varied and innovative Planning activities currently ongoing in the Missouri River System, including the Missouri River Recovery Program (MRRP), the Missouri River Authorized Purposes Study, and the Missouri River Ecosystem Restoration Study (Presented by team members from NWO and NWK).

Presentations to include:

Planning Integration in the Missouri River Recovery Program (MRRP)

Presenter: Brad Thompson, Omaha District

Abstract: The Missouri River Recovery Program (MRRP) was initiated in response to the Missouri River Bank Stabilization and Navigation Mitigation Project (BSNP) and requirements of the Endangered Species Act Biological Opinion (BiOp) issued 2000 and amended in 2003. Through subsequent legislation the MRRP now encompasses a comprehensive planning effort, habitat creation, adaptive management framework, science program, and stakeholder engagement. This session will highlight the application of a program review utilizing the planning process to evaluate the program's overall status in meeting applicable authorization and mandates, documentation of any gaps and recommendations on potential program refinements. The primary objective for this effort are to achieve the BSNP authorization (3 items) and BiOp Reasonable and Prudent Alternative, RPA (69 elements); Reasonable and Prudent Measures, RPMs (21 measures); and Conservation Recommendations, CRs (15 recommendations). Metrics derived from the BSNP and BiOp allow the USACE to determine the level of effort needed to attain goals set forth in the MRRP.

Innovative Methods of Integrating Conservation Planning Methods, Conceptual Ecological Models, USACE Planning Requirements, and NEPA to Develop a Comprehensive Plan: Missouri River Ecosystem Restoration Plan Case Study

Presenter: Jennifer Switzer, Kansas City District

Abstract: The Missouri River Ecosystem Restoration Plan/EIS (MRERP/EIS) is among the largest basin-wide restoration planning efforts in the US, and represents an unparalleled opportunity and challenge. The aim of the effort is to identify restoration, mitigation and recovery goals for the Missouri River and its tributaries, ecological systems and native species for the coming 30-50 years. The complexity of the project and its geographic scale present numerous challenges, among which is the need to provide real engagement opportunities for the interested public and stakeholders, including members of 29 basin tribes, 8 states and dozens of federal, state and local agencies. To address this challenge, a team of planners representing multiple backgrounds and approaches has developed the MRERP roadmap, which incorporates tested and innovative techniques to ensure procedural and legal requirements are met through a transparent, objective, and scientifically based planning approach. The roadmap integrates NEPA principles and practices, the USACE 6-Step Planning Process, the Open Standards for the Practice of Conservation, and the lessons and best practices of previous large-scale ecosystem restoration planning efforts.

During this session, participants will be introduced to the MRERP-style resource baseline conceptual model.

Collaborative Planning to Develop a Comprehensive Report/Environmental Impact Statement for the Missouri River Authorized Purposes Study

Presenter: Lynn Heng, Omaha District

Abstract: The Missouri River Authorized Purposes Study (MRAPS) is a broad-based five year study co-led by the Omaha and Kansas City Districts to determine if changes to the authorized purposes of the Flood Control Act of 1944 are warranted. The study intends to evaluate the current needs & problems within the basin, propose alternatives in changing project purposes, conduct economic analysis on best & highest use project purposes and redistribution of economic benefits. Coordination with other efforts and components including the Missouri River Recovery Program, Missouri River Ecosystem Restoration Plan, Missouri River Degradation, Master Manual, Corps updated Flow Frequency Study, local flood protection projects & studies, FEMA, Weather Service, USGS, US Coast Guard, Tribal Lands, Corps and other major activities on the Mississippi River, Kansas River studies, and any major/primary tributary watershed studies. The depth of the study and its geographic scale present numerous challenges, among which is the need to provide real engagement opportunities for the interested public and stakeholders, including members of 29 basin tribes, 8 states and dozens of federal, state and local agencies. A Planning Integration Team developed from staff within the two districts will lead the study efforts as well as individual teams assigned to research areas of interest in all eight original authorized purposes. Collaboration within the districts as well as virtual teaming will be imperative to study success.

Systems-Oriented Socioeconomic Analysis for Two Major Missouri River Basin Studies: The Missouri River Authorized Purposes Study and the Missouri River Ecosystem Restoration Study

Presenters: Thomas Topi and Allen Holland, Kansas City District

Abstract: The Missouri River Ecosystem Restoration Plan (MRERP) and the Missouri River Authorized Purposes Study (MRAPS) are major concurrent studies of the entire 2,341 mile-long main stem of the Missouri River from the Continental Divide in Montana to St. Louis. The 5-year Authorized Purposes Study will evaluate the eight currently authorized Missouri River purposes and determine whether operational or infrastructure changes are warranted. Issues include conflicting priorities between upstream and downstream states concerning recreation, navigation, and water supply. The Ecosystem Restoration Plan study, expected to last 8 years, was authorized to mitigate habitat losses, recover federally listed species, and restore ecosystem. However, effects on the other purposes and uses of the river also must be taken into account. Kansas City and Omaha Districts are collaborating on the studies, and large study teams within each district are working on overlapping areas and tasks. The concurrence of the two studies and the consistency necessary in defining existing and future conditions will require careful coordination between the two districts and study teams. This presentation will outline the efforts of the two study teams to fulfill the objectives set forth in their respective authorizations, while avoiding duplication and inconsistency in planning efforts and formulating credible alternatives with consideration of how the other study could alter future conditions.

SESSION VI

TIME: Thursday 10 June, 10:30-12:00

ROOM: Salon 5

TRACK: Risk Informed Decision Making

TOPIC: Models and Assessments

MODERATOR: Maria Wegner-Johnson, SWT

PRESENTATIONS:

Using Expert Elicitation to Construct a Flood Damage to Roads Model

*Presenters: Stuart Davis, Brian Maestri, Jessica Fritsche, Richard Males, Cory Rodgers,
Institute of Water Resources*

Abstract: Flood damage to road infrastructure can be significant, and should properly be incorporated into Corps flood damage reduction economic analyses. A review of previous work suggested that better definition of the damage mechanisms would be necessary prior to constructing a field-usable model. In cooperation with representatives of the Federal Highway Administration, an expert elicitation process to determine damage mechanisms and damage functions for the model is being carried out. This presentation describes the expert elicitation process, the resulting model, and plans for the application of the model by Corps of Engineers district offices. The model-building process included creating a strawman on road damage mechanisms, selecting experts with appropriate knowledge and experience, using a two step process of expert agreement on the damage mechanisms, and then creating a model by defining the variables and their interactions. The model is built on information that districts will be able to obtain from secondary sources and application of HEC flood hydraulics software.

A Risk Assessment to Inform Selection of a Design Alternative for the Gulf Intracoastal Waterway West Closure Complex

Presenter: Martin T. Schultz, Ph.D., ERDC

Abstract: New Orleans District is constructing the Gulf Intracoastal Waterway West Closure Complex (GIWW-WCC) to provide improved flood protection for the West Bank area of New Orleans. The GIWW-WCC is a navigable sector gate and pump station that can be closed in advance of oncoming storms to prevent storm surge from entering the West Bank industrial canal system, which includes the Harvey and Algiers Canals. Working in cooperation with the Engineer Research and Development Center, New Orleans District implemented a systems-level risk assessment to help inform the selection of a hurricane protection system design alternative. This presentation will describe the risk assessment approach and the evaluation of alternatives. The alternatives were evaluated based on life-cycle risk reduction benefits with respect to economic, life-safety, and cost objectives. Uncertainty in the quantification of risk reduction benefits was addressed by evaluating the sensitivity of study conclusions to inputs and assumptions of the risk assessment. Results of the analysis are interpreted to provide important insights for planning effective flood risk management strategies in the area.

A Consequence Estimation Approach to Support Risk-Informed Decision Making for the USACE Dam Safety Program

Presenter: Jason Needham, PE, RMC

The United States Army Corps of Engineers (USACE) Dam Safety Program is transitioning to a centrally managed and decision driven portfolio risk management process that relies on various levels of risk assessment from screening through detailed studies. This tiered approach of risk assessment requires methods that can be scaled to the level of effort needed to achieve the required level of accuracy. Within this risk-informed framework, an estimate of the consequences due to dam failure for both life-safety and economic impacts is critical to success. These consequence estimates are primarily determined by the temporal and spatial distribution of flooding due to dam failure, the initial distribution of people and property within the resulting flooded area, and the redistribution of people and property over time as a result of warnings and evacuations.

This presentation describes the Dam Safety Program risk-informed portfolio management process and the consequence estimation approach that is being applied to support it. Focus will be on methodology and application of the Hydrologic Engineering Center's Flood Impact Analysis Model (HEC-FIA), which provides capabilities to efficiently estimate various consequences for a specific flood event.

Converting an FIA inventory into an FDA Inventory in 3 easy steps

Presenters: William P. Lehman, Hydrologic Engineering Center, Scott W. Campbell, Seattle District

Abstract: This presentation discusses an aspect of the Project Performance Review and Analysis process. To report annual damages attributable by project, it is necessary to have structure damage curves. The presentation walks through an example of generating structure inventories using the HAZUS data in HEC-FIA and converting that into a structure inventory that is importable into HEC-FDA so that reconnaissance level aggregated stage damage functions can be created without a detailed structure survey. The next step would be to take those aggregated stage damage curves and import them into the version of HEC-FIA used by CWMS. Although this discussion is intended to be about the PPRA process, planners could also use this method to come up with reconnaissance level aggregated stage damage functions in HEC-FDA with minimal effort.

SESSION VI**TIME: Thursday 10 June, 10:30-12:00****ROOM: Salon 6****TRACK: Collaborative Planning****TOPIC: Collaboration in Watershed Planning****MODERATOR: Susan Durden, IWR****PRESENTATIONS:*****Update on Three Regional/Programmatic Biological Opinions in South Atlantic Division******Presenters: Kenneth Dugger and Terri Jordan, Jacksonville District, Doug Piatkowski, Wilmington District and Daniel Small, South Atlantic Division***

Abstract: In SAD there are two Regional Biological Opinions (RBO) with National Marine Fisheries Service (NMFS) and one Programmatic BO (PBO) being drafted with Fish and Wildlife Service (FWS) under Section 7 of the Endangered Species Act. The RBOs cover dredging activities along the south Atlantic from North Carolina through Florida (SARBO) and the Gulf of Mexico, Florida to Texas. The Programmatic BO will cover beach nourishment and shore protection activities in Florida.

Benefits include the simplification and expedition of the consultation through (1) time and cost savings, (2) consistency for similar impacts, (3) holistic “action” perspective, (4) holistic “species” and “bio-region” perspective, (5) Agencies collaborating working in a regional context rather than individual project consultations. Costs include the possibility of expansions/additions of “Terms and Conditions” above those in previous opinions. Some of these additions/expansions may be “reasonable” to implement and “prudent” to benefit the species, others are not.

The SARBO is currently under re-initiation of consultation (Biological Assessment submitted in 2008). Drafting of the RBO has begun. SAD is working with NMFS to address requests for additional information. After five years of negotiation among three FWS Offices, two Districts, SAD, and Florida Fish and Wildlife Conservation Commission, a PBO will be requested/issued.

Supporting Reconnaissance-Level Planning using Shared Vision Planning to Restore the West Maui Watershed***Presenters: Stacy Langsdale, Institute for Water Resources; Cindy Barger, Honolulu District***

Abstract: Collaboration is becoming the new standard in Corps Planning, but managing the natural and human complexity of watersheds remains a challenge. Shared Vision Planning provides an approach to organize the complexity in a way that integrates stakeholder participation and allows them to learn from each other, increasing trust, understanding, and respect – factors that increase the chances for successful decision making. In March 2009, the Institute for Water Resources supported the Honolulu District in conducting a stakeholder workshop for the West Maui Watershed Reconnaissance study. The study included consultation with established environmental organizations, community organizations, government agencies, and researchers to (1) assess current understanding of ecosystem function; (2) compile concerns, data gaps and research questions, and (3) identify possible local cost share partners. During the workshop, stakeholder groups developed influence diagrams that captured each group member’s system-level understanding of the watershed issues. After comparing each group’s diagrams, stakeholders shared what they learned from the experience. Stakeholders found the activity clarified interconnections and revealed different perspectives. The activity also helped to identify gaps in understanding and associated research

questions, as well as potential policy options. A consolidated diagram will serve as a foundation for future planning stages, including decision support tools.

The Role of Institutional Analysis in Developing a Collaboration Strategy for Watershed Planning

Presenters: Patricia A. Newell and Edwin J. Rossman, Tulsa District

Abstract: Collaboration and the watershed focus are at the center of current Corps approaches to water resources planning. The Corps' Strategic Plan for the Civil Works Program for FY 2004-2009 and the "Actions for Change" along with other current guidance stresses addressing problems at the watershed level by collaborating with agencies and associated stakeholders in the decision-making process. The multi-jurisdictional and multi-stakeholder nature of watershed use and management creates challenges for watershed planners. Planners have to address complex and intertwining biophysical and human systems along with the tasks of collaborating with diverse social and political institutions and organizations. The Corps offers many tools available to facilitate collaboration. However, basic questions have to be addressed before those tools can be applied. The first task for collaboration strategy development is to identify all the parties who come into play in managing watershed resources. In order for collaboration to work, planners must have an understanding of the roles, responsibilities and capabilities of those involved in the process. This presentation will discuss how institutional analysis was used in a Tulsa District watershed study- Oologah Lake Watershed Feasibility study. Using a lessons learned approach, the presentation will discuss the watershed issues and describe techniques used to identify the key agencies and stakeholders in the watershed, while illustrating how institutional analysis is useful in developing an effective collaboration strategy.

Collaborative Planning within the Buffalo River, NY Area of Concern

Presenter: Byron Rupp, Buffalo District

Abstract: The Buffalo River, located in Buffalo, NY, is one of 43 areas of concern in the Great Lakes basin. Environmental challenges within the Buffalo River include contaminated river sediments, poor water quality, a lack of public access, and insufficient fish and wildlife habitat. A unique public-private partnership including the United States Army Corps of Engineers, Buffalo District; New York State Department of Environmental Conservation (NYSDEC); U.S. EPA's Great Lakes National Program Office (GLNPO); Buffalo Niagara RIVERKEEPER® (BNR), and the Honeywell corporation, is developing plans to address a number of environmental problems affecting the Buffalo River. In the past, individual agencies implemented projects to address some of these problems. Specific cleanup efforts, however, were not designed to address multiple environmental issues. The new partnership brings together resources and expertise to plan comprehensive cleanup of the Buffalo River and to streamline the regulatory approval process. Its goal is to transform the river into a beneficial environmental, economic, and community resource.

As a first phase of this project, The Corps of Engineers Buffalo District plans to dredge approximately 500,000 cubic yards of sediment from the navigation channel starting in the fall of 2010. This presentation will describe the collaborative planning processes which resulted in the funding of nearly \$7 million of Great Lakes Restoration Initiative (GLRI) funds for the Buffalo District to conduct dredging on the Buffalo River.

SESSION VI

TIME: Thursday 10 June, 10:30-12:00

ROOM: Salon 7

TRACK: Collaborative Planning

TOPIC: Initiatives and Emerging Issues

MODERATOR: Shawn Komlos, IWR

PRESENTATIONS:

No Plan is an Island, the Post Hurricane Katrina Collaborative Partnership Environment in Mississippi

Presenter: Tom Smith, Mobile District

Abstract: The Mississippi Coastal Improvements Program (MsCIP) comprehensive plan project elements related to Hurricane and Storm Damage Reduction, Salt Water Intrusion, Shoreline Erosion and Fish and Wildlife Preservation. The Chief's report for the MsCIP plan was forwarded to Congress on January 14, 2009 and the project components stretch across a local population that exceeds 250,000 and interfaces with missions from several local, state and federal agencies. Implementation of the \$1.2 Billion MsCIP plan is in progress with several projects including Restoration of the Mississippi Barrier Islands, Repair and enhancement of the Long Beach Drainage Canal and Improvement of the Forrest Heights Levee.

This presentation will discuss the collaborative approaches regarding the Barrier Islands, which are owned by the National Park Service, and the coordinated missions of the Corps and the Natural Resource Conservation Service regarding Long Beach Drainage Canal and the Forrest Heights Levee. In addition, the collaborative roles of the local citizenry, elected officials, State and Federal Agencies and diverse elements from within the Corps, in the planning and implementation effort will be discussed.

Managing Invasive Plant Species in the Picayune Strand Restoration Project

Presenter: David Bauman, Jacksonville District

Abstract: In June 2009, the Corps issued a Civil Works Memorandum establishing a nationwide invasive species policy complimenting the National Invasive Species Act. The Picayune Strand Restoration Project (PSRP) is implementing this policy through the creation and implementation of a Vegetation Management Plan focusing on the control of invasive, nuisance and exotic plants.

PSRP is a leading project within the Comprehensive Everglades Restoration Plan. PSRP will fill canals and remove an extensive grid of roads to restore wetland function to over 55,000 acres in southwest Florida. Prior to development during the 1960's, Picayune Strand was dominated by cypress forest and associated plant communities. Currently, many of the wetland plant communities have transitioned to an upland forest frequently dominated by cabbage palm, a native species now occurring in unnaturally high densities, with an understory of Brazilian pepper, a highly invasive, exotic shrub.

One of the primary project objectives is the reestablishment of natural plant community distribution and composition. To achieve this objective, nuisance and exotic plant control is essential. A special team was organized with experts from several Federal and state agencies to create a vegetation management plan consisting of two parts: exotic plant control in the construction footprints, and exotic plant control in the entire project area.

Paradise Creek - Urban Restoration

Presenter: Margie McGill, Walla Walla District

Abstract: The Paradise Creek ecosystem restoration project presented the University of Idaho and the Corps of Engineers the opportunity to align missions to accomplish a sound water solution to the restoration needs and flooding problems of Paradise Creek. The purpose of the Paradise Creek Ecosystem Restoration Project is to restore a highly degraded section of Paradise Creek in the Moscow, Idaho area. Restoration would be accomplished by creating a healthy, diverse, and sustainable stream condition in Paradise Creek through the University of Idaho campus. Some of the other benefits of this project include enhanced environmental sustainability, storm water quality improvements, improved flood damage reduction, and opportunities for research in bioremediation of storm water run-off, and long term impacts and affects of stream channel construction and restoration on plants, animals and entire ecosystems. The project included collaboration with multiple entities including the City of Moscow, local non-profits and legislators. The project was authorized in 2007 and received ARRA funds in 2009 to complete design and construction. The construction will be complete in October of 2010.

Civil Works on the Edge - Unique Planning Challenges and Opportunities in Rural and Remote Communities

Presenters: Lorraine Cordova and Bruce Sexauer, Alaska District

Abstract: The temperature is sub-zero when we hop in the back of the pickup taking us to the gravel airstrip. Bringing sleeping bags and food on TDY is a must as there are no hotels or restaurants. We leave behind our extra food and water with the family whose floor we had just slept on. At the previous night's public meeting we discussed relocating the community off the barrier island the has been experiencing flooding and erosion. In recent years the protective icepack has been forming later and breaking up earlier, exposing the community to more storms. Most of the audience at the meeting spoke broken English; others relied on friends to translate the proceedings to their native Y'upik language. Holding public meetings in remote communities is one of many challenges the Corps overcomes in developing Civil Works projects in remote Alaska. This presentation focuses upon how facing remote conditions cultivates unique approaches in planning. Issues include categorizing benefits from a subsistence economy, stretching policies and procedures to their limit, engaging HQ from across the continent, and seeing first hand the effects of climate change. The goal of this presentation is to encourage planning teams to think creatively, how to develop solutions for seemingly unsolvable problems, and see how the planning process can be creatively adapted to develop water resource solutions in remote places.

SESSION VI**TIME: Thursday 10 June, 10:30-12:00****ROOM: Salon 8****TRACK: Planning Community of Practice****TOPIC: Benefit Analysis for Ecosystem Restoration****MODERATOR: Antisa Webb, ERDC****PRESENTATIONS:*****Setting a Reference Condition in Delta Streams of the Lower Mississippi River Basin******Presenters: Jack Killgore and Jan Hoover, Environmental Laboratory-ERDC,
Dave Johnson and Kent Parrish, Vicksburg District***

Abstract: Delta streams occur in agricultural landscapes impacted by low flows, sedimentation, and lack of forested riparian zones. Consequently, fish assemblages are comprised of tolerant, widespread species that thrive in impaired, hypoxic waters. There is interest in restoring delta streams, but a standard of comparison, or reference condition, is difficult to define due to widespread agricultural activities in the lower Mississippi River Basin. Our goal was to develop metrics characterizing the biotic integrity of fish assemblages in delta streams and compare metrics among three types of reference conditions: historic, minimally-disturbed, and best attainable. Five metrics were calculated that reflect taxonomic complexity and habitat preferences of the fish assemblage. We compared metrics among seven watersheds in the lower Mississippi River basin with different levels of anthropogenic impacts. Scant fishery reports prior to deforestation and widespread flood control in delta streams indicate greater numbers of rheophilic and benthic species. Minimally-disturbed streams have a similar pattern where darters and benthic minnows often predominate. However, highly altered streams have homogenized fish assemblages and restoring them to minimally-disturbed or historic conditions is not practical. Fish metrics do, however, indicate improvements to the fish assemblage using the concept of best attainable conditions, also called objective-based (e.g., removing sediments, water augmentation). Our study indicates that fish metrics can quantify benefits of restoration measures that are developed under reasonable assumptions in the planning process.

Using General Land Office Surveys To Establish Baseline Conditions For Ecosystem Restoration***Presenter: Sarah Miller, ERDC***

Abstract: This presentation will describe the General Land Office (GLO) surveys conducted in the 18th and 19th centuries, prior to extensive settlement of the frontier regions of the United States, and how the records from those surveys can be used today to help guide ecosystem restoration planning. Throughout much of the newly independent United States, the GLO surveyors recorded information on hydrography and terrain, as well as specific data on vegetation composition and structure. When these notes and measurements are transferred to a Geographic Information System (GIS) and overlain on modern maps and aerial photographs, the information they contain can provide insight into both the natural and man-made changes that have occurred to the physical and biological environment of a region. This can aid ecologists in establishing a reference condition for a study area and help them to define opportunities for ecosystem restoration. That process is illustrated here using the GLO survey data for a unique wetland complex called Grassy Lake in southwestern Arkansas.

Conceptual advantages of population-unit indicators over habitat-unit indicators of ecosystem restoration benefit.

Presenter: Dick Cole, Institute for Water Resources

Abstract: Important conceptual differences underlie habitat-unit (HU) indicators of ecosystem restoration benefits and indicators based on species population units. Corps planning guidance indicates that the desired outputs from restoration projects are self-sustaining ecological resources. The value added by projects therefore depends on the sustained restoration of desired resources and supporting ecosystem structure and function. Knowing the needs of colonizing populations is essential to realize benefits from project plans. HUs indicate a subset of desired resource needs through selected habitat needs of indicator species. Even when indicator species are representative, the HU does not indicate all ecological needs including the amount of habitat required to sustain viable populations. It therefore fails to indicate sustainability benefit in incremental cost analysis. In contrast, a new indicator, the Biodiversity Security Index (BSI), addresses the desired resources directly through habitat and other needs of viable population units using a risk-management protocol that includes the total habitat area required. Unlike the BSI, HU indicators of value added cannot be compared directly across projects for program purposes because habitat needs of desired resources at each project are unique. These and other aspects suggest that substantial improvements in benefits estimation are possible using the BSI or other metric based on species population units. Potential limitations are described.

Environmental benefits assessment of fish passage restoration on the Truckee River, Nevada

Presenter: Jock Conyngham, ERDC

Abstract: As part of a large ecosystem restoration and flood management project on the Truckee River, the Environmental Laboratory developed and assessed a range of alternatives for a basin-wide fish passage program extending from Lake Tahoe in California to the system's terminus at Pyramid Lake in Nevada. Assessment of environmental benefits and financial costs of alternative passage restoration strategies was then required. In coordination with a diverse array of local, state, tribal, and federal partners, EL scientists identified viable alternatives for bidirectional passage at 17 structures and developed a methodology for quantifying the relative benefits of fish passage improvement alternatives targeting eight native species (two of which are threatened or endangered). These benefits calculations incorporate eight critical variables of upstream and downstream passage as well as larger restoration goals. Due to gaps in knowledge and data, some of these parameters are subjective, index-based measures. Individual parameters were scored by a panel of subject matter experts, and statistical tools were employed to assess variability in responses. The analysis specifically addressed dependent benefits among alternatives (cases where the degree of benefits of removing one obstruction depended on actions taken at other obstructions). This presentation will provide an overview of the project and focus on the development of techniques to account for system-wide benefits when dependent relationships, uncertainty, and knowledge gaps must be addressed.

SESSION VII

TIME: Thursday 10 June, 1:30-3:00

ROOM: Salon 3

TOPIC: Developing Successful Documents

MODERATOR: Jeff Trulick, HQ

PRESENTATION:

Developing Successful Documents

Presenters: Alicia Kirchner, SPK & Jeff Trulick HQ

Abstract: This session is designed for district planners to better navigate the Planning Guidance and related Civil Works project development processes and guidance. The presentation will present ideas from both the HQ and District perspectives with the goal being more proactive engagement of the vertical team to better ensure the delivery of approvable decision documents. This includes several examples and case studies. Major “Take Away Points” from the session include: utilizing “extra” processes more effectively, proper planning of scope, schedule and budgets for the CW processes and more effective teaming at the District level to ensure products are policy compliant and approvable the “first time”. Time will be allotted for your questions and discussions.

Sacramento District Planning Chief and HQ Office of Policy Review will present an informative discussion on key ways, from both the DC level and the District perspectives, that teaming can be done on a more proactive basis to navigate the Planning Guidance and Civil Works process to produce approvable documents on a more routine

SESSION VII

TIME: Thursday 10 June, 1:30-3:00

ROOM: Salon 4

TOPIC: Sea Level Change: New Guidance and Discussions

MODERATOR: Rolf Olsen, IWR

PRESENTATION:

Sea Level Change: New Guidance and Guidance

Presenter: Rolf Olsen, Institute for Water Resources

Abstract: The US Army Corps of Engineers (USACE) released an Engineering Circular on Incorporating Sea-Level Change Considerations in Civil Works Programs (EC 1165-2-211) in July 2009. The purpose of this session is to review the EC and discuss issues and lessons learned from implementing it.

Potential Topics:

- Review of Incorporating Sea-Level Change Considerations in Civil Works Programs (EC 1165-2-211)
- Issues in decision-making with multiple scenarios
- Implementing sea level change guidance in Florida
- Results of Sea Level Change ETL kick-off workshop
- Other case studies of implementing the Sea Level Change EC

SESSION VII

TIME: Thursday 10 June, 1:30-3:00

ROOM: Salon 5

TOPIC: Policy Update: WRDA 2007 and Beyond

MODERATOR: Jan Rasgus, HQ

PRESENTATION:

Policy Update: WRDA 2007 and beyond

Presenter: Jan Rasgus, HQ

Abstract: Status on implementation of key WRDA 2007 provisions including planning, the Principles and Guidelines, independent review of Corps projects, watershed and river basin assessments, regional sediment management, and mitigation for fish and wildlife and wetlands losses. The session will also briefly address the authorization and implementation process, and will preview initiatives envisioned for the next WRDA.

SESSION VII

TIME: Thursday 10 June, 1:30-3:00

ROOM: Salon 6

TOPIC: Environmental Flows and the Sustainable Rivers Project

MODERATOR: Lisa Morales, HQ

PRESENTATIONS:

Environmental Flows and the Sustainable Rivers Project Session Organizers

Presenter: Lisa Morales, HQ

Abstract: Corps planners and managers are increasingly faced with the challenge of meeting multiple – and at times competing – demands for water nationwide. Social expectations for flood damage reduction, water supply, navigation, hydropower, recreation and environmental protection and restoration are further complicated by uncertainty in future patterns of precipitation and river flows. Through the Sustainable Rivers Project (SRP), a partnership with The Nature Conservancy, the Corps is developing and advancing innovations in adaptive water management that restore environmental health and economically-important ecosystem services downstream of Corps dams, while meeting other demands for water.

At the heart of the SRP is work at demonstration sites across the country – currently 36 federal reservoirs in 12 states – that involves quantifying and implementing “environmental flows” and integrating them into water management decision-making. While there have been considerable successes at these sites, opportunities and challenges remain to advance in areas such as integrated water and floodplain management and ecosystem service valuation. Further, the purpose of the SRP is to help guide innovative operations at Corps dams across the nation, which requires us to address the need for sufficient resources at that scale.

This session will provide a unique opportunity to hear joint presentations from a district commanders, district and Headquarters staff and Conservancy representatives. The presentations collectively will outline the importance of environmental flows and the SRP and highlight work at individual sites including successes to date and challenges that remain. Following the presentations, the representatives will sit as a panel for Q&A with the audience.

SESSION II

TIME: Thursday 10 June, 1:30-3:00

ROOM: Salon 7

TOPIC: Adaptive Management Forum

MODERATOR: Leigh Skaggs, HQ

PRESENTATION:

Monitoring and Adaptive Management: Responding to the Requirements of Section 2039 of WRDA 2007 in Implementing USACE Ecosystem Restoration Projects

Presenter: Leigh Skaggs, HQ

Abstract: Often characterized as “learning by doing,” Adaptive Management (AM) is a structured, iterative process of optimal decision making in the face of uncertainty, with an aim to reducing uncertainty over time via system monitoring. The information accrued through monitoring is used to improve future project operations, management, and, potentially, design, to maximize one or more resource objectives.

In the context of USACE ecosystem restoration projects, AM is a widely accepted but, in general, difficult to implement technique for verifying progress and refining implementation to better achieve the environmental benefits those projects were formulated to achieve. The success of small and large ecosystem restoration projects has been difficult to document and confirm for several reasons. In order to better verify and ultimately attain restoration success, USACE Implementation Guidance for Section 2039 of WRDA 2007 requires that monitoring and AM plans be developed for all ecosystem restoration projects. The guidance addresses topics ranging from the development and roles served by monitoring activities, ecological success criteria, and the role of the Federal government as a cost-share partner for up to 10-years of project-level monitoring. The guidance also requires development of AM (or contingency) plans that use information generated by the monitoring plan to address uncertainties regarding a project’s achievement of desired outputs/benefits/results. Further, the costs of potential adjustments to the project, whether operational or structural, must be explicitly described and will be cost-shared between the Corps and non-federal sponsors.

The presentations that comprise this session will identify challenges and opportunities associated with integrating monitoring and AM strategies into the USACE planning process for several large-scale ecosystem restoration projects, including the Comprehensive Everglades Restoration Plan (CERP), the operation of the Missouri River Mainstem System, the Louisiana Coastal Area (LCA) Program, and operations and management of the Kissimmee Chain of Lakes in Florida. The presentations will address monitoring and AM strategies at both programmatic, regional, and site-specific levels and will cover such concepts as 1) stakeholder engagement; 2) development of measurable objectives; 3) success criteria; 4) structured decision making; 5) uncertainty analysis and risk management; 6) analysis of potential adaptive management actions with cost estimates and anticipated benefits; 7) multi-agency monitoring and assessment; and 8) adjusting project and/or program implementation. Real-world examples of how interagency roles and priorities, conflicting water management schedules, endangered species impacts, and numerous technical challenges can impact adaptive management plans and operations will be presented.

These presentations will include perspectives from USACE’s Headquarters, Jacksonville District, Omaha District, New Orleans District, Engineering Research and Development Center, and Institute for Water Resources, as well as those of the United States Fish and Wildlife Service Vero Beach Ecological Services Office.

SESSION VII

TIME: Thursday 10 June, 1:30-3:00

ROOM: Salon 8

TOPIC: Planning Centers of Expertise -- Roundtable

MODERATOR: Susan Hughes, HQ

PRESENTATION:

Planning Centers of Expertise – Roundtable

Presenter: Susan Hughes, HQ

Abstract: Presentations and roundtable discussion with leaders from the Planning Centers of Expertise (PCXs) focused on the roles of the PCXs and how best to engage them. Emphasis in this interactive session will be on practical tips to ensure effective interaction with the Centers and the format will encourage questions and discussion from the audience.

- **Adams, Tom** is a consultant to the U.S. Army Corps of Engineers, employed by HDR Engineering. He is retired from the Corps after working in planning fields in Los Angeles District and Sacramento District. His more recent work in Sacramento was plan formulation for multi-purpose projects along the American River and the Yuba Rivers. He has a bachelors degree in Renewable Natural Resources from the University of California, Davis, and a Masters in Landscape Architecture from Cal Poly University, Pomona.
- **Adkins, Jeffery** is an economist with the NOAA Coastal Services Center in Charleston, South Carolina who promotes the use of economics by state and local government and other managers of our nation's coastal resources. Areas of interest include ocean economics, market and non-market values, and return on investment. Mr. Adkins has a MS degree in Water Resources Administration (Southern Illinois University) and a BBA in economics (Marshall University). Before joining NOAA in 2001, Mr. Adkins worked for 22 years as an economist and planning chief for the US Army Corps of Engineers (Inland Navigation Planning Center and Charleston District).
- **Baker, Jeannette M.** is a Biologist with United States Army Corps of Engineers (USACE) Institute for Water Resources in Alexandria, Virginia. She serves as the USACE Liaison to the Natural Resources Conservation Service (NRCS) under the NRCS/USACE Partnership Agreement to improve collaborative efforts and explore new areas of potential cooperation. Jeannette has a Bachelor of Science Degree in Biology from the University of California at San Diego. Jeannette has worked for the federal government for over 18 years and USACE for over 15 years.
- **Baker, Penni** is an Information Technology Specialist in the Water Resources Systems Division, US Army Corps of Engineers, Hydrologic Engineering Center, in Davis, CA. She has over 25 years of experience in software programming, designing, testing, and user documentation and support at HEC. In addition to working on HEC-WAT & the additional FRM module, she has contributed to the development of several of HEC's major planning software packages (HEC-FDA and HEC-FIA) and the Corps Water Management System software (CWMS).
- **Barger, Cindy** is a Project Manager in Honolulu District Civil and Public Works Branch, Programs and Project Management Division overseeing several of the District's watershed projects. Ms. Barger has been with the Corps for 15 years on collaborative planning efforts including supporting Seattle District Regulatory, overseeing several large EIS's in Honolulu District, managing international humanitarian assistance projects, and representing Honolulu District on several interagency and advisory councils. Ms. Barger has a B.A. in Archaeology from U.C. Berkeley and a Masters in Coastal Ecology/Coastal Zone Management from University of Washington.
- **Bauman, David** is a biologist in Jacksonville District's Planning Division, and is the Corps' environmental compliance and ecosystem restoration lead for the Picayune Strand Restoration Project. He has over eight years of environmental compliance, water resources planning, and ecosystem restoration experience with the Corps, including five years in the Sacramento District, and three years of environmental compliance experience with FEMA Region 9. He has two

undergraduate degrees from California State University, Chico, California, and a law degree from Gonzaga University School of Law in Spokane, Washington, where he specialized in environmental policy and natural resources law.

- **Bergmann, Kathleen M.** is a Lead Planner for the Los Angeles District in Water Resources Planning out of the Phoenix Office. She is a Physical Scientist with 11 years of experience in planning and also represents the Los Angeles District as the Tribal Liaison. Her areas of professional interest are in outreach to Tribes, planning, geomorphology of arid rivers and deserts, and in geographic information systems (GIS). She has a B.S and M.A. in Physical Geography from Arizona State University.
- **Kevin W. Bluhm** has worked 24 years at the St. Paul District, and currently serves as Unit Leader for the Economics Unit and Public Involvement Team Leader for UMR Navigation & Ecosystem Sustainability Program. Kevin oversees the economic, social, and public involvement workload for the district. He has built a contracting network for economic/GIS data collection, social acceptability/values interviews, and public involvement programs. He graduated from the University of Wisconsin with a B.S., Agricultural Economics, Minor in Journalism.
- **Brandon, David** is Chief of Economics, Cultural Resources, and District Quality Control in Planning Branch, Omaha District, U.S. Army Corps of Engineers. He received BS and MS degrees in Economics from the University of Nebraska in Omaha. Prior to his current position, he was the Chief of Plan Formulation for ten years in Omaha, and prior to that he was a staff Economist and then a Lead Plan Formulator/Project Manager, all in Omaha.
- **Brown, Jon** has been in the Corps for 33 years and currently serves as a regional technical specialist (navigation economics) in the Planning Branch of the Buffalo District. As member of the three Lakes District Great Lakes Navigation PDT, Jon provides economic metrics for federal GL ports and channels in support of the prioritization of the annual operation & maintenance budget, evaluating the economic viability of O&M on District harbors and all other Federal harbors on the Great Lakes. Jon has a M.A in Economics and a B.A. in Mathematics and is a Planning Associates Program graduate, class of 2003.
- **Brown, Stacy E.** is the Civil Deputy for the South Atlantic Division Regional Integration Team. She has 24 years of USACE experience with 3 years in San Francisco District, 2 years in Norfolk District, 12 years in Baltimore District, 1 year in the Office of the Assistant Secretary of the Army for Civil Works and 6 years in Headquarters. Ms. Brown has spent the majority of her career in the Planning discipline, she has also worked in the Engineering (H&H), Construction, Operations, and Program/Project Management disciplines. Ms. Brown has a BS degree in Civil Engineering, a BA degree in English and a Minor in Engineering Management from Tufts University. Ms. Brown is a Certified Project Management Professional.
- **Brummett, Brandon** is currently the Outreach Coordinator for the Louisville District, US Army Corps of Engineers. He works to educate state and local governments and Congressional staff about the Corps of Engineers programs and processes and works with them to see how the Corps of Engineers can assist in solving their water resource related issues. A registered Civil Engineer in the Commonwealth of Kentucky since 2002 and certified Project Management

Professional since 2007, he has 15 years of total professional experience and has been with the Corps since 1995.

- **Bucaro, David** is currently the Chief, Economic Formulation and Analysis Section, Planning Branch, Chicago District, U.S. Army Corps of Engineers. He has 10 years of technical and management experience in flood risk management and environmental restoration planning and engineering with the Chicago District. He received a BS degree in Civil Engineering from the Indiana Institute of Technology and a MS degree in Environmental Hydrology and Hydraulic Engineering from the University of Illinois Urbana-Champaign. He is a registered Professional Engineer and a member of the Planning Associates class of 2007.
- **Budai, Chris** has worked in Portland District for 24 years working in Geology, Geotechnical Engineering, and currently as a project manager. She earned a BS degree in geology from the University of Kansas (Go Jayhawks!) and a MS degree in geology from Portland State University. She is currently the project manager for the Willamette River Floodplain Restoration Study and will be presenting on this ecosystem restoration project
- **Byron Rupp** currently serves as a Physical Scientist in the Planning Services Team, U.S. Army Corps of Engineers, Buffalo District. He has 6 years experience as a lead planner and project manager for a wide variety of GI, CAP, and support for other agencies planning studies. He is currently serving as the lead planner for a 2010-2011 \$7 million dredging project of the Buffalo River funded through the Great Lakes Restoration Initiative (GLRI). He received BS and MS degrees in Geology from the State University of New York at Buffalo.
- **Cade, Beth** is a Community Planner for the Huntington District US Army Corps of Engineers. She holds BS and MS degrees in Geography from Marshall University. She works as a Lead Planner and Project Manager on a variety of water resource projects in the Plan Formulation section. She also serves at the New River Navigator or Federal Liaison for the New River. Prior to joining the Corps in 2003, she spent 12 years in local government most recently serving as the Planning Director for City of Charleston, West Virginia. She is also a 2007 graduate of the Planning Associates Program.
- **Caulk, Grady** is an Archeologist for the Jacksonville District Environmental Branch. He has a BA and MA in Anthropology/Archeology from Washington State University, with 10 years experience as an archeologist for the Jacksonville District and over 20 years experience as a Federal cultural resource specialist. He is primarily a prehistoric archaeologist with specialty in survey strategies and site evaluation. Prior to joining the COE Grady had experience with managing TCPs associated with Pacific Northwest Tribes with the US Forest Service.
- **Celmer, Gail** is Regional Archeologist with the Northwestern Division. She serves as Program Manager for the Federal Columbia River Power System Cultural Resources Program and is responsible for managing the cultural resources at 12 Corps dams and reservoirs in the Pacific Northwest. She received her B.A. in archeology and physical anthropology from the University of Illinois and her M.A. in physical anthropology from the University of Tennessee. She has been with the Corps since 1984 and has worked for Tulsa, Galveston, Seattle and Portland Districts in both the Planning and Regulatory Programs.

- **Chang, Wen-Huei** is an Economist with the Institute for Water Resources, US Army Corps of Engineers. Dr. Chang is specialized in conducting regional economic impact analysis, developing applications and providing training materials for planning and decision-making. His most recent work includes the development of tools to estimate the economic impacts of stimulus spending, and the development of models to provide a means for quantifying performance outputs as well as ranking incremental budget packages in a consistent manner throughout the Corps. He has a Master's degree from the University of Iowa and a Ph.D. degree from Michigan State University.
- **Chuck Spitzack** is currently the Program Manager for Upper Mississippi River and Illinois Waterway System Navigation & Ecosystem Sustainability Program. Prior positions have included Chief of Design, Chief of Planning, and Chief of Project Management Branches in the St. Paul District and Chief of Project Management Branch in the Rock Island District. He has master degrees in civil engineering and business administration. He is a registered professional engineer and a certified project management professional.
- **Cialone, Mary** is a Research Hydraulic engineer working in numerical modeling of hurricane surge and waves. She has Bachelor's of Civil Engineering from the University of Delaware and a Master's of Civil Engineering from Mississippi State University. She has been with the Corps of Engineers for 27 years.
- **Clark, Athline** is the Environmental Coordinator and a Project Manager in Honolulu District Civil and Public Works Branch, Programs and Project Management Division. Ms. Clark came to the Corps for the State of Hawaii Department of Land and Natural Resources. Ms. Clark also comes from a long background in collaborative planning and environmental management. Most recently, she was the State Superintendent for the Papahānaumokuākea National Marine Monument. Prior to that, Ms. Clark managed the State's Coral Program and State collaborative initiatives in support of the U.S. Coral Reef Task Force objectives and resolutions. Ms. Clark has a Bachelor's in Geography and a Masters in Community Planning from University of Hawaii.
- **Claseman, Ken** is the Senior Policy Advisor for Economics in the Office of Water Project Review at HQUSACE. He oversees policy review of economic analysis for all major Corps Civil Works decision documents. Ken began his career in Portland District in 1980. He did a 2 year stint as a HQUSACE Policy Review and then moved to Mobile District where he was Chief, Economics for over 18 years. Prior to his move to HQUSACE he was also the first Deputy Director of the Deep-Draft Navigation Planning Center of Expertise. Ken has a Master's Degree in Applied Economics from Portland State University and has worked for the Corps for 30 years.
- **Cole, Dick** is an Environmental Planner at the Institute for Water Resources, U. S. Army Corp of Engineers. He received a B. S. in Forestry and an M. S. in Forest Zoology at the N. Y. State College of Forestry at Syracuse University and a Ph. D. in Zoology at The Pennsylvania State University. He is Emeritus Professor in Fish and Wildlife Sciences at New Mexico State University and has worked at IWR since 2000. His work is primarily focused on environmental benefits measurement and achievement of environmental sustainability.

- **Conyngham, Jock** is a Research Ecologist in the Environmental Laboratory of the Engineer Research and Development Center. His specialties include multi-scaled assessment, restoration, and monitoring of watersheds, streams and rivers, riparian zones, and aquatic populations. Jock has provided technical support for ecosystem restoration, fish passage projects, and dam removals across North America for thirty years. Jock received a Master of Forest Science and a Master of Philosophy in population ecology and anthropology from Yale University. Prior to joining ERDC in 2002, Jock was Director of Watershed Assessment and Geomorphic Restoration for the national office of Trout Unlimited.
- **Cordova, Lorraine** is Economics Section Chief for the Alaska District. She has a Bachelor in Business Administration and Economics from the University of Alaska Anchorage and is working on a Masters in Natural Resource Economics. Lorraine recently celebrated her four-year anniversary with the Corps and is currently enrolled in the Planning Associates program. She has 14 years experience in economics with state government and private consulting firms.
- **Cornish, Mark** is the Chief of the Environmental Planning Section of the Environmental and Economic Analysis Branch, Rock Island District Army Corps of Engineers. He leads the PDT responsible for designing the first fish passage project on the Upper Mississippi River at Lock and Dam 22. He has worked professionally on Mississippi River issues for the past 22 years, 12 years with the Corps of Engineers preceded by 10 years with the Iowa Department of Natural Resources. He has a BS degree from Iowa State University and a MS degree from Western Illinois University.
- **Davis, Stuart** has worked for the Corps of Engineers for over 30 years. He started St. Louis District working on public participation and economic analysis of flood risk management projects. He now manages the Flood Damage Data Collection Program. His work includes data collection and analysis for generic damage relationships, IWR-GeoFIT, flood damage to roads. He also manages the Corps civil works public surveys. His degree includes a B.A. in economics from the University of Illinois, M.A. in economics from the University of Colorado, and an M.A. in urban affairs from St. Louis University.
- **Dietl, Mike** is the Chief of Flood and Storm Risk Reduction Section in the Planning Division of the Sacramento District, U.S. Army Corps of Engineers. Mike has 11 years of experience with the Corps and is a graduate of the 2008 Planning Excellence Program. Mike received the 2006 Planning Excellence Award for his work during the 2006 flooding in California's Central Valley. His work interests include working collaboratively to plan and construct flood risk management projects for the protection of life and property while balancing the needs of the ecosystem.
- **Drum, R. Gus** is a landscape architect and community planner at the Huntington District since 1973. Gus has a BSLA from WVU and a Master's in Urban and Environmental Planning from UVA. Gus has been a licensed landscape architect in WV since 1977 and passed the AICP exam in 1982. Gus formulated the first nonstructural projects in the Section 202 program in WV and KY. Recently his work has involved formulating and writing the Nonstructural Appendix component of the Mississippi Coastal Improvement Plan and as lead planner formulating and writing portions of the Ohio River Basin Comprehensive Reconnaissance Report.

- **Dugger, Kenneth, Jacksonville** District, Technical Assistant to Environmental Branch Chief: MS in Botany from University of Florida with a Systems Ecology focus. 25+ years in environmental compliance, protection, and evaluation. Past 15 years working primarily on Corps Navigation and Shore Protection projects along Florida's Coast. Seeking collaborative, sustainable, innovative, timely, and cost-effective solutions that integrate the environmental, economic, engineering, and cultural aspects of Corps projects.
- **Duman, Jo Ann** is currently Chief of Planning and Policy, Southwestern Division. She has been with the Corps of Engineers for 30 years and began her career as an economist with the Fort Worth District. Her publications have primarily been about applied economics for Corps projects and other public or capital investment decisions.
- **Duncan, Don** is a senior hydraulic engineer in the St. Louis District Army Corps of Engineers Watershed Management Section. He has 7 years of experience in developing and utilizing hydraulic models in complex water resources projects. Don is a licensed Professional Engineer in the State of Missouri and holds a BS and MS in Civil Engineering from the University of Missouri - Rolla.
- **Dunn, Jennifer** has served as the National Silver Jackets Program Manager, operated through the Institute for Water Resources in Alexandria, Virginia, since October 2008. She has 15 years of experience with USACE, as a liaison to the Department of Homeland Security, a planner with the South Pacific Division, a planner and FPMS/PAS Program Manager at San Francisco District and as an environmental engineer in the Sacramento District. She received her Master's degree from UC Davis in 1997 and is a Certified Floodplain Manager.
- **Durden, Susan** works for the Institute for Water Resources of the Corps of Engineers. Her experience includes working for the Corps of Engineers at Savannah District, Baltimore District and Nashville District. In addition to her tenure with the Corps of Engineers, Ms. Durden was the Eastern and Great Lakes U. S. Regional Manager for the National Marine Sanctuary and National Estuarine Research Reserves programs at NOAA Headquarters. She worked as an economic development specialist at the Northwest Alabama Council of Local Governments and has taught as an adjunct faculty member at several colleges. She is from central Illinois where she was raised on a family farm which has been in operation for over 100 years.
- **Edwards, Doug PhD** is a Senior Environmental Planner for the Sacramento District of the U.S. Army Corps of Engineers. A member of the American Institute of Certified Planners (AICP), he holds a PhD in American History from the University of Maryland, where his research focused on Trans-Mississippi regional development. After 10 years as an environmental consultant, he joined the Corps and currently serves as the lead environmental planner for the CALFED Levee Stability Program, the Delta Islands and Levees Feasibility Study, the Central Valley Integrated Flood Management Study, and the Lower San Joaquin River Feasibility Study.
- **Ellsworth, Doug** is currently acting as a "Senior Asset Management Specialist" on the HQ Asset Management team in the Operations and Regulatory Division, Directorate of Civil Works, his fifth HQ assignment, including two in the Pentagon. He has been a member of the HQ AM team for over four years, and is actually an ERDC-CERL researcher. His former positions at ERDC-CERL

include Assistant Technical Director for Installation Operations, annually developing and overseeing \$40-50M of R&D and military installation customer funding. He has a Masters of Architecture and a Masters of Science in Civil Engineering, both from the University of Illinois.

- **Fischenich, Craig** is a principal investigator with the ERDC Environmental Laboratory, and is responsible for developing new tools and methods for ecosystem restoration in the Corps. He has more than 25 years experience at the Omaha District and ERDC EL, and has worked on more than 300 projects throughout the U.S. and overseas. He has a PhD in Hydraulics from Colorado State, and a Master's in Environmental Engineering and Bachelor's in Civil Engineering from South Dakota School of Mines and Technology.
- **Fitzgerald, Steve** P.E. is the Chief Engineer for the Harris County Flood Control District (HCFCD) in Houston, Texas. He is program manager for all federal Corps of Engineers projects and was on the Corps of Engineers' Hurricane Katrina IPET team as a co-lead of the Interior Drainage/Flooding Team. He is the Chairman of the Flood Management Committee for the National Association of Flood and Stormwater Management Agencies, and the Vice President of the National Hydrological Warning Council. He received a B.S. in Civil Engineering from Stanford University and a M.S. in Civil Engineering from the University of Illinois at Urbana-Champaign.
- **Fleeger, Tim** is an Environmental Resources Specialist in the Omaha District's Environmental Resources and Missouri River Recovery Program (MRRP) Plan Formulation Section. He received his B.S. in Earth Sciences from Penn State and began his career as a fisheries researcher on Lake Erie for the Pennsylvania Fish and Boat Commission. He has been with the Omaha District for the past seven years and is a graduate of the 2009 Planning Associates program. He is currently the MRRP Adaptive Management Program Manager, serves on the Integrated Science Program Management Team, and works closely with the Emergent Sandbar Habitat program that seeks to restore nesting habitat for two federally-listed shorebird species on the Missouri River.
- **Fraenkel, Naomi** has been a Civil Engineer in Plan Formulation Branch in New York District for seven years. Her work focuses on the plan formulation and economics for deep draft navigation projects. She has a combined BA/BS Degree from Barnard College and the School of Engineering at Columbia University as well as Masters Degree in Public Policy and Urban Planning from Harvard University. Naomi was a Planning Associate in 2007.
- **Franks, Maria** is an Environmental Protection Specialist in Planning Division, Planning and Environmental Services Branch, U.S. Army Corps of Engineers Baltimore District. She is a project manager supporting military installations and organizations in the responsible management of natural resources. She is also a staff advisor to the Baltimore District and North Atlantic Division Commanders for the Interstate Commission on the Potomac River Basin and the Susquehanna River Basin Commission. She has worked with the U.S. Army Corps of Engineers since 2001, and received a Master's Degree in Geography and Environmental Planning from Towson University in 2006.
- **Fritsche, Jessica** An emerging professional at CDM, Ms. Fritsche received her Master of Science degree from the Geography and Environmental Resource Management Department at Southern Illinois University, with focus on

floodplain management. Since her start at CDM, she has provided technical support for various projects funded by the U.S. Army Corps of Engineers, Institute for Water Resources.

- **Fuentes, Jerry** is a Regional Technical Specialist for Plan Formulation in the Sacramento District. He has 14 years of experience in planning for environmental and flood risk management, as well as 6 years of cultural resources management. He has both a B.A. and M.A. in Public History from California State University, Sacramento.
- **Fujitsubo, Miki** is a Regional Technical Specialist located at the Sacramento District. Mr. Fujitsubo has over 20 years of Federal experience in design and water resource planning. Mr. Fujitsubo is currently coordinating various planning efforts within the Sacramento River Watershed and working with the FRM-PCX.
- **Gorecki, Doug** is a Regional Economist for the Buffalo District of the U.S. Army Corps of Engineers, where he splits his time between economic analysis, plan formulation, and project management of Civil Works projects. He has been with the Corps for 10 years, having spent two years in Environmental Analysis and 8 years in Economics and Planning. Doug received bachelor's degrees in both Economics and Environmental Science from the University of Rochester and a master's degree in Environmental Economics from Duke University.
- **Greer, Michael** is a Biologist and Regional Technical Specialist with the U.S. Army Corps of Engineers, Buffalo District, Planning Branch. He has worked at the Buffalo District for the last 10 years specializing in aquatic ecosystem restoration and watershed management. He has a M.S. in Environmental Science and a B.S. in Biology, both from SUNY College at Buffalo. Michael is also a graduate of the 2004 Planning Associates Program. Prior to working at the Buffalo District he was a high school biology and chemistry teacher.
- **Hales, Lyndell ,PhD** has been Program Manager of the "Monitoring Completed Navigation Projects (MCNP)" program for the past 5 years. He is a Hydraulic Engineer assigned to the Technical Programs Office of the ERDC Coastal and Hydraulics Laboratory (CHL) in Vicksburg, Mississippi. Previously, he served as Assistant to the CHL Program Managers of the Dredging Research Program, and the Dredging Operations and Technical Support program. He has BS and MS degrees from Mississippi State University (Hydraulic Engineering), and a PhD from Texas A&M University (Coastal and Ocean Engineering).
- **Harrelson, Danny W.** received his B.S. 1976 and M.S. 1981 degrees in geology from the University of Southern Mississippi, Hattiesburg, Ms. He has a total of 32 years experience working for state and federal government, private industry (oil and mineral exploration)and consulting firms (oil service, geotechnical and environmental). Mr. Harrelson has authored or co-authored 95 papers and abstracts on a variety of geologic subjects, published in numerous professional journals. Currently, he is employed as a research geologist for the U. S. Army Engineer Research Development Center, Geotechnical and Structures Laboratory, Vicksburg, Mississippi.
- **Hautzinger, Andrew** has worked for the U.S. Fish and Wildlife Service's Region 2 as a Regional Hydrologist. He provides water resource and water right support to four national wildlife refuges located in the state of Arizona, along the lower Colorado River. He has served for almost a decade as the Chair of the Bill

Williams River Corridor Steering Committee. Prior to his work with the USFWS, Andrew was employed with the U.S. National Park Service's Water Resources Branch, where he worked on a national scale providing technical support for the national parks.

- **Henderson, Jim** is an environmental planner in the Ecological Resources Branch, Environmental Lab, ERDC. He is involved with projects dealing with planning and evaluation of ecosystem restoration projects and has worked in environmental economics related Corps operation. The work presented here is an outgrowth of that environmental economics work
- **Hendrickson, Jon** splits duties as a Regional Technical Specialist for the Mississippi Valley Division specializing in environmental restoration and water quality; and as a Hydraulic Engineer with the St. Paul District. He has been providing hydraulic engineering support for ecosystem restoration for over 20-years in support of the Upper Mississippi River Environmental Management Program, the 9-foot Navigation Channel Program, and more recently the Navigation and Ecosystem Sustainability Program (NESP). Jon is a graduate of the University of Minnesota, Minneapolis, receiving a Master of Science in Civil Engineering in 1988. He is a registered engineer in the State of Minnesota.
- **Heng, Lynn** is currently a Project Manager/Lead Plan Formulator, Planning Branch, Omaha District U.S. Army Corps of Engineers, working with the Planning Integration Team on the Missouri River Authorized Purposes Study. He has a BS in Agronomy from the University of Nebraska, and a MS in Administration from Central Michigan University. He is a Registered Environmental Manager.
- **Hickey, John** is a Senior Hydraulic Engineer at the Hydrologic Engineering Center (HEC) of the U.S. Army Corps of Engineers. At HEC, he leads development of the Regime Prescription Tool (HEC-RPT) as well as the Ecosystem Functions Model (HEC-EFM) GeoEFM, and EFMSim. He is a registered professional engineer and received a master's in hydrologic science and engineering from Colorado State University and a bachelor's in environmental and forest engineering from the SUNY College of Environmental Science and Forestry. John is also pursuing a PhD in ecosystem and water resource management from the University of California (Davis).
- **Hodson, Tom** is currently Chief, Plan Formulation Branch at New York District, U.S. Army Corps of Engineers, and Adjunct Professor of Economics and Law at Fairleigh Dickinson University. He has earned a J.D. at the University of Pittsburgh and a Ph.D. in economics at the City University of New York, and is a member of the bar in Pennsylvania and New Jersey (currently inactive). He has been with the Corps for 14 years and his research interests include any topic in applied microeconomics.
- **Holland, Allen** is senior economist at Kansas City District. He holds a B.A. degree in economics and has been an economist at NWK for 24 years, particularly specializing in Missouri River flood risk management studies. He is the lead economist for flood risk management analysis on the Missouri River Authorized Purposes Study.
- **Hughes, Dan** is currently the Archaeological Technical Expert, Environmental Branch, Jacksonville District US Army Corps of Engineers. He has a MA degree in History and a MA degree in Anthropology and over 20 years experience in

archaeology and cultural resource management. Currently, he is finishing his PhD in applied anthropology from the University of South Florida.

- **Jarrett, Gwyn** is a Project Manager in Plan Formulation, Omaha District, US Army Corps of Engineers. She received a BS in Park Management from University of NE - Lincoln and a MS in Public Administration from University of NE – Omaha. She is a certified Project Manager Professional. Gwyn has combined professional experience as a Park Ranger, Outdoor Recreation Planner, Realty Specialist and Project Manager.
- **Johnson, Billy** is currently a Research Civil Engineer within the Water Quality and Contaminant Modeling Branch, Environmental Laboratory, Engineer Research and Development Center located in Vicksburg Mississippi. He has 25 years experience working in the Water Resources area. His technical experience involves hydraulic, hydrologic, sediment, and water quality modeling. In addition he is leading a team in developing models in the area of environmental characterization and risk assessment of military training ranges. He has a BS degree from Mississippi State University, a MS degree from Memphis State University, and a PhD from Colorado State University.
- **Jordan, Terri** Jacksonville District, Planning Division, Environmental Branch, Coastal Section. Ms. Jordan is a biologist with 17 years of federal service; nine with the Corps, and serves as an environmental technical specialist. She holds a double major Bachelor's degree in Biology and Marine Biology from Texas A&M University at Corpus Christi; a Masters in Environmental Policy from American University in Washington, DC and is a graduate of the 2009 Planning Associates Program. Her professional interests include marine species interaction with construction activities, noise in the marine environment and innovative project design to minimize impacts while achieving project goals.
- **Karnish, Diane** is currently in the Planning Division at the Rock Island District Army Corps of Engineers. She has 21 years of technical and management experience in planning; plan formulation; environmental planning; environmental compliance and impact assessment; programs and project management; and economics. She is currently in the Rock Island District but has worked in Omaha, St. Louis, and Walla Walla Districts as well as the North Atlantic Division. She has a B.B.A. in Management and a B.S. in Economics from Iowa State University, Ames, Iowa.
- **Kelsoe, Darrell** is currently the Economics Manager for Brown & Gay Engineering, Inc. and has more than 25 years of professional experience in economics, financials, and real estate appraisals; he offers extensive expertise in flood risk management studies with the USACE including feasibility and general reevaluation studies. His technical expertise includes risk-based analysis using the HEC-FDA modeling program, financial analysis, real estate appraisals, land use analysis and social impacts. He has a BS degree from Texas A&M University in Agricultural Economics.
- **Killgore, Jack PhD** is a Research Fishery Biologist in the Environmental Laboratory, Engineer Research and Development Center (ERDC), Vicksburg, Mississippi. He received a BA from University of Arkansas, Fayetteville; MS from Sam Houston State University, Huntsville, Texas; and a Ph.D. from the University of Mississippi, Oxford. Dr. Killgore interests include environmental biology of fishes, threatened (sturgeon) and invasive (Asian carp) fish species,

ecosystem restoration in large river systems, and environmental impact assessment of Corps flood control and navigation projects.

- **Kirchner, Alicia** is the Chief of Planning Division for the Sacramento District (USACE). Alicia has worked with the Corps' planning process and programs in various capacities for the past 20 years, having served as the Deputy Chief of Planning, branch chief, first-line supervisor, Regional Technical Specialist, and as a Project and Program Manager. She completed a detail to South Pacific Division as lead policy and planning specialist (2009) and is a graduate of the Planning Associates Program. Alicia has spent much of her career developing decision documents for projects that reduce the risk of flooding to urbanized areas in the District's area of operation. Alicia is a Sacramento native, received a B.A. in History from California State University at Sacramento in 1993, which she attended while working for the Corps as a student.
- **Komlos, Shawn** is a physical scientist with the U.S. Army Corps of Engineers Institute for Water Resources in Alexandria, Virginia, and is a co-project manager for IWR Planning Suite. Shawn began his career with the Corps in 2005 as physical scientist with the Jacksonville District after serving offices of the US Environmental Protection Agency and U.S. Fish and Wildlife Service. Shawn is a registered professional geologist who, prior to serving in the public sector, worked for the National Audubon Society and for an international environmental consulting firm performing assessments of environmental.
- **LaDart, Jeremy** works as an Economist for the Office of Water Project Review (OWPR), at Headquarters, USACE. The OWPR is responsible for conducting policy compliance review on decision documents for Civil Works Projects that are not delegated to the Major Subordinate Commands (MSCs). Mr. LaDart is also responsible for support to the Planning Community of Practice (PCoP) and the Economic Sub-Community of Practice. Prior to his current position, Mr. LaDart worked as a Regional Economist for the Mobile District Corps of Engineers. Mr. LaDart is a graduate of the Planning Associate's Program and graduated from the University of South Alabama with a Bachelor's of Science Degree in Economics.
- **Lamb, Joseph** is the Regional Technical Specialist in Coastal Storm Risk Management Economics for the Los Angeles District of the U.S Army Corps of Engineers, where he performs economic analyses of Civil Works Projects in Southern California and Arizona. He received a Bachelor of Science degree in economics from University of Wisconsin Oshkosh.
- **Langsdale, Stacy** is a Research Associate at the Institute for Water Resources in the Conflict Resolution and Public Participation Center of Expertise. During her three year term there, she has helped to develop performance measures and best practices for collaborative modeling, contributed to publications on Shared Vision Planning, and developed training materials. Dr. Langsdale has a Ph.D. in Resource Management, Environmental Studies from the University of British Columbia, a Masters in Hydrology from the University of Nevada, Reno, and a Bachelors in Civil Engineering from the University of Maryland.
- **Larson, Boone** is a registered EIT working with the Hydraulics and Hydrologic (H&H) Branch, New Orleans District Army Corps of Engineers. He has 1.5 years of experience in the field. He received a B.S. and M.S. in civil engineering from the University of Louisiana at Lafayette.

- **Legere, Richard H.** is a Lead Planner for the Los Angeles District. He works in the Arizona-Nevada office located in Phoenix. Mr. Legere is a Biologist with five years of experience in Planning and 11 years of experience as a Project Manager in the Corps Regulatory Program. He is currently working on ecosystem restoration, flood risk management and watershed studies. Prior to joining the Corps in 1993, Mr. Legere worked for the U.S. Army's Aberdeen Proving Ground in the field of chemical defense. He has a bachelor's degree in Biological Sciences from the University of Maryland.
- **Lin, Jeff** is a biologist in the Plan Formulation/Economics Branch, Wilmington District, where he works primarily on ecosystem restoration and coastal storm damage reduction projects. Prior to joining the Wilmington District in 2009 he worked for 8 years as a research biologist at the ERDC Environmental Lab, where his focus was on developing and applying wetland functional assessments and GIS tools for spatial analysis in ecosystem restoration projects. He has a BA in Neuroscience from Pomona College and a MEM in Wetland Ecology from Duke University, and is a graduate of the Corps 2009 Planning Associates class.
- **Lovetro, Keven** currently serves as a Supervisory Regional Economist in the Flood Risk Management Section of the Economic and Social Analysis Branch, New Orleans District. He leads a team of regional economists who conduct economic feasibility analyses for proposed flood risk management projects. As Certified Flood Plain Manager and a Corps employee since 1984, Mr. Lovetro earned his M.A. Degree in Economics and Finance from the University of New Orleans in 1985 and an M.A. Degree in International Affairs from the George Washington University.
- **Lutz, Kim** is the director of TNC's Connecticut River Program, managing conservation efforts across a 7.2 million acre, four state watershed. This project focuses on ecosystem flows, stream connectivity and floodplain restoration. Kim previously worked for the Georgia Chapter of TNC where she led the development of the Savannah River Basin Program, a multi-state, multi-agency effort. This collaborative effort led to the development of an ecologically-based water management plan. Prior to her work in Georgia, Kim worked for the Texas Chapter of TNC, the U.S. Army Corps of Engineers, and the Western Pennsylvania Conservancy. She holds B.S. and M.S. degrees in biology.
- **Lutz, Nicholas** is a regional economist with the Louisville District of the U.S. Army Corps of Engineers, in Louisville, Kentucky. He has a Bachelor of Arts from the University of Louisville and a Master's of Public Affairs from the School of Public and Environmental Affairs at Indiana University - Bloomington. Since joining the Corps of Engineers in 2009, his work has involved economic impact analysis and dam safety economics. He is a member of the Modeling, Mapping and Consequence Production Center, focusing on dam safety consequence analysis.
- **Lynn, Eric** joined the Kansas City District Army Corps of Engineers in 2004 and is currently a Project Manager in the Planning Branch. He is managing feasibility and design phase studies of existing levee systems and has experience with CAP and Dam Safety projects. He is a graduate of the District's Leadership Development Program, a certified Project Management Professional, and a registered Professional Engineer in the State of Kansas. He has a BS degree from

Rensselaer Polytechnic Institute, Troy, NY, and a Master's degree from the University of Kansas.

- **Maestri, Brian** is a Regional Economist serving in the Flood Risk Management Section of the Economic and Social Analysis Branch, New Orleans District. He is currently a Flood Risk Management Regional Technical Specialist for the Mississippi Valley Division. He was a member of the Interagency Performance Evaluation Task Force (IPET) Interior Flood Control Team in the wake of Hurricane Katrina. He has a Master's and undergraduate degree in Economics from the University of New Orleans (UNO) and has worked in the Corps since 1985. He has served as an interdisciplinary team member on several large-scale flood risk management including the Louisiana Coastal Protection and Restoration (LACPR) evaluation.
- **Males, Richard** has worked in water and environmental consulting since 1968, and, since 1982, has been owner of RMM Technical Services, Inc., a consulting firm in Cincinnati, Ohio. His primary professional activities have been in the arena of development and effective use of computer-based tools for water resource systems applications. Areas of specialization include design and implementation of advanced planning methodologies; Monte Carlo simulation modeling; risk-based analysis; decision support systems; and geographic information systems development and applications. He holds bachelor's and master's degrees in civil engineering, and a doctorate in water resource systems analysis, all from MIT.
- **Marcy, Julie** is a Research Biologist with the Engineer Research & Development Center's Environmental Lab. She has worked for the Corps for 27 years at ERDC, the Vicksburg District and on HQUSACE assignments. She has diverse professional experience as a Certified Professional Facilitator, Certified Government Performance Manager, Certified Wildlife Biologist, and national Quality Examiner.
- **Matheny-Katz, Marianne** currently works for the Office of the Assistant Secretary of the Army for Civil Works (Planning and Project Review Office). She is responsible for reviewing Chief's Reports, decision documents, policy issues and determination requests and assists in developing the Secretary's position. Ms. Matheny-Katz has 25 years of civil works experience, 7 years with the OASA (CW) and 18 years with USACE: 3 years with IWR, 12 years with Baltimore District and 3 years with New England District. She has a BA in Economics from the University of Massachusetts.
- **McCullough, David** is a Senior Archeologist, Environmental Branch, Jacksonville District US Army Corps of Engineers. He has a MA degree in Anthropology and over 30 years of experience in archeology and cultural resources management.
- **McDonald, Lisa** is a Senior Economist with the Louis and Berger Group. Dr. McDonald has over 17 years of professional experience conducting economic analysis studies for government and private sector clients. She has conducted numerous studies using economic impact analysis, benefit-cost analysis, financial modeling, and market and non-market valuation studies. The work highlights her expertise in using regional input/output model to evaluate changes in employment, earnings and taxes. She has Ph.D. degree from the Colorado School of Mines.

- **McGill, Margie** is a lead Project Manager/Planner for the Walla Walla District of the U.S. Army Corps of Engineers. At NWW, she performs plan formulation and project management on multiple projects including general investigation studies, continuing authority studies, and major rehabilitation/major maintenance studies. Paradise Creek is one of the two projects within the last three years that have moved from authorization into construction. Prior to joining the Corps of Engineers in 2002, Margie worked as a consultant for a global consulting company. She received a bachelor degree in chemical engineering from the University of Washington in 1999.
- **Meffert, Ken** is a Regional Economist for the Louisville District of the U.S. Army Corps of Engineers, where he performs economic analyses of Civil Works projects in Kentucky, Indiana, Ohio, and Illinois. He has 7 years of technical experience in economic analysis and plan formulation, primarily involving flood risk management and water supply studies. He also serves as the Louisville District Water Supply Business Line Lead. He received a BA degree in economics from the University of Bellarmine in 1999.
- **Metzger, Susan** serves as the manager for the Watershed Coordination Unit of the Kansas Water Office. Mrs. Metzger has been employed by KWO since August 2003. Her primary areas of expertise include wetland/riparian sciences and planning. Her responsibilities with KWO include managing technical assessments of watershed conditions, implementing sediment management projects, and facilitating interagency coordination to address reservoir sustainability. Mrs. Metzger has a B.S. in Biological Sciences from the University of Mary Washington in Fredericksburg, VA and a M.S. in Wetland Sciences from Old Dominion University in Norfolk, VA.
- **Mickal, Sean** is a water resources planner and biologist in the New Orleans District Army Corps of Engineers. He has 15 years of experience in environmental planning and project management with the Corps. Sean holds a BS in Biology from the University of New Orleans.
- **Miller, Sarah** is a Research Ecologist with the Environmental Laboratory, Ecological Resources Branch, responsible for research and development projects, technical support and technology transfer in support of ecosystem assessment, management and restoration. She received a BA in Environmental Science and Engineering from Bucknell University, PA, and an MS in Watershed Management and Fluvial Geomorphology from Humboldt State University, CA. Following completion of her initial graduate coursework in 1996, she returned to her native New York State to live and work in the Catskill Mountain reservoir system for the City of New York, Department of Environmental Protection, Bureau of Water Supply. Sarah worked as lead Research Scientist and Stream Restoration Design Reviewer for the NYC DEP Stream Management Program until she came to work for ERDC in Vicksburg, MS, in 2008. In her personal time, Sarah enjoys trout fishing, karaoke, mountain biking and Stephen King novels.
- **Morales, Lisa** has over 19 years of experience in ecosystem restoration and the water resources arena. She serves as a Senior Advisor for Strategic Partnerships at the Headquarters, U.S. Army Corps of Engineers. She is responsible for developing and managing strategic relationships with national conservation organizations such as The Conservation Fund, The Nature Conservancy, and

Ducks Unlimited. She started her career in the Los Angeles District gaining extensive field experience and in 1998, joined Environmental Protection Agency's National Wetlands Program working on national wetlands policy. She is the Headquarters liaison for the national Sustainable Rivers Partnership with The Nature Conservancy.

- **Morris, Jeff** is a team member of the Plan Formulation and Economist Branch at the Savannah District. He has worked for the US Army Corps of Engineers for over 17 years. He conducts economic analyses, prepares planning documents, and manages the Planning Assistance to States Program, Floodplain Management Program, Hurricane Evacuation Program and Silver Jackets Program. He received his master degree in environmental and natural resource economics from West Virginia University in 1992 and a BA in Economics from Westminster College in 1989.
- **Morris, Lori** is a Lead Plan Formulator in the Planning Branch, US Army Corps of Engineers, Seattle District, in Seattle, WA. She received a BS degree in Geography, with an emphasis in Natural Resource Management from Oregon State University at Corvallis. She has worked in Seattle District for over 10 years, in both Regulatory and Planning. Her work is in the areas of ecosystem restoration and endangered species recovery.
- **Moser, David** is the Chief Economist of the US Army Corps of Engineers and Senior Team Leader—Economics at the Corps Institute for Water Resources (IWR). He has been Chief Economist since September, 2004. As Chief Economist for the Corps of Engineers he serves as chief policy and technical advisor and consultant for economic analysis of water resources projects. Additionally he leads the USACE economics community of practice. In addition to economics, Dr. Moser is one of the Corps experts in risk analysis. In his research work he has been instrumental in developing the risk analysis procedures for major rehabilitation, flood damage evaluation, and dam safety and continues to teach risk analysis methods and approaches. Prior to coming to the Corps he was Assistant Professor of Economics at Miami University in Ohio. He received his B.A. in economics from Wittenberg University, M.A. degree in economics from the University of Toledo and Ph.D. in economics from the University of Cincinnati.
- **Moses, Don** is a graduate of Iowa State University. He is a registered professional engineer in the State of Nebraska in Structural Engineering and is a registered professional engineer in the State of Iowa in Civil Engineering. He is a Senior Civil Engineer in the Omaha District. He has been working within the Geotechnical Branch of the Omaha District for the past 30 years. Mr. Moses work experience includes the design of small dams, levees, and flood control channels; engineered and phytoremediation wetlands; landfill covers and liners; and river channel restoration chutes.
- **Mulvey, Brian** is a Fishery Biologist and Senior Environmental Lead for the Sacramento River Bank Protection Project in the Planning Division of the Sacramento District, U.S. Army Corps of Engineers. Brian has over 20 years of fisheries experience, both in research and management. Brian recently started at the Sacramento District, but has 10 years of federal experience having worked previously for the National Marine Fisheries Service and U.S. Fish and Wildlife

Service. He enjoys the challenges of creatively finding solutions that meet both project objectives and benefit natural resources.

- **Needham, Jason** is the senior consequence specialist for the USACE Risk Management Center (RMC). He holds a B.S. degree from New Mexico State University, an M.S. degree from the University of California at Davis, and is a registered Professional Engineer in the state of California. He has been practicing Hydraulic Engineering for twelve years, of which the last six have been at the Hydrologic Engineering Center (HEC) in Davis, CA. He specializes in flood damage analysis, risk analysis, system optimization, GIS, and water resources planning.
- **Nelson, Mark** is a Civil Engineer and PM in the Planning Branch of the Omaha District and has 31 total years of experience. He is a project manager for flood risk management and ecosystem restoration projects. He received a BS degree in Civil Engineering and a MS degree in Agricultural Engineering from the University of Nebraska. Mark is a registered Professional Engineer and Certified Project Manager. Mark also served as a hydrologist in the Hydrologic Engineering Branch. He served as District expert on flood warning and earned a U. S Patent for a flood warning system developed for project use.
- **Netherland, Michael** is a Research Biologist with the US Army Engineer Research and Development Center in Gainesville, Florida. He received an MS degree in Botany from Purdue University in West Lafayette, IN and a Ph.D in Agronomy from the University of Florida. He is the Editor of the Journal of Aquatic Plant Management and Past-President of the Florida Aquatic Plant Management Society. His research has emphasized linking the biology of invasive aquatic plants to various management techniques.
- **Newcomb, Craig** is an economist in the Walla Walla District. He has 24 years of Federal service, 12 with the Corps, and 12 with Bonneville Power Administration (BPA). While at the Corps he's worked on almost all specialties in Corps Economics. Craig is the District Economist, member of NWD Regional Technical Board, District Program Manager for Planning Assistance to States, and Dive Safety Officer. At BPA he's worked as Industry Economist, Utility Specialist, Conservation Economist, and Account Executive. Craig has a BS in Economics from Washington State University, and he's has achieved Journeyman Electrician, and High Voltage Substation Operator.
- **Newell, Patricia A.** is a Biologist and Study Manager in the Environmental Analysis and Compliance Branch in the Tulsa District, USACE. She has over 30 years experience in both Federal and private industry in various aspects of air, land, water, and natural resources management. She facilitates the collaborative planning process for the Oologah watershed and the John Redmond watershed. Ms. Newell received her BS degree from the University of Maryland in Botany (Plant Taxonomy), a Graduate Certificate in Planning from George Washington University in Washington DC, and graduate studies at George Mason University, Virginia, in Environmental Biology and Public Policy.
- **Nicholas Lutz** is a regional economist with the Louisville District of the U.S. Army Corps of Engineers, in Louisville, Kentucky. He has a Bachelor of Arts from the University of Louisville and a Master's of Public Affairs from the School of Public and Environmental Affairs at Indiana University - Bloomington. Since joining the Corps of Engineers in 2009, his work has involved economic

impact analysis and dam safety economics. He is a member of the Modeling, Mapping and Consequence Production Center, focusing on dam safety consequence analysis.

- **O'Connell, Sara M.** is a Hydraulic Engineer at the U.S. Army Corps of Engineers Hydrologic Engineering Center (HEC) in Davis, California. She has seven years of water resources engineering experience, including four at HEC, where she focuses on reservoir simulation and optimization modeling. She holds a B.S. in Civil Engineering and an M.S. in Environmental Engineering with a focus on water resources and wetland ecology.
- **Ortiz, Laura**, Certified Flood Plain Manager (CFM) is currently a Project Manager/Plan Formulator in the Planning Branch, Buffalo District of the US Army Corps of Engineers. She has 23 years of experience and is currently the District's Flood Risk Program Manager and Flood Plain Management Services Program Manager. Ms. Ortiz has a BS from Buffalo State College.
- **Ostrander, Christina** is a planner/project manager for the Kansas City District of the US Army Corps of engineers. Ms. Ostrander serves as the planning lead, working projects ranging across a variety of Civil Works programs, including GI and CAP. She has a B.S. in Agronomy from Oklahoma State University.
- **Oswald, Tom** is the State Lead Public Assistance Coordinator for Iowa Homeland Security and Emergency Management Division in the Department of Public Defense. He is the deputy Public Assistance Officer for the 2 most recent disaster declarations in Iowa. He assists in the management of Public Assistance program that help state, county, city and other government entities recover from federally and state declared disasters. He represents HSEMD on the Iowa Silver Jackets as well as the Regional Flood Risk Management Team. He also represents the division on other efforts to reduce future flooding impacts in Iowa along with the federal, county, agricultural, university and private partnership. Oswald began his career with HSEMD in 2008 after 36 years with the USDA Natural Resources Conservation Service in Iowa. He helps manage the Emergency Watershed Program in Iowa. He is a graduate of Iowa State University with a BS in Agronomy.
- **Owens, Chetta** works as a plant ecologist under the Aquatic Plant Control Research Program and conducts research at the USACE Environmental Research and Development Center-Lewisville Aquatic Ecosystem Research Facility, Lewisville, TX. For the past 15 years, Ms. Owens research has focused on phenology, ecology and dispersal of invasive aquatic plants in the United States, especially giant salvinia and hydrilla. Ms. Owens has a BS and MS in biology from Texas Woman's University.
- **Pace, Michael E.** is a civil engineer with the U.S. Army Corps of Engineers, Engineer Research and Development Center, Information Technology Laboratory in Vicksburg, MS. He has 29 years of experience in the development of computer-aided analysis/design programs related to structural and geotechnical engineering that are used throughout the Corps of Engineers. He received his BS and MS degrees in civil engineering from Mississippi State University.
- **Payne, Rhiannon** is a Community Planner in the Plan Formulation Section of the USACE Rock Island District where she serves as a planner and study manager for civil works projects and assists the Ecosystem Restoration PCX. She is a 2009 graduate of the D.A. Intern program and has a B.S. degree from Marshall

University in Integrated Science and Technology, Environmental Assessment and Policy. Her technical areas of focus are ecosystem restoration, mitigation and regulatory issues, GIS, policy and planning issues and IEPR/project review.

- **Peake, Elizabeth (Betty)** is a Community Planner in the Economics, Cultural Resources, and District Quality Control Section in Planning Branch, Omaha District, U.S. Army Corps of Engineers. Her degrees include a BA in Social Sciences, MA in Geography (Northwestern U.), and BS and MS in Biology (U. Nebraska-Omaha). Betty has worked in Planning Branch in Omaha since 1985. She has prepared reservoir Master Plans and Environmental Assessments and conducted Flood Risk Management and recreation (Contingent Value and Unit Day Value) economic analyses. She is the NEPA Coordinator, biologist, and recreation economist for the Chatfield Lake, Colorado, Storage Reallocation Feasibility Report/EIS.
- **Peukert, John** is currently the Chief, General Plan Formulation Section, St. Louis District Army Corps of Engineers, overseeing the District's planning efforts. Prior to this position he served as a project manager and planner in the St. Louis District and as an archeologist and tribal liaison for the Vicksburg District. He holds a BA from Southeast Missouri State University and a MA from the University of Mississippi in anthropology. He is a Registered Professional Archeologist. John is also a graduate of the Planning Associates program Class of 2008.
- **Piatkowski, Doug.** Wilmington District, Planning and Environmental Division. Biologist in the Wilmington District's Environmental Resources Section. He has a BS and MS degree in Marine Biology from the University of North Carolina at Wilmington. His research background is on the impacts of beach nourishment to nesting sea turtles. Doug provides technical expertise to the Wilmington District and South Atlantic Division on hopper dredge and beach nourishment impacts to sea turtles and other impacted species. His professional interests are on regional environmental issues and Section 7 consultation requirements associated with beach nourishment and dredging related actions.
- **Plumley, Marshall** has been with Rock Island District as a Study Manager in the Planning Branch for 9 years. Planning, policy and project management experience includes work in all stages of Civil Works projects from reconnaissance through construction. As the Environmental Plan Formulation RTS for MVD he provides direct support to MVD Districts in review of decision documents as well as provides ATR team lead services to other Divisions. Finally, he serves the District as the Illinois River Basin Integrator responsible for coordinating the various Corps missions throughout the Basin with our stakeholders and three sister Districts.
- **Price, Julie** is the Cultural Resource Program Manager in the Economics, Cultural Resources, and District Quality Control in Planning Branch, Omaha District, U.S. Army Corps of Engineers. She has a BS in Business Administration from the Black Hills State University in Spearfish, South Dakota. Julie has fourteen years in Operations Division as a Park Ranger/Manager and has been the Cultural Resource Program Manager since 2008.
- **Pullman, Chloé Eloïse** is Assistant District Counsel for the Walla Walla District office, where she works primarily on real estate and cultural resources legal issues. She earned her B.A. in anthropology from Hunter College (in her beloved

home state of New York). Prior to earning her J.D. from Indiana University School of Law, she worked as an advocate for community-service organizations.

- **Rabbon, Peter D.** is currently the Director, National Flood Risk Management Program, Institute for Water Resources. He is responsible for overseeing the establishment of the Flood Risk Management Program within USACE. His additional responsibilities include the Business Line Manager for the Corps Flood Risk Management Business Line. Mr. Rabbon has over 30 years of professional engineering experience, with the last 20 years in the area of flood management. Mr. Rabbon is a practicing civil engineer registered in California, Nevada, and Oregon. He received his Bachelor of Science and Master of Science degrees from the University of California at Davis. He also is a licensed engineering and building contractor.
- **Rea, Matthew** is currently the Program Manager for the Columbia River Treaty 2014/2024 review. Stationed at Portland District, he coordinates the regional efforts being conducted by a team representing Northwestern Division and Portland, Seattle and Walla Walla Districts. He has 32 years of experience in water resource planning with a focus on recreation planning, master planning, ecosystem restoration and ESA consultation. Mr. Rea has a BS degree in Forest Management and Resource Recreation Management from Oregon State University and is a 2004 graduate of Planning Associates.
- **Reichold, Laurel** is a Planning Study Leader in the Coastal-Navigation Section, Planning, Jacksonville District, US Army Corps of Engineers. She has a MS Civil and Environmental Engineering, E.I.T, and six years experience with environmental sciences and engineering. Areas of interest include environmental and water resources engineering, simulation and optimization for civil and environmental engineering infrastructures, watershed management, hydrodynamic modeling, coastal engineering, and navigation socioeconomic analyses.
- **Reif, Molly** is a Geographer in the Environmental Laboratory (EL), US Army Engineer Research and Development Center (ERDC) located at the Joint Airborne Lidar Bathymetry Technical Center of Expertise (JALBTCX) in Kiln, MS. She is assisting with the development of environmental products and applications using coastal lidar and hyperspectral data collected at the JALBTCX, working closely with subject matter experts in the EL. Molly obtained a B.A. and M.A. in Geography/GIS from the University of Arkansas, Fayetteville and has worked in the field of environmental geography for 8 years, including the USGS, USEPA, FEMA, and MVN-USACE.
- **Richman, Jennifer** is Assistant Division Counsel in the Northwestern Division where she provides a myriad of legal advice on issues ranging from fiscal law and authorities to labor relations to procurement law to environmental law. Her real passion, though, is cultural resources law and she worked as an archaeologist for ten years prior to law school. She received her BA in Anthropology from U.C. Davis, an M.A. in Archaeology from La Trobe University (Australia), and a J.D. from George Washington University School of Law. She started with the Corps in October 2002.
- **Rinck, Jane** is a Senior Biological Environmental Manager in the Sacramento District. Ms. Rinck has over 23 years of technical and planning experience in impact assessment, and NEPA/CEQA compliance with ecosystem restoration and

flood risk management studies. Ms. Rinck currently is working on various complex water resource studies and is leading the study effort for Folsom Dam Permanent Operations.

- **Ringold, Valerie** is a Planner for Northwestern Division where she provides district support and coordination with the RIT. Prior to joining NWD Valerie worked 20 years in Environmental Resources and Plan Formulation in Alaska, Kansas City and Rock Island Districts. She is also currently an account manager for the ECO-PCX and is the Technical Coordinator for the ER Gateway initiative. She has a bachelor's degree in Fisheries & Wildlife Biology from Iowa State University. She holds a Master's degree in Management from Baker University and is working on a Professional Certification in Watershed Management from Portland State University.
- **Riordan, Jennifer** is the NAGPRA Project Lead at the Mandatory Center of Expertise for the Curation and Management of Archaeological Collections at the Corps of Engineers' St. Louis District Office. She received her Bachelors' degree in Anthropology in 1992 from the State University of New York, Stony Brook, and her Master's degree in Physical Anthropology from Washington University, St. Louis, in 1994. In 1995, Jennifer began working as physical anthropologist with the Corps of Engineers in 1995, and since that time, she has worked within the cultural resources program at the MCX. Her primary focus over the last ten years has been assisting Corps districts across the United States with NAGPRA compliance.
- **Roach, Andrew** is a biologist and study manager in the Planning Division, US Army Corps of Engineers, Baltimore District. He has a BS degree in Wildlife and Fisheries Science from Penn State University and a MS degree in Applied Ecology and Conservation Biology from Frostburg State University, Maryland. Before joining the Corps of Engineers in 2007 he worked as a cartographer for the National Park Service at Assateague Island National Seashore.
- **Rogers, Cory** is a computer scientist currently serving as the National Applications Practice Leader at Camp Dresser & McKee, Inc. He has over 15 years of experience in the design and development of software applications to solve complex decision making problems. Prior to joining Camp Dresser McKee, Inc, he served as the Director for Software Engineering for a small consulting firm and was a founding member of the Curriculum Advisory Board for the Information Systems Technology program at Southern Illinois University.
- **Ross, Jim** is an archeologist in the Economic and Environmental Analysis Branch, Rock Island District, U.S. Army Corps of Engineers, and serves as the regional technical specialist for the Mississippi Valley Division and team leader for the cultural stewardship component of the Navigation and Ecosystem Sustainability Program. He has 20 years of experience in cultural resources planning, impact assessment, and GIS implementation in the Rock Island District. Mr. Ross holds a Bachelor of Arts degree from North Texas State University and a Master of Arts degree from Southern Illinois University-Carbondale.
- **Rossman, Edwin J., Ph.D.** is Chief, Planning Branch, Tulsa District. He has held that post since 2002. Prior to that position, he served as a sociologist for the District beginning his Corps career in 1980. He earned his Ph. D. in sociology in 1990 from the University of North Texas and his Masters and Bachelors in sociology from Texas Tech University in 1977 and 1974 respectfully. His areas

of expertise include social impact assessment, public involvement, demographics and plan formulation. He also served on the Interagency Performance Evaluation Team (IPET) as well as being on numerous agency technical review teams.

- **Runyon, Kip** is currently a fishery biologist in the Ecosystem Restoration Planning Section, St. Louis District Army Corps of Engineers. He has 5 years of experience in planning aquatic ecosystem restoration projects in the Upper and Middle Mississippi and Illinois Rivers. Kip holds a BS and MS in Zoology from Southern Illinois University, Carbondale.
- **Rupp, Byron** currently serves as a Physical Scientist in the Planning Services Team, U.S. Army Corps of Engineers, Buffalo District. He has 6 years experience as a lead planner and project manager for a wide variety of GI, CAP, and support for other agencies planning studies. He is currently serving as the lead planner for a 2010-2011 \$7 million dredging project of the Buffalo River funded through the Great Lakes Restoration Initiative (GLRI). He received BS and MS degrees in Geology from the State University of New York at Buffalo.
- **Ryan, Alex** has worked as a regional economist with the Louisville District for two years. He has a bachelor's degree in Economics, as well as a Masters in Business Administration from Bellarmine University. His experience has been focused primarily on Flood Risk Management with and without-project condition economic analysis, as well as consequence analysis on Dam Safety Modification Reports and Issue Evaluation Studies. He is a member of the Modeling, Mapping and Consequence Production Center, focusing on dam safety consequence analysis.
- **Salins, Monica** is currently the executive director of the Pontchartrain Levee District. As such she oversees the daily operations of the District and work closely with the Corps on a number of projects. She is responsible for 115 miles of Mississippi River levees as well as the St. Charles portion of the Lake Pontchartrain and Vicinity Hurricane Protection Project which has been undergoing extensive upgrades since Hurricane Katrina in 2005
- **Schneidmiller, Kevan** is a Hydraulic Engineer in the Hydrology Section of the Walla Walla District. Kevan has completed studies requiring statistical analyses on raw hydraulic, hydrologic, and climate data to determine frequencies or probabilities of specific events including; real-time hydrograph peaks, flow splits, frequency curves, standard project and probable maximum flood hydrographs.
- **Schultz, Martin** is an environmental engineer with the Engineer Research and Development Center, Environmental Laboratory. He joined the Engineer Research and Development Center in 2007, where he is a member of the Risk Integration Team and works on risk and decision analysis methods. He holds a Ph.D. in Engineering and Public Policy from Carnegie Mellon University, Pittsburgh, PA, and is a member of the Society for Risk Analysis, the Institute for Operations Research and Management Science, and the Decision Analysis Society.
- **Setters, Roger** is currently the Chief of the regional Flood Risk Management Planning Tech Center for the Great Lakes and Ohio River Division, Army Corps of Engineers. While his office is located in Louisville District, he serves as a technical expert in flooding issues in support of the seven districts in the division. A registered Civil Engineer since 1977, he has 37 years of total professional experience and has been with the Corps since 1983. He is also a PROSPECT

instructor for multiple courses and provides annual support to the Planning Associates program.

- **Sexauer, Bruce** is a Senior Plan Formulator with the Alaska District. He has a Bachelor of Science in Civil Engineering from the University of Washington. Bruce has been with the Corps since 1993, first in Seattle District and then with Alaska District since 2003. Bruce is a graduate of the 2003 Planning Associates program and is an instructor for the Civil Works Orientation PROSPECT course.
- **Shafer, Mark** is Water Quality Technical Lead in the Planning Division of the Jacksonville District, US Army Corps of Engineers. He is a Florida Licensed Professional Engineer and has been employed at the Corps for over 15 Years. He holds a bachelor's degree in Environmental Engineering and a Masters in Water Resource Engineering.
- **Skaggs, Lawrence (Leigh)** is a community Planner who has worked at the Office of Water Project Review at Headquarters, USACE. Leigh currently reviews a wide range of feasibility reports and other decision documents. He was involved in plan formulation and evaluation for CERP projects as the Indian Lagoon--South, the Everglades Agricultural Area, and the C-43 Basin Storage Reservoir. Mr. Skaggs graduated from the University of Georgia, where he attended both undergrad and grad school in Geography.
- **Skalak, Jerry** has 20+ years of technical and management experience with the Rock Island District. He currently serves as the Corps lead to the Iowa Silver Jackets Flood Risk Management Team and District Flood Risk Management Program PM. In addition he manages the District's Floodplain Management Services and Planning Assistance to States & Tribes programs; Dredged Material Management Program; FEMA support projects; National Levee Database project; and Sec 107 and miscellaneous GI accounts. He is a certified floodplain manager (CFM) and is a graduate of the University of Wisconsin's Water Resources Management M.S. degree program.
- **Small, Daniel** is a senior Water Resources Planner/Biologist, USACE, South Atlantic Division with over 25 years in civil works water resources planning and implementation. He has been an O&M Navigation Project Manager in Construction-Operations, Water Resources Planner in Plan Formulation, Regulatory Program Manager, and Policy Review Manager, HQUSACE. He holds a Bachelor of Science Degree in Geography and Planning, Southern Illinois University, a Master of Science in Earth Science, University of Notre Dame. He has completed post-master's work towards a Doctorate in Adult and Continuing Education, North Carolina State University and is a graduate of the US Army Management Staff College.
- **Smith, Jason** has 10+ years of technical engineering and planning experience. He served as the lead engineer for post Wildfire Slope Stabilization and Restoration efforts in San Diego, CA in 2003 and 2007 while working for NRCS and the County of San Diego, Respectively. He currently serves as the Study Manager for the Iowa-Cedar Rivers Comprehensive Planning effort as well as numerous other projects. He is a licensed Professional Engineer, Certified Professional in Erosion and Sediment Control and is a graduate of Colorado State University's Environmental Engineering program.
- **Solis, Debbie** is a Project Manager in Honolulu District Civil and Public Works Branch, Programs and Project Management Division overseeing several of the

District's flood risk management, watershed projects and planning assistance to states projects. Ms. Solis has been with the Corps for 19 years working on both civil works and military projects. She worked at both the Jacksonville District and Seattle District before settling in Honolulu District. Ms Solis has a B.C.E. in Civil Engineering from Georgia Institute of Technology.

- **Stevenson, Tony L. PE**, is an Agricultural Engineer (Water Management) with the Natural Resources Conservation Service (NRCS) at the National Water Management Center in Little Rock, Arkansas. Tony is the NRCS liaison to USACE for the NRCS/USACE Partnership Agreement. He has a BS Civil Engineering from the University of Arkansas. During his career with NRCS, Tony has worked as a Civil Engineer, Agricultural Engineer, Area Engineer, Planning Engineer, Water Management Engineer, State Conservation Engineer and Environmental Engineer.
- **Stodola, Paul** is currently an environmental technical leader in the Environmental Branch, Jacksonville District. He has a combined 20 years + working as an environmental consultant, state biologist, and 11 of these years has been with the Jacksonville District. Mr. Stodola has a B.S. degree in Natural Resources and Environmental Science from Purdue University and a M.S. degree in Fisheries Biology from the University of Tennessee.
- **Svendsen, Chris** has been a hydraulic engineer in the Omaha District's Sedimentation and Channel Stabilization Section for seven years. In 2005, he received a B.S. in Civil Engineering from the University of Nebraska Omaha. He is extensively involved in the Missouri River Recovery Mission.
- **Suedel, Burton** is a Research Biologist at the US Army Corps of Engineers, Engineer Research and Development Center, Vicksburg, MS. He has BS and MS degrees in Biology from the University of North Texas and a Ph.D. Degree in Biological Sciences from the University of Mississippi. He has published in the fields of environmental toxicology and ecological risk assessment and more recently in decision analysis.
- **Switzer, Jennifer** is currently the Project Manager and Environmental Resource Specialist of the Missouri River Ecosystem Restoration Plan, Kansas City District, Army Corps of Engineers. She has earned a MPH in Environmental Health, MS in Environmental Engineering, MUP in Regional Planning, and a BA in Environmental Policy. Her expertise includes environmental planning and NEPA.
- **Theiling, Chuck** is a Biologist at the Rock Island District Environmental Branch for 10 years and also a Mississippi Valley Division Regional Technical Specialist in Ecological Modeling. He has been working on Upper Mississippi River restoration for 20 years among several research, monitoring, and planning agencies.
- **Thompson, Brad** is the Chief, Environmental Resources and Missouri River Recovery Program Plan Formulation Section, USACE, Omaha District. Prior to coming to the Omaha District, Brad served as a Supervisor in the Plan Formulation Branch at the Rock Island District. Over his 15 year career, he has provided plan formulation, environmental compliance, and project management expertise and oversight for ecosystem restoration and multi-purpose watershed studies. His education includes a BA from Wartburg College, Waverly, Iowa, 1991, and MA in Urban and Regional Planning from the University of Iowa,

Iowa City, Iowa, 1994. He has professional registration with the American Institute of Certified Planners and completed the Corps Planning Associates Program in 2003.

- **Topi, Thomas** holds a B.S. degree in economics and has been an economist with Kansas City District for 3 years since graduating, specializing in flood risk management and ecosystem restoration studies. He is the lead economist for the Missouri River Ecosystem Restoration Plan
- **Tripe, Jeffrey A.** came to work for the U.S. Army Corps of Engineers Fort Worth District in May 2000 as a Park Ranger at Waco Lake, Texas. Mr. Tripe currently works in the Environmental Branch at the District office as a Project Manager, Environmental Planner, NEPA Specialist, and Regional Technical Specialist. Mr. Tripe is a graduate of the 2007 Planning Associates class and also serves as the NEPA Manger for the District's Debris PRT. Mr. Tripe has an undergraduate degree in Fisheries Biology and Environmental Science, and also holds a Masters degree in Fisheries Biology from Kansas State University.
- **Trulick, Jeff.** began his USACE career as a biologist in Baltimore District's Regulatory Branch in 1992. Jeff later became a Planning study lead and project manager for Baltimore. In 2006, Jeff earned the opportunity to work with Jacksonville District and provide senior planning support to the South Florida restoration projects. Upon returning to Baltimore's Planning Division, Jeff became the Economics and Environmental Team Leader for the Civil Works Branch. In September 2008, he was promoted to his current position as a policy reviewer on the environmental team in the Office of Water Project Review. Jeff holds a B.S. in Biology from Penn State University.
- **Upah, Cynthia** is an Environmental Resource Specialist in the Planning Branch of the U.S. Army Corps of Engineers Omaha District. She is the planning lead for the Programmatic Environmental Impact Statement (PEIS) for the Mechanical Creation and Maintenance of Emergent Sandbar Habitat (ESH) on the Upper Missouri River and is the lead biologist/NEPA specialist for the ESH program in Nebraska and South Dakota as well as several stream restoration and flood control projects. She has a BS degree in Business Administration/Marketing from the University of Northern Colorado and a MS degree in Biology from the University of Nebraska at Omaha.
- **Vanosdall, Tiffany** is a civil works project manager in the Plan Formulation Section of Planning Branch of the Omaha District. Tiffany's career with the Corps of Engineers began as an Environmental Resource Specialist in the Nebraska Regulatory Field Office from 2000-2002. She then spent over 6 years with the Forest Service in Denver, Colorado as a Biologist working on NEPA projects nationwide. She received a B.S in Biology and Chemistry from Wayne State College in 1996 and an M.S. in Aquatic Ecology from the University of Nebraska Omaha in 1998.
- **Vermeeren, Rene** has over 31 years of work experience in water resources engineering, including 25 years with the Los Angeles District Corps of Engineers. He is currently the Chief of the Hydrology and Hydraulics Branch. He also has responsibility for water control management functions, which include directing the operation of reservoir projects during storm and flood periods, performance of water control studies, and preparation of water control manuals. He has been on the Bill Williams River Corridor Steering Committee since 2008.

- **Waguespack, Les** is currently a Project Manager for the Shaw Environmental and Infrastructure and retired from the USACE with over 40 years of Federal service, mostly in the planning and project management arena. Les served as the project manager for navigation and hurricane protection projects currently under construction in the New Orleans District and served as a program manager in MVD. Les also served as the Corps' representative to ESF-14 (Recovery Planning) after Hurricane Katrina, working with the State of Louisiana and the parishes impacted by Hurricane Katrina.
- **Walker, Andrea** is currently a member of the Office of Water Project Review (Plan Formulation Team) responsible for policy review and execution of Civil Works Planning Studies and decision documents. She has 17 years of USACE experience with 12 years in Baltimore District, 2 years at Northwestern Division, and 3 years in Headquarters as the SWD-RIT Planning Program Manager before beginning her current position in June 2009. Ms. Walker was a Planning Associate in 2004. She has a BS degree in Recreation and Leisure Administration from York College of Pennsylvania and is a Certified Parks and Recreation Professional (CPRP).
- **Ware, Lee** is currently the Plan Formulation Team Leader in the Office of Water Project Review at Headquarters, responsible for policy compliance review of feasibility and post- authorization planning documents and agreements. Prior to coming to Headquarters in 2002, he worked 28 years in the Planning Division at Philadelphia District and managed planning and design studies for numerous coastal, navigation, flood risk management, environmental restoration, and water supply projects. Lee received a BS in Civil Engineering from the University of Delaware and a MS in Civil Engineering from Drexel University. He is a registered Professional Engineer in the Commonwealth of Pennsylvania.
- **Warner, Andrew** is a Senior Advisor for Water Management with The Nature Conservancy's Sustainable Waters Program. He also is the Conservancy's National Coordinator on the Sustainable Rivers Project. Andy has 20 years of experience in the environmental and conservation fields on projects and policy relating to water, water quality, and floodplain management. His original responsibilities with the Conservancy involved supporting conservation work across the US, Latin America/Caribbean, and China as part of the organization's Freshwater Initiative. In his current position, Andy works with government agencies, academic institutions, and private organizations to identify and implement innovative water management strategies.
- **Weaver, Wendy** is an archeologist with the Jacksonville District Planning Division. Prior to joining the Corps, she worked in the Southeastern United States as an archeologist for 15 years. She has experience in both terrestrial and marine archeology and has a BA in Anthropology and a MS in Geology (Geoarcheology) from the University of Georgia.
- **Weichenberg, Rena** is a Senior Botanist in the Environmental Analysis Branch, Planning Division, New York District. She received her MS degree in Horticulture-Plant Breeding from the University of California, Davis, CA. Ms. Weichenberg has worked in Ecosystem Restoration for over 20 years; 15 years with the US Army Corps of Engineers. Her experience includes the preparation of interdisciplinary policy and guidance documents, plans and specifications, design, on-site monitoring and construction oversight for ecosystem restoration projects.

- **White, Zach** is a hydraulic engineer for the Kansas City District of the US Army Corps of Engineers. Mr. White serves as the Regional Sediment Manager for the River Engineering and Restoration Section. He has a B.S. in Civil Engineering from the University of Missouri-Rolla.
- **Willis, Bob** is the Northwestern Division Environmental Team Lead, responsible for Environmental Stewardship and Environmental Restoration business line budgeting, environmental compliance, Native American consultation, and cultural resource programs. He long served as Portland District's Environmental Resources Branch Chief. His responsibilities included oversight of the District's fish and wildlife research, monitoring, and evaluations program's; mitigation planning; and insuring environmental compliance for District actions. He has a Master's degree in biology with additional graduate level courses in Public Administration.
- **Wilson, Steve** is current serving as President of the Pontchartrain Levee District, which was created by the Louisiana Legislature in 1895 and is currently charged with providing flood protection on the east bank of the Mississippi River from the New Orleans suburbs to Baton Rouge. Steve is also serving as the president of the Louisiana Levee Board Association and is one of the levee board representatives serving on the Louisiana Coastal Protection and Restoration Authority
- **Wimbrough, Ray** is a Senior Plan Formulator with the Jacksonville District, U.S. Army Corps of Engineers. He holds a Bachelor of Science in Plant Sciences from James Madison University, Harrisonburg, Virginia and a Master of Science degree in Wetland Biology from Old Dominion University, Norfolk, Virginia. He has been with the Corps for over 10 years, spending the last 7 of those years in the Plan Formulation Branch working on the Comprehensive Everglades Restoration Plan. He is also a current member of the 2010 Planning Associates Class.
- **Worley, Mike** has been with the Huntington District since 1975. He graduated from WV Institute of Technology with a BS in Civil Engineering. Most of his professional career was with Planning Division, where he prepared planning reports for Continuing Authority Projects, floodwalls in the Tug Fork Valley, and innovative nonstructural flood control projects in Tug Fork. Mike served as the Chief of Planning Branch from 2001-2008. He retired in September 2008, but returned as a Project Manager in support of the Ohio River Basin Comprehensive Project. He is a 1984 graduate of the Planning Associates Program.
- **Wright, Renee S.** is a Project Manager in the Little Rock District where she has managed water resource projects for the past twenty three years. She is also the district's Continuing Authorities Program (CAP) Manager. Currently, Ms. Wright is the Project Manager for Bull Shoals Lake, Water Supply Storage Reallocation Study, which involves completing two reallocation reports within one year, something never accomplished by the Corps. Ms. Wright received her B.S. degree in Industrial Engineering from the University of Arkansas in 1982. Prior to working for the Corps, she worked for the Pine Bluff Arsenal, Texas Instruments, and Alcoa.
- **Zettle, Brian** is a Biologist with the Planning and Environmental Division, Mobile District, Army Corps of Engineers responsible for environmental

compliance issues in the Apalachicola-Chattahoochee-Flint (ACF) River Basin. He has over 10 years of technical experience working with Endangered Species and ecosystem restoration issues. He has a BS degree from Clemson University.

EXHIBITS

PLANNING ASSOCIATES PROGRAM

Are you looking for a challenging program to make you the best planner you can be? Well then stop by the Planning Associates Program Booth! Learn more about this unique program, interact with current PA participants (Class of 2010), and find out how to apply for the program.

The Planning Associates Program is an advanced training opportunity in water resources planning offered by the U.S. Army Corps of Engineers. The goal of the Planning Associates program is to develop planning leaders who can manage complex planning studies that lead to quality decision documents. The curriculum emphasizes team building, leadership training, and experiential training in the Corps' civil works missions. Training is delivered through case studies, individual and group projects and presentations, and training in instructional methods. Participants are provided with networking opportunities with Corps of Engineers' leaders and other leaders from the public and private sectors.

The Planning Associate Program objectives are to:

- Improve leadership skills in communication, relationship building, teamwork, problem solving, critical thinking, and decision making in the Project Management Business Process (PMBP) environment.
- Achieve a broader national perspective on water resources and the role of the Corps, especially at the Washington level, in decision document development and approval.
- Develop skills necessary to be effective in the Corps as a technical expert, team leader, supervisor, program manager or an advisor on the conduct of planning in the PMBP environment.
- Build a network of contacts at all levels of the Corps in all regions of the nation.
- Attain a broad technical overview of the development and application of water resources policy, missions, and project purposes including the authorization and appropriations processes.
- Acquire skills necessary to explain the development and application of water resources policy to sponsors, planning team members, and others.

PLANNING CENTERS OF EXPERTISE

In August 2003, the Director of Civil Works designated five National Planning Centers of Expertise to enhance the Corps' planning capability for inland navigation, deep draft navigation, ecosystem restoration, hurricane and storm damage reduction, flood damage reduction, and water supply and reallocation. The Director also recognized the Northwestern Division as the acknowledged national hydropower Planning Center of Expertise, and acknowledged the excellent support of the National Nonstructural/Flood Proofing Committee across business line program areas. The Centers are part of the Corps' national initiative to improve the quality and effectiveness of water resources planning, referred to as the Planning Excellence Program. This program includes planner training and development, planner leadership development, quality assurance and quality control, the Centers of specialized planning expertise, and other national initiatives to improve planning effectiveness. The role of the Planning Centers is to focus on plan formulation and the complex technical evaluation associated with formulation. Each Planning Center is led by a team of experts specialized in plan formulation, environmental sciences, economics, and related technical disciplines.

USACE/NRCS PARTNERSHIP

The goal of the NRCS/USACE Partnership Agreement, signed July 7, 2005, is to promote a long-term working relationship to improve the management of water and related natural resources under the missions and authorities of NRCS and USACE. The agencies have pledged to work together in the following areas: 1) watershed planning; 2) wetlands creation, restoration and enhancement; 3) natural disaster recovery; and 4) activities related to Wetlands Conservation and Regulatory Compliance. However, in some cases the regulations and policies of both agencies are creating barriers to partnership and compromising the success of collaborative efforts. This paper will examine case studies from across the country which highlight these bureaucratic barriers to partnering and collaborating, and examine ways to eliminate or overcome them. For example, in one partnering effort for ecosystem restoration, roadblocks included how the timing of different agency programs affects "without project" baseline conditions, how NRCS Wetland Reserve Program easements affect using land value as a cost share, and the difficulties encountered with consideration of watershed scale benefits when assessing the benefits of the project. Flexibility and compromise in agency processes and practices are key to overcoming many of these barriers. To reap the potential benefits of interagency partnerships, the Corps needs to remake itself as a more attractive partner, a reliable partner, an agency with which it is easy to partner.

The USACE/NRCS Partnership display will contain copies of our brochure and other items discussed below. The NRCS liaison to USACE as well as an IWR rep will be available to provide information about NRCS programs and authorities. One of our actions items this year is the development of a Partnership Handbook. The handbook is supported by Steve Stockton and we need to gather input from attendees about successes and/or challenges of efforts to partner with NRCS on projects (ecosystem restoration, frm, etc) as well as get the word out about the handbook. Copies of the Partnership handbook outline and an optional one-page survey to help us gather information about previous partnership efforts will be available. Once completed, the handbook will be a tool for use by planners from both agencies to remove roadblocks to effective partnering. Also included will be a brochure describing the partnership.

RISK ANALYSIS GATEWAY

When and where will the next major flood occur? Will project bids come in under the government estimate?

Will a built structure live up to its strength? How many work-related injuries can we expect on the job?

No matter where you work or what you are working on in the Corps, you face questions like these every day for which there are no easy answers. The reality is that we do not and cannot know the answers to many of the questions we run into during the performance of our jobs. What we can do, however, is to understand and manage the risks created by these uncertainties. Risk analysis is the responsibility of every Corps employee. It is an effective way of thinking about and organizing to solve problems on the job and to address uncertainty.

The Institute for Water Resources has developed a website to address the subject of risk analysis, including an understanding of the Corps model of risk analysis and an examination of the subjects of risk assessment, risk management and risk communication.

We invite you start by taking the one-hour online training course and then to explore other parts of the website for additional information, guidance, applications and other resources.

Please contact Ms. Erin Wilson if you have any questions.

NED MANUALS (ON-LINE)

The Institute of Water Resources (IWR) is pleased to present the web-based U.S. Army Corps of Engineers National Economic Development Manuals Website!

NED Online offers:

New, Updated Manuals!

New Web-Based Format for better browsing!

References and Resources

Helpful Links: Community of Practice, Headquarters, IWR and Other Corps Links Search better!

Corps Risk Analysis Gateway and NED Manuals Website Brochures will be placed on the IWR Booth for both websites and a laptop may be set-up to demonstrate the website and also the NED Manuals website.

OTHER IWR PRODUCTS

IWR is pleased to unveil several new products which are intended to assist the field with their planning studies. These include the RED Handbook, OSE Handbook, white papers dealing with navigation challenges, among others.

SHARED VISION PLANNING

Shared Vision Planning (SVP) is a collaborative approach to formulating water management solutions that combines three disparate practices: 1) traditional water resources planning, 2) structured public participation and 3) collaborative computer modeling. Although each of these elements has been successfully applied, what makes Shared Vision Planning unique is the integration of traditional planning processes with structured public participation and collaborative computer modeling.

ECOSYSTEM ASSESSMENT AND RESTORATION TECHNOLOGIES FOR THE PLANNING COMMUNITY

The Engineer Research and Development Center (ERDC) provides subject matter expertise for a wide variety of ecosystem assessment and restoration technologies for the planning community. Technologies include a suite of tools for simple to complex applications such as habitat assessments (river, riparian, reservoir, estuarine, watershed), analysis of environmental benefits, data management and visualization of outputs from tools and models, and technology transfer methods such as workshops, webinars, collaborative field demonstrations, and social networking mechanisms such as gateways and web portals. This exhibit will highlight these many tools and facilitate interactions with ERDC researchers and field practitioners. Featured products will include the Ecosystem Restoration Gateway, Data Management and Visualization tools developed in the System-Wide Water Resources Program (SWWRP) and Ecosystem Restoration and Environmental Benefits Analysis tools developed in the Ecosystem Management and Restoration Research Program (EMRRP). Product information sheets and CDs will be available

THE CONCEPTUAL ECOLOGICAL MODEL CONSTRUCTION ASSISTANCE

TOOLBOX (CEMCAT)

Conceptual models help identify the functional relationships important to understanding an ecosystem. ERDC's Environmental Laboratory created CEMCAT to serve as a guide for planners to create good, comprehensive conceptual models early in the planning process. Additionally, CEMCAT streamlines the process of visualizing the model by providing an intuitive user interface and a database of images, saving valuable time and resources.

CEMCAT gives users three choices of expertise; the "Novice" option will walk the user through the planning process step by step. "Intermediate" users can choose to get limited help through checklists, and "Experts" are given the option of turning help off completely. When the user is ready to visualize the model, CEMCAT provides two built-in formats: a picture model and a box-and-arrow diagram. In either case, a background image for the model can either be uploaded from the user's machine or selected from CEMCAT's database of images. CEMCAT provides a simplified, highly visual platform to construct conceptual models, and can thus be used at workshops where a variety of people can contribute to the model building process. This helps build consensus and ownership among the stakeholders of a project.

Developing a conceptual model should be one of the first steps taken in planning any ecosystem restoration project. ERDC's Environmental Laboratory developed CEMCAT to make the process easier by providing both guidance and an intuitive platform to facilitate model construction. You can download CEMCAT at:

<http://cw-environment.usace.army.mil/eba/cemcat.cfm>

HYDROMUSSEL: AQUATIC HABITAT MODELING AND ASSESSMENT SOFTWARE

Abstract: HydroMussel is a software application that facilitates the use of hydraulic model output to drive an ecological habitat suitability model. A niche-based ecological modeling approach, such as habitat suitability analysis (HSI), is used to evaluate potential impacts of project alternatives or to explain post-project changes in habitat. The potential presence of threatened and endangered freshwater mussels is often a concern when evaluating the feasibility of many Corps projects. These organisms are sessile by nature and require stable benthic habitat to survive. We will demonstrate how HydroMussel can be used to estimate change in habitat quality associated with variability in discharge. Results from a longterm mussel monitoring program will demonstrate the application of HydroMussel to explain distribution of freshwater mussels downriver of the Olmsted Lock and Dam 53.

CURRENT TECHNOLOGIES FOR THE TRANSFER OF INFORMATION ON INVASIVE PLANT SPECIES. Whitaker, S.G.¹, M.J. Grodowitz¹, J.A. Stokes² and L. Jeffers²; ¹U.S. Army Engineer R&D Center, 3909 Halls Ferry Road, Vicksburg, MS 39180-6199, ²Bowhead Information Technology Services, U.S. Army Engineer R&D Center, 3909 Halls Ferry Road, Vicksburg, MS 39180-6199

A large number of introduced and naturalized terrestrial and aquatic plant species cause serious problems in many areas of the United States. The development of effective management strategies is directly dependent on access to pertinent and up-to-date information on plant identification, biology, ecology, and applicable management technologies. Unfortunately, because of the tremendous number of species, the collection and summarization of such information can quickly become overwhelming. While traditional methods of technology transfer (including technical reports, scientific papers, oral presentations, posters, etc.) are adequate more efficient access is needed. Toward this goal, two computer-based information/expert systems, the Noxious and Nuisance Plant Management Information System (PMIS) and the Aquatic Plant Information System (APIS), have been developed that provide rapid and easy access to up-to-date information on various management and control methods available for particular plant species. Until now, only certain portions of the information contained within these systems were made available on the internet. These programs have since been reprogrammed which now allows for not only the information to be obtain more easily, but also the identification portions are available at <http://el.erdc.usace.army.mil/aqua/apis/intro.aspx>. Other systems that are available for reference or information on other invasive species are the Aquatic Nuisance Species Information System (ANSIS) and the Plant Dispersal Information System (PDIS). One additional reference tool, the Ecosystem Management and Restoration Information System (EMRIS) is available by the ERDC.

HEAT: HABITAT EVALUATION AND ASSESSMENT TOOLS

Kelly .A. Burks-Copes¹ and Antisa C. Webb¹

¹U.S. Army Corps of Engineers Research and Development Center (ERDC), Vicksburg, MS, USA

Ecosystem-based project design is strengthened and enhanced by techniques that rapidly assess changing habitat conditions at a species or community level. **Habitat Evaluation and Assessment Tool (HEAT)** was developed using a customized Microsoft Access module to solve complex mathematical calculations and reports the results from a graphical user interface. HEAT currently includes two packages: **Expert Habitat Evaluation Procedures (EXHEP)** and **Expert Hydrogeomorphic Approach to Wetlands (EXHGM)** with the flexibility to add other methods in the future. EXHEP describes the quality and quantity of habitats associated with multiple species and/or communities, while EXHGM determines the quality and quantity of a wetland's capacity to perform the necessary functions.

HEAT allows for both baseline assessments and with-project vs. without-project comparisons. The software modules accommodate all current HEP and HGM model calculations, and provides several interfaces to encourage adaptations to these as regional conditions present themselves. The system can handle large amounts of data quickly and efficiently, dramatically reducing computation time. It accommodates a variety of data input and output file formats. Technical support promotes easy access and effective application of this tool in the user's day-to-day assessment activities. A demonstration of the software will be presented at the poster session of the conference.

Contact Information: Kelly A. Burks-Copes, USAE Engineer Research and Development Center, Environmental Laboratory, 3909 Halls Ferry Road, Vicksburg, MS 39180, Phone: 601-634-2290, Fax: 601-634-3725, Email: Kelly.A.Burks-Copes@usace.army.mil

TROPIC ASSESSMENT SCREENING TOOL FOR RESERVOIRS (TASTR) David M. Soballe, Ph.D., Environmental Laboratory, U.S. Army Engineer Research and Development Center, (601) 634-4631, David.M.Soballe@usace.army.mil.

TASTR gives resource managers and decision makers a rapid "first cut" estimate of water quality conditions that can be expected in existing or planned reservoir projects in response to continuing or changed land use or climate in the surrounding watershed and changes in reservoir operations (e.g., water levels). TASTR has a "user friendly" interface that includes simple GIS capability for the display, selection, and modification of project and watershed information. TASTR uses the existing USACE model, "Bathtub" and simple watershed export models, as the basis for its predictions about specific reservoirs. This is done with a metamodel approach in which hundreds of model runs on the individual reservoir have been summarized to create statistical models (regression equations) of its behavior. The output shows confidence limits around all predictions, and the tool provides on-line guidance (e.g., references to ERDC expertise) if the results lack the necessary detail or level of confidence. TASTR is designed to have a small "footprint" on the user's computer. It runs under Microsoft Windows operating systems and places minimal demands on system resources (memory, CPU power, or disk storage). It requires minimal third party software and takes advantage of the Web to obtain updates from ERDC. TASTR can also operate without a Web connection. The package has currently been implemented for a number of reservoir projects (e.g., Beaver Lake, AK; Piney Run, MD; Allatoona, West Point, Sidney Lanier, GA; Walter F. George, AL-GA; Cullman, AL; Eau Galle, WI; and Smithville, MO).

***nServo* WEB BASED FLOODPROOFING COST MODEL**

nServo is a website application currently under development to model construction costs for the scenarios of raising a structure in place versus demolition. The application and its output will serve as an essential tool for considering non-structural alternatives during plan formulation. Section 73 of WRDA 74 requires consideration of non-structural measures in flood reduction studies. However, because non-structural measures present unconventional implementation requirements they are often quickly dismissed, overlooked, or ignored during the USACE plan formulation process. While non-structural floodproofing has widespread application throughout the nation, few Districts have successfully implemented such programs. The availability of reliable standardized cost models to the project delivery teams is an essential planning and budgeting tool for these programs. This web-based cost application answers the need for tools supporting serious and efficient consideration of non-structural measures for risk reduction. Furthermore, the scope of the *nServo* tool is not limited to the internal efforts of the USACE. Other agencies could find the *nServo* website application useful, such as FEMA and local governments interested in implementing non-structural risk reducing measures.

Planning Community of Practice Conference 2010
“Planning Smart Building Strong”
June 7-10

This conference was made possible through the dedication and collaborative efforts of:

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