



PIANC Bulletin

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Chairman's Message by Honorable John Paul Woodley, Jr., Assistant Secretary of the Army (Civil Works)

Dear Members,

The President's Budget for FY 09 for the Civil Works program of the U.S. Army Corps of Engineers addresses the continued development and restoration of the Nation's water and related resources, operation and maintenance of existing Corps' water resources projects, protection of the Nation's waters and wetlands, and restoration of sites contaminated as a result of the Nation's early atomic weapons development program. The Budget continues to focus on the three main water resources mission areas of the Civil Works program, namely commercial navigation, flood and coastal storm damage reduction, and aquatic ecosystem restoration.



Honorable John Paul Woodley, Jr.

The Budget provides \$4.741 billion in discretionary funding for the annual Civil Works program. Additional sources of funding for the annual program are estimated at \$501 million, including \$400 million contributed in cash provided by non-Federal interests.

The Budget also provides \$5.761 billion in an FY 09 emergency request for the additional Federal funds needed to reduce the risk to the greater New Orleans, Louisiana, area from storm surges that have a 1 percent annual chance of occurring, and to

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improve internal drainage; to restore and complete construction of hurricane and storm damage reduction features in surrounding areas to previously authorized levels of protection; and to incorporate certain non-Federal levees into the Federal system. The Budget proposes to authorize the works in greater New Orleans (including certain internal drainage) as a single project, to be constructed with the State as cost-sharing partner, and subsequently maintained and operated by the State. Pre-Katrina storm damage reduction was provided through separately authorized projects that were designed to different standards, subject to different requirements for non-Federal cost sharing, and managed by different local entities.

Construction

The Budget provides \$1.478 billion for construction (including \$76 million in the Mississippi River and Tributaries (MR&T) account), and again proposes objective performance criteria to guide the allocation of funds among projects. The guidelines give priority to projects with the greatest net economic and environmental returns per dollar invested; those that address a significant risk to human safety; dam safety assurance, seepage control, and static instability correction projects; and projects that can be completed in FY 09. Those funded include 11 dam safety assurance, seepage control, and static instability correction projects; 16 projects that address a significant risk to human safety, including the St. Louis Flood Protection, Missouri, and Wood River Levee, Illinois, deficiency corrections; 12 projects that can complete construction in FY 09; and 41 others.

Operation and Maintenance

The Budget provides \$2.638 billion for operation and maintenance (including \$163 million in the MR&T account). It emphasizes performance by focusing on the maintenance of key facilities. For example, the Budget continues to give priority to those harbors and waterway segments that support high volumes of commercial traffic, such as

the heavily-used Mississippi and Ohio Rivers, and the Illinois Waterway. The Budget also funds harbors that support significant commercial fishing, subsistence, or public transportation benefits.

The Budget presents information for operation and maintenance activities by 54 areas based on U.S. Geological Survey sub-watersheds, setting the stage for improved management of Civil Works assets in FY 09, and more systematic budget development in future years. As in the FY 07 and FY 08 Budgets, the operation and maintenance program also includes four activities that are directly related to the operation and maintenance of Corps projects but previously were funded in the construction program: (a) compliance with the Endangered Species Act at operating projects, (b) rehabilitation of components of existing projects, (c) replacement of sand lost due to the operation and maintenance of Federal navigation projects, and (d) construction of dredged material placement facilities, projects, or features (including islands and wetlands) to use materials dredged during Federal navigation operation and maintenance activities.

The Budget transfers responsibility for these activities to improve investment decisions on project operation and maintenance, and better provide accountability and oversight for those decisions. For similar reasons, the \$10 million for the National Levee Inventory program is funded in the operations and maintenance program. The Budget provides \$270 million for the operation and maintenance of recreation areas at Corps projects. The Budget again proposes legislation to raise additional funds to upgrade and modernize recreation facilities through expansion of the current fee structure, and through voluntary partnership arrangements.

Investigations

The Budget provides \$92 million for investigations (including \$1 million in the MR&T account). Within this amount, the Budget includes \$1 million for studies funded to comply with the independent peer review requirements of Section

2034 of the Water Resources Development Act of 2007, and \$2 million for a high-priority study of the vulnerability of the U.S. to damage from flooding, including an assessment of the comparative risks faced by different regions of the U.S. The study will provide background for a subsequent effort by policy officials to develop recommendations to improve existing Federal programs, authorities, and roles.

Emergency Management

The Budget emphasizes disaster preparedness by providing \$40 million in the Flood Control and Coastal Emergencies account to prepare for flood and coastal emergencies and other natural disasters. In addition, the Operation and Maintenance account includes \$6 million for the national emergency preparedness program, and \$12 million for facility protection and security.

Regulatory

The Budget provides \$180 million for the Regulatory Program to protect the Nation's waters and wetlands.

Everglades and South Florida Ecosystem Restoration

The Budget provides \$185 million for this program, an increase of \$54 million (41 percent) compared to the enacted 2008 level. The Budget emphasizes continued funding for the Modified Water Deliveries to Everglades National Park project, the Kissimmee River restoration effort, and the Comprehensive Everglades Restoration Plan.

The Budget includes initiatives leading to the development of a more systematic, performance-based budget and improved asset management. Many of these initiatives are in response to program assessments using the Program Assessment Rating Tool (PART). To help identify, evaluate, and establish priorities for the maintenance, replacement, and rehabilitation of existing flood and storm damage reduction, commercial navigation,

and hydropower assets, the Budget provides funding to develop asset management systems and risk-based condition indices, and to measure performance under new performance measures using PART. These analytical tools enable the Corps to more strategically evaluate these investment choices for existing Corps assets.

This Budget represents the prudent use of available funding to advance important, mission-based objectives. I am proud to present it.

Sincerely,

John Paul Woodley, Jr.
Chairman, U.S. Section; and Assistant
Secretary of the Army (Civil Works)

PIANC NEWS

InCom Working Group 30 (WG30) Update: Inventory of Inspection and Repair Techniques of Navigations Structures (Steel, Concrete, Masonry, and Timber) both Underwater and In-the-Dry *by Chad Linna*

Meeting Venue and Attendance

The fifth meeting of WG30 was held in Bratislava, Slovakia, from January 31 through February 2, 2008, hosted by Mr. Vladimir Holcik of the Water Management Development Enterprise (Vodohospodarska vystavba, s.p.), Bratislava. Twelve members were in attendance. The meeting spanned 3 days, allowing the Working Group time to edit sections of the final report and partake in a bus tour along the Danube River, Gabčíkovo Locks, and a hydropower facility. Mr. Rafael Vara, a new member representing Spain, was welcomed to the Working Group. Each team member contributed key elements to the report. The composite draft will be reviewed during the June meeting in Hannover, Germany.

Agenda

WG30 had the pleasure of meeting Mr. Gabriel Jencik, the plenipotentiary of the Slovak Government on the issue of the Water Policy Program (WPP) Gabčíkovo - Nagymaros Project; and Mr. Vladimír Haviar, President of the Slovak National Committee of PIANC. Each provided an in-depth description of the Slovakian section of the Danube River, the history of waterway projects along the river, and adverse situations with neighboring countries involving navigation, commerce, and hydropower along the Slovak/Hungarian border.



Members of InCom WG30 in attendance, left to right; Chairman Eric Van Draege (Belgium), Peter Van Besien (Belgium), Rafael Vara (Spain), Jukka Tuovinen (Finland), Ronald Heffron (United States), Vladimír Holcík (Slovakia), Andreas Husig (Germany), Brahim Benaissa (France), Chad Linna (United States), Hiroshi Yokota (Japan), Astrid Laemont (Belgium), and Hans Joachim Uhlendorf (Germany). Absent was Robert Willis (United States).

Tour

WG30 team members in attendance took a bus tour along the Danube River and witnessed the WPP, locks, white water area in Cunovo, the former main flow of the Danube River near Gabčíkovo village, two locks in Gabčíkovo, as well as the navigation tower and control room for the entire

Cunovo and Gabčíkovo system. Following the Danube navigation and hydropower project presentations, WG30 members understood the opinion of the Slovak National Committee of PIANC in the case of WPP System Gabčíkovo - Nagymaros. The navigation channel between the Gabčíkovo locks and the end of the Slovak/Hungarian part of the Danube River could be fully navigable with a WPP Nagymaros structure, or another WPP close to this project.

Proposed Future WG30 Meetings:

- Hannover, Germany June 4-6, 2008
- Tokyo, Japan October 7-9, 2008
- Madrid, Spain (If required)
- Brussels, Belgium Fall 2008 (present Report to the PIANC Committee)

PIANC Announces New Inland Navigation Commission (InCom) Working Group (WG127) “Fish Passage”

Background

Improving fish passage through navigation locks, dams, and weirs is recognized as an important way to restore river ecosystems. Weirs and dams are a major cause for the decline and extirpation of populations of migratory fish species on a worldwide scale. Declines in aquatic habitats and abundance of large river fish since the construction of many navigation control structures have only recently been quantified in large rivers.

Many commercially important and endangered species require mitigation measures like fish passes and artificial breeding programs to maintain existing population levels. Facilities to enhance upstream as well as downstream migration at navigation dams are of utmost importance since they can provide access to large areas of spawning sites, juvenile habitats or feeding grounds.

Programs to restore longitudinal connectivity to navigable waterways have been employed in Europe and in parts of North and South America, Asia, and Australia.

A variety of approaches have been used to enhance fish movements over dams, including both structural and non-structural measures. However, many measures are unsuccessful or only partly successful because of poor construction of fish passes and insufficient knowledge of the requirements of target species to maintain healthy populations (e.g., number or percentage of upstream migrants needed to reach spawning sites, area of spawning sites, juvenile habitats needed for a fish population, etc.). Quantifying the success of these measures has been less consistent, particularly for those measures addressing passage for warm-water fish species.

Objective

The objective of WG127 is to summarize existing knowledge on effective fish passes for upstream migration as well as on special devices for a safe downstream migration in waterways. The requirements of migratory fish species to maintain or re-establish healthy populations in waterways and adjacent waters will be defined. WG127 shall elaborate common definitions, standards, and measurements to restore or maintain longitudinal connectivity for migratory fish species using structural and non-structural fish passage strategies at locks and dams while minimizing detrimental effects on navigation.

Detailed information will be assembled on the following issues:

- Structural and non-structural fish passage methodologies that restore longitudinal connectivity in waterways (identification of new types of structures as well as reviewing existing installations).
- Effective bio-response monitoring techniques for quantifying the success of fish passage structures on large rivers.

- Biological and hydraulic computer simulation techniques for predicting the effects of fish passage structures on fish behavior, and for determining the hydraulic effects of fish passage structures on navigation.
- Requirements of migratory fish species on connectivity, habitat availability, etc., to maintain or re-establish healthy populations in waterways.
- Computer simulation techniques to predict the effects of enhancing longitudinal connectivity, habitat availability and quality, fisheries related mortality, etc., on population size of important target species (salmonids, sturgeons, shads, etc.).
- Examine comparative cost and economic benefit of installations taking into account size of river and height of dam.

MarCom Working Group 52 (WG52) Update: Criteria for the (Un-) Loading of Container Ships

by Dan Allen

Objective of WG52

MarCom WG52 is collecting information on reduced container handling efficiency in relevant ports due to long-period wave action, wind, and other effects. It is believed this information on its own will provide valuable data for new criteria, along with an understanding of the theoretical causes driving ship motion. Consequently, the main objectives of WG52 are to build a database with field data and crane operator input to establish acceptable ship motion associated with container loading, and to update the recommendations of the report of MarCom WG 24 "Implementation Manual for Life Cycle Management of Port Structures."

Meeting Venue

The most recent meeting of WG52 was held in Bremerhaven, Germany, April 15-16, 2008.

Attendees:

Members of WG52 in attendance included Harry Mohns, Chairman (Germany), Jens Kirkegaard (Denmark), Martijn P. C de Jong (The Netherlands), Chris Boysons (UK), and Dan Allen (US).

Scope of Work

Update the previous report on allowable ship motion for continued operation focused on container ships, taking into consideration the larger vessels operating now, as well as equipment changes.

Status of the Effort

Draft report in preparation. Section authors have been defined. A questionnaire has been sent to ports worldwide, while another questionnaire will be sent to operators and shipping lines.

MarCom Working Group 55 (WG55) Update: Safety Aspects Affecting Berthing Operations of Tankers at Oil and Gas Terminals

by Carl August Thoresen

Objective of WG55

The objective of Maritime Commission (MarCom) WG55 is to give guidance to port authorities to define their own rules of admission, handling, etc., of oil and gas tankers, giving limits for safe berthing and un-berthing with or without tug assistance. The intention of this study is to highlight the main safety aspects affecting the berthing and un-berthing operations of oil and gas tankers to/from a terminal. To this time there have been no common national or international regulations, recommendations, or standards for taking a large oil or gas tanker to a terminal regarding the safety aspects of the berthing and un-berthing operation.

Meeting Venue

The most recent meeting of MarCom WG55 was held in Wallingford, England, on February 27-28, 2008. The next meeting will be held in August 2008, at a location still to be determined. A subsequent meeting is tentatively scheduled to be held in December 2008.

Attendees

Members of WG55 in attendance included Chairman Carl August Thoresen, Secretary Svein Ove Nyvoll, Jose Llorca, Sergi Ametller, Syed Abidi, Lawrence K. Cunningham, Frederick Vogel, Jean Persy, Mark McBride, Willem Hoebee, Andy Doherty (Oil Companies International Marine Forum), and Captain Andrew Murray (Society of International Gas Tanker and Terminal Operators).

Scope of Work

Development of guidelines that address towage in ports, berth and facility spacing, operating environmental limits, method of environmental force calculations, and operational safety factors.

Status of the Effort

Significant progress has been made as important materials have been submitted and reviewed for consideration for inclusion into four of the major sections of the working document. Much work still remains to be done to establish and refine the guidelines to be included in each report section. The draft report is scheduled for submission to the Marine Commission for review in 2009.



Call for Papers – 2009 De Paepe- Willems Award Contest International Navigation Association (PIANC)

The De Paepe-Willems Award is given by PIANC for the most outstanding technical paper prepared on an aspect of waterborne transport. Categories include policy, management, design, economics, integration with other transportation modes, technology, safety, public involvement, and the environment. The aim of the De Paepe-Willems Award is to encourage Young Professionals (YPs) to submit technical papers in the field of interest of PIANC. Candidates must not have reached the age of forty (40) on the 31st of December of the year of submission of the paper.



Ir. Gustave Willems
1901 - 1982



Ir. Robert De Paepe

The PIANC USA award winner in 2009 receives a \$1,000 U.S. Savings Bond, an expense-paid trip to the 2009 PIANC USA Annual Meeting, and an individual membership in PIANC USA for 5 years. The PIANC USA award-winner will be invited to present his/her paper at the 2009 PIANC USA annual meeting, and an article summary will be published in the PIANC USA Quarterly Bulletin. The PIANC USA winner's paper is forwarded for international competition in 2009. The international winner in 2009 receives a trip to the 2009 Annual General Assembly (AGA), which will be held in

Helsinki, Finland. The international award-winner will be invited to present his/her paper at the 2009 AGA, and the paper will be published in the PIANC Magazine. The International award winner receives € 5,000 and a 5-year individual membership.

The deadline for submitting paper abstracts for the 2009 contest is **June 1, 2008**, with technical paper submittals required by **August 1, 2008**. Please visit the PIANC USA website for more details on current activities of the organization (<http://www.pianc.iwr.usace.army.mil/>), and the International PIANC website for information on qualifying for and preparing DePaepe-Willems papers for competition (<http://www.pianc-aipcn.org/>). For more details contact Edmond Russo, Chair, Publications Committee, PIANC USA, at Email: edmond.j.russo@usace.army.mil, phone (601) 634-2067.

Andrew S. Thomas wins 2008 De Paepe-Willems Award

Mr. Andrew S. Thomas, EIT, Moffatt and Nichol, Seattle, Washington, was named winner of the 2008 De Paepe-Willems Award. This award is presented annually by PIANC USA for the most outstanding technical paper prepared on an aspect of waterborne transport. The aim of the De Paepe-Willems Award is to encourage Young Professionals to submit technical papers in the field of interest of PIANC. The title of his award-winning paper is "*Subsurface 3D Modeling: An Application to Waterfront Project Planning and Site Evaluation.*"



*Andrew S. Thomas, EIT,
Moffatt and Nichol, Seattle,
Washington.*

Since graduating from Montana State University, Mr. Thomas has been employed by

Moffatt and Nichol as a waterfront planning and design consultant (EIT) in Seattle. He is certified in Surface Supplied Air Commercial Diving, and as an Advanced SCUBA Diver. His work typically consists of waterfront planning, design, and topside/underwater inspection of ports, ferry terminals, marinas, and various other marine facilities.

As the PIANC USA 2008 De Paepe-Willems Award winner, Mr. Thomas received a \$1,000 U.S. Savings Bond, an expense-paid trip to the 2009 PIANC USA Annual Meeting, and an individual membership in PIANC USA for 5 years.

Subsurface 3D Modeling: An Application to Waterfront Project Planning and Site Evaluation; **Synopsis** *by Andrew S. Thomas*

Work-stopping archaeological discoveries during waterfront construction further increase awareness of the risks associated with construction undertakings in potentially sensitive areas of historic interest. The increasing awareness combined with the risks themselves introduces a challenge to the waterborne transportation industry. Specifically, there is need for a tool that allows for more efficient representation of site data to accurately define an Area of Potential Effects (APE) and the effects to be caused by planned undertakings. As an ideal solution, subsurface 3D modeling shows existing conditions with utmost clarity, in a manner comprehensible to all associated parties. The application provides a focal point for stakeholders, regulatory agencies, and project teams, and in turn, leads to the ongoing and collaborative communication necessary for beneficial project planning and development. Subsurface three-dimensional (3D) modeling is unique in nature, and this paper attempts to demonstrate its benefit to the waterborne transportation industry on a universal level.

3D Site Modeling as a Progressive Solution

Computerized 3D modeling provides a single display of a site, its subterranean conditions, its APE, historic and proposed excavations and disturbances, and any other known features related to potential developments. A 3D model ties together virtually all the information that is typically required of a site, which would otherwise be documented by multiple forms to convey a common understanding. The models are extremely accurate because they are composed of thousands of precise, physical survey points. The application is useful as a standalone tool, but also provides standard forms of site definition including plan, profile, and section views as desired.

The primary advantage of modeling a site in three dimensions (3D) is that it provides an accurate replication of subterranean conditions, making them visible and understandable to all parties interested in the site's potential development. A key feature that further sets this 3D modeling application apart from others is its unique user-interface. Namely, model users experience nearly unlimited virtual interaction. Because a 3D model is navigable, it provides users with a unique ability to intensely focus on individual areas of concern. The physical arrangements of features visible at angles between plan and section views are captured from as close in or as far away as desired. Efforts of translating between plan and section views to understand what lies beneath a site are eliminated.

The overall influence of 3D modeling on a project is encouragement of continuous and collaborative communication between interested parties. The application does not stray from the methods currently used to make an assessment, but portrays data and information more conveniently and effectively. The intent is to provide a common focal point for regulatory agencies, specialists, experts, engineers, designers, stakeholders, and other organizations so that communication is maintained and decisions can be made in a timely manner.

Approach

Data is gathered from as many relevant resources as possible to ensure that a set of information is complete and not conflicting. The data is used to show three elements of a 3D model: the site as it appears above ground (Figure 1), or the terrain; past, present, and proposed construction excavations; and subsurface conditions, or the layers of soil and other matter below ground. Data typically originates from survey, historic drawings, alternative project layouts, and various reports (environmental, geotechnical, etc.).

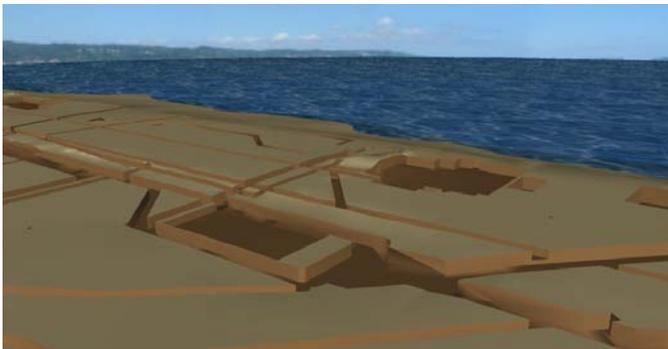


Figure 1. Site excavations as seen above ground.

To model soil layers, a triangulated irregular network (TIN) can be created for the upper and for the lower surface of a layer. TIN lines form a series of triangles, creating upper and lower planes by simple geometry. The TIN lines can be thought of as the “skeleton” of a subsurface layer, and allow for monitoring of the layer’s construction. Figure 2 shows a set of soil borings in 3D, and the TIN lines used to form the upper and lower surfaces of a layer. The soil sample widths in are exaggerated so the coloration is visible. The colors represent instances of different units, or layers detected in each sample. The layer bound by the TIN lines is designated by purple coloration. The green lines represent the upper TIN surface and the lower is represented by the purple lines. The network lines show how data points between actual boring locations are interpolated.

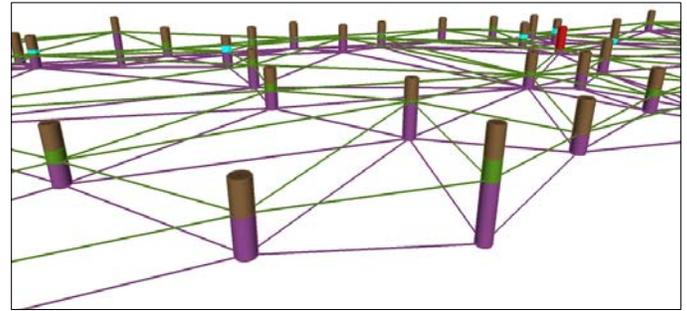


Figure 2: Upper and lower TINs for a soil layer.

Presence of every unit will not necessarily be detected in each boring, which leaves gaps in some layers. In essence, some of the layers have openings, or discontinuities within the network of borings, because it is common for some borings to indicate presence of all known units while others exhibit only two or three, such as in Figure 2.

Project Benefits

The goal is to display the effects introduced to a site, and for some projects, excavations are not the only potential effects. Vibrations from pile driving, soil displaced for drilled shafts, and soil contamination are examples of effects that potentially alter the character of historic properties. A navigable model is extremely useful for viewing subterranean arrangements of features and effects because viewers are able to look up toward the underside of the surface.

Stakeholders prefer to avoid impacts near a sensitive area wherever feasible, and their needs can be facilitated with a 3D model that provides a project team the ability to fully view and consider different options. Subsurface views are especially useful because they allow a project team to evaluate the overall risks of disturbing an area by choosing one alternative over the other. Provided a graphical representation of future excavations combined with existing subterranean conditions, the project team can discuss layer avoidance strategies. For example, Figure 3 shows a sensitive layer overlain by soil displacements for two potential utility layouts. Trenching for an initial utility design layout is shown in brown, a sensitive layer in

turquoise, and trench excavations for an alternative route are designated by red. The brown trench clearly intersects the sensitive layer in two locations, so the route shown in red is planned as an avoidance strategy.

Conclusions

As a growing and integral part of infrastructure, the waterborne transportation industry continues to develop points of access to bodies of water around the world, and inherent to the emergence of additional access points is an increasing demand for unoccupied waterfront space. Decreasing site availability leads to increased consideration of subterranean conditions at potential waterfront project sites. Conditions beneath potentially sensitive sites are further regarded due to a timeline populated with instances of construction-stopping archaeological discoveries. Such instances strongly suggest the need for a more progressive tool that can be used by a project team to fully understand subsurface conditions prior to commencing with any high-risk undertakings.

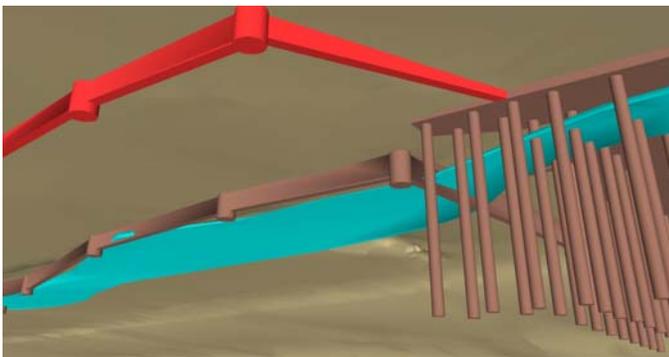


Figure 3: Subterranean view.

A navigable 3D model makes efficient use of the information known about a site and allows it to be fully understood by stakeholders and regulatory agencies, specialists, designers and engineers. The overall concept is straightforward: a single 3D representation of the existing site, its subsurface layers, historic excavations, geologic developments, and planned uses. Overall, data is more efficiently used to allow for planning of alternative project layouts and options, which minimizes the risk of disturbing potentially sensitive areas.

Thanks to PIANC upon My Retirement as Environmental Commission Chairman *by Robert Engler*

I want to take this opportunity to thank the Environmental Commission (EnviCom) for the memorable “retirement” dinner in Brussels, Belgium, on 7 February 2008. I want to especially thank those of you that put together the “Memory Book” that covered the 15 or so years of the life of the Environmental Commission (EnviCom), and my involvement. I have really enjoyed reading it multiple times and “showing it off” to my family and colleagues. It is a marvelous document of which I am very proud.

EnviCom has been a journey of joy, accomplishment, and friendship. I have never been part of a team as accomplished, hard working, and visionary as the EnviCom team. Our team changed the look and operation of PIANC, and has seen PIANC achieve global technical credibility with the “non-traditional” navigation stakeholders. EnviCom has set the global technical standard of “working with the environment” in navigation infrastructure. The EnviCom team has made a real “difference”!

We live in a world of change, and change is good when well managed and directed. I am convinced that the change in EnviCom under the visionary leadership of Harald Koethe and Edmond Russo will continue to build on its solid foundation, and will achieve even greater horizons.

I will miss working with EnviCom members, but I am not leaving PIANC as I am now a Vice President and Commissioner of the U.S. National Section (no age limits) and I will try to visit EnviCom from time to time and as I have the opportunity.

Happy trails.



Retirement dinner 7 February 2007, in Brussels, Belgium, honoring Robert Engler (left) outgoing EnviCom Chairman; Harald Koethe (center) incoming EnviCom Chairman; and Eric van den Eede (seated) PIANC President.

PIANC USA Appoints Rees and Bridges as Principal and Alternate Representatives to Environmental Commission

Drs. Susan Rees and Todd Bridges have been appointed by PIANC USA as Principal and Alternate Representatives, respectively, to the PIANC Environmental Commission (EnviCom) effective 2008. EnviCom is responsible for technical activities of the International Navigation Association (PIANC) in the field of environmental matters related to navigation. It recommends subjects for study by Working Groups, for discussion at Congresses, and for articles to be published in the Bulletin of the Association. Representatives must be highly qualified in the subject of the standing committee.



Dr. Susan Rees, PIANC USA Principal Representative to EnviCom.

Dr. Rees is Program Manager of the Mississippi Coastal Improvements Program of the Planning and Environmental Division, U.S. Army Corps of Engineers Mobile District. As such, she oversees a \$12 million study to recommend projects in coastal Mississippi associated with the storms of 2005 to provide hurricane and storm damage reduction, fish and wildlife preservation, prevention of shoreline erosion, restoration of freshwater flows, and prevention of salt water intrusion. She also oversees a \$107 million construction program in coastal Mississippi. Dr. Rees serves as the District representative on the Gulf Alliance Federal Workgroup, Gulf of Mexico Program, and is chairperson of the Mobile Bay National Estuary Program.

Formerly, Dr. Rees served as the District Coastal Environment Team Leader/Lead Oceanographer with major responsibilities including oversight of environmental compliance and environmental restoration of civil works activities in the panhandle of Florida, coastal Alabama, and coastal Mississippi. Her doctorate is in Marine Science from the University of South Carolina.



Dr. Todd Bridges, PIANC USA Alternate Representative to EnviCom.

Dr. Bridges is the U.S. Army's Senior Research Scientist for Environmental Sciences. His primary areas of research at the U.S. Army Engineer Research and Development Center (ERDC) include (a) development of risk and decision analysis methods applied to water resource infrastructure and environmental management, and (b) the science and engineering of sediment management. Dr. Bridges research projects include risk and decision models, and bioavailability and toxicology of chemical contaminants.

Dr. Bridges is Director of the Center for Contaminated Sediments, and Program Manager for the Dredging Operations and Environmental Research program. He has chaired international technical working groups within the Scientific Group of the London Convention and PIANC. His doctorate is in Biological Oceanography from North Carolina State University.

Mr. Edmond Russo, former Principal Representative from PIANC USA to the EnviCom, resigned to accept the position of Vice Chair and Secretary of EnviCom, effective 2008. Mr. Russo has also served since 2004 as Chair of the PIANC USA Publications Committee, and Editor of the PIANC USA Bulletin.



Mr. Edmond Russo, former PIANC USA Principal Representative to EnviCom, is Chief, Coastal Engineering Branch, Coastal and Hydraulics Laboratory, ERDC, Vicksburg, Mississippi.

Announcement and Call for Papers

Gulf Coast Hurricane Preparedness, Response, Recovery, and Rebuilding Conference

A Regional Conference with International Application: Mobile, Alabama, November 11-14, 2008

The Gulf Coast Hurricane Preparedness, Response, Recovery, and Rebuilding Conference is being organized by PIANC USA. The objectives of the event are: (a) to learn from recent hurricane experiences and challenges; (b) to develop proactive navigation preparedness, response, and recovery plans on regional and watershed scales; (c) to foster interagency learning, coordination, and cooperation leading to community and ecosystem resiliency; and

(d) to provide technical experience and directions for engineering and environmental challenges.

Conference Themes

- Ecosystem Resiliency: Coastal Recovery.
- Navigation (Ports and Industry).
- Community Resiliency: Watershed Wide Flood Hazard Master Planning.
- Emergency Preparedness and Response.

This conference is a “must attend” conference for all professionals interested in sharing knowledge and experience in post-storm ecosystem restoration and coastal infrastructure protection. Take this opportunity to share your personal insight, technical experience, and knowledge by submitting an abstract for consideration. Conference information will be posted at www.pianc.us.

Co-Sponsors

- American Association of Port Authorities.
- Association of Floodplain Managers of Mississippi.
- Coasts, Oceans, Ports and Rivers Institute of ASCE.
- Dredging Constructors of America.
- EPA Gulf of Mexico Program.
- Gulf Intracoastal Canal Association.
- Gulf of Mexico Coastal Ocean Observing System Regional Association (GCOOS).
- Institute for Trade and Transportation Studies.
- National Oceanic and Atmospheric Administration.
- Northern Gulf Institute.
- Transportation Research Board/Marine Board.
- U.S. Army Corps of Engineers.

Conference Format

This 4-day conference will include:

- Technical presentations.

- Exhibits.
- Technical field tours to local sites of interest.
- Pre-conference workshops.
- Networking functions.
- Featured luncheon speaker.

Conference Topics

- Long Term Economic and Environmental Recovery.
- Emergency Preparedness.
- Watershed Wide Flood Hazard Master Planning.
- Self-Sustaining Ports.
- Navigation.
- Regional Sediment Management.
- Ecosystem Resiliency.
- Community Resiliency.
- Beneficial Uses of Dredged Material.
- Flood and Storm Damage Reduction.
- Engineering and Environmental Challenges.
- Technological Advances.



Hurricane Katrina damages (photograph by National Oceanic and Atmospheric Administration).

Key Dates

- Abstracts due: May 15.
- Author notification: June 15.
- Registration opens: August.
- Presentations due to moderators: October 28.

Abstract Submission Information

Each abstract must be written in English and limited to 500 words. Abstracts shall be submitted to pianc@usace.army.mil. Deadline for abstract submissions is May 15, 2008.

On the abstract form, please:

- Designate the conference topic listed that best fits your paper.
- Provide the required contact information for the corresponding author and any co-authors.
- Include a text-only summary description of the topic of the paper, and a statement as to why the paper will be of interest and benefit to conference attendees.

Proposing authors must recognize that submission of an abstract indicates commitments to attend the conference to present the paper. PIANC USA will accept or reject proposed papers based on the information provided in the abstract. To the extent possible and appropriate, papers will be assigned to conference technical sessions based on the topic identified by the author and co-authors, as best suited for their subject material. PIANC USA reserves the right to assign papers to other conference sessions. For questions regarding abstract submission, please contact PIANC USA at pianc@usace.army.mil.

Technical Workshops

Technical workshops are planned for November 11. Any professional who is interested in conducting a technical workshop related to the conference topics, and who has a strong background in the specific technical field of expertise, should submit a workshop proposal to PIANC USA. The

proposal should include a description of the proposed presenter's qualifications and credentials, a summary of the proposed course content, and a description of how participants will benefit from course attendance. Please send proposals to pianc@usace.army.mil.

Mobile, Alabama

The Gateway to the Gulf Coast, Mobile, Alabama, is a beautiful, historic, port city by Mobile Bay. From historic homes under a canopy of majestic oaks to lush, tropical gardens, Mobile offers a Southern charm that is unique and enjoyable for visitors from around the world. Founded by the French over three centuries ago, Mobile was once the capital of the Colony of Louisiana and later governed as colonies of both Britain and Spain. Mobile's "gumbo culture" makes it a vibrant port city that is unique in America.

Find out all that Mobile Bay has to offer when you attend the conference. With its unique attractions, fresh delicious seafood, Delta excursions, fascinating museums, 21 world-class golf courses, white sandy beaches, and beautiful historic homes, the possibilities are endless!

Exhibits and Sponsors

If you are interested in exhibiting and sponsorship opportunities for this conference, please contact Kelly Barnes at kelly.j.barnes@usace.army.mil or 703-428-9090.

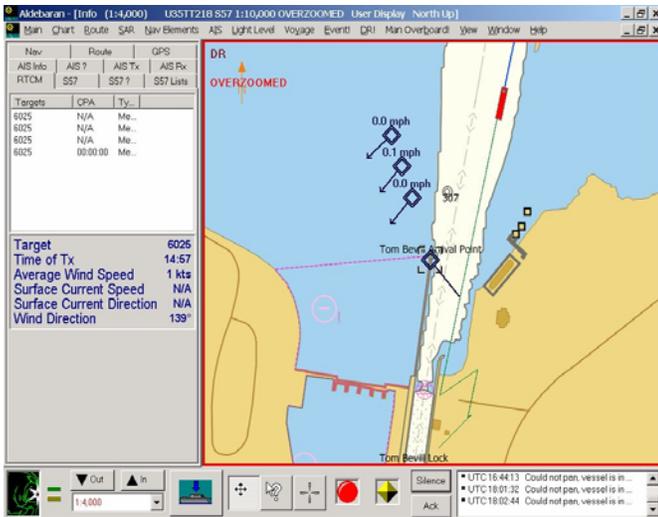
INDUSTRY NEWS

U.S. Army Corps of Engineers Inland Navigation Safety Initiative: Opening Remarks to the 2008 Inland Waterways Conference by Michael F. Kidby

It is always a pleasure to attend the Inland Waterways Conference and meet with our U.S. Coast Guard (USCG) and navigation industry friends, and partners on the waterways, to discuss issues and concerns and share ideas and perspectives. Today, I will be sharing information about the U.S. Army Corps of Engineers Inland Navigation Safety Initiative (INSI).

The Inland Navigation Safety Initiative began as a concept last year after I attended a Coast Guard 8th District/American Waterways Operators/River Industry Executive Task Force/Regional Quality Steering Committee meeting in New Orleans, Louisiana. I reported back to MG Don Riley, our Director of Civil Works, that this Team was looking at marine casualties along the Western Rivers to determine causal factors, patterns or trends in the casualties, and possible solutions. MG Riley was very interested in knowing what the Corps could do to increase safety at our lock and dam projects. The Corps is actively pursuing the following areas of concern.

- We are presently looking at our lock and dam accident records to determine any common thread as to why these accidents occurred.
- Real Time Current (and Wind) Velocity (RTCV) Measurement and Data Sharing technology will provide critical information to vessel pilots so that they can make better-informed decisions as they approach our locks. Outdraft causes cross currents. RTCV systems will be installed on Corps structures with known outdraft problems. These velocities will appear on our Inland Electronic Navigation Charts (IENC).



Real Time Current Velocity displayed on Inland Electronic Navigation Charts.

- Another technology developed last year is a very low-cost Lock Distance Measurement System (LDMS) that can be placed on the guard-wall, bull nose, or other location of concern to tell vessel pilots how far the nearest part of their tow is to impact or allision. Every vessel will receive real time distance transmitted by USCG Automatic Identification System (AIS), and displayed on the IENCs with 3 ft accuracy.



Lock Distance Measurement System.

- An issue the navigation industry has faced is glare from some of our required lock and dam signs. Our Sign Advisory Working Group is meeting this month and will be working with sign material manufacturers, the navigation

industry, and our lock and dam project staff to identify specifically where this glare is a problem at night to tow pilots, and specifically what can be done to reduce or eliminate the glare problem.

- We are working with the Coast Guard, the navigation industry, and other Federal agencies (e.g., National Oceanic and Atmospheric Administration (NOAA)) to develop a Coastal and River Information Service (CRIS) for the sharing of:
 - Tow and commodity information:
 - IENC updates.
 - Lock conditions such as availability, queue time, etc.
 - RTCV information.
 - River stage, water release rates, etc.
 - Navigation safety information such as hazards, Aids To Navigation (AToN) status, etc. We plan to formalize this arrangement through an interagency Memorandum of Understanding (MoU) with the USCG and NOAA through the Committee on the Marine Transportation System to establish CRIS.
- A Bull Nose Energy Absorption Product Delivery Team has been established between the Lakes and Rivers Division (LRD) and the Engineer Research and Development Center (ERDC). The primary aim of this team will be to design a bull nose which will absorb enough energy during a barge/tow impact to prevent failure of the lashings and subsequent “breaking apart” of the tow. If successful, this design could potentially eliminate many of the most serious accidents we have experienced at navigation locks and dams of the Inland River System.

- We are developing a MoU with the USCG to share infrastructure, and to define the Corps role within the USCG National Automatic Identification System (NAIS) program. Demonstrations are planned for McAlpine Lock on the Ohio River, and at the Galveston Causeway Bridge. The Corps will provide the RTCV packages. The USCG will provide the AIS architecture. NOAA will provide the wave and tide information. The navigation industry (Gulf Intracoastal Canal Association) will purchase the equipment, and operate and maintain it. Currently AIS is received only in the Huntington, West Virginia; Cincinnati, Ohio; Pittsburgh, Pennsylvania; St. Louis, Missouri; and Memphis, Tennessee, locations.



Galveston, Texas, causeway bridge where the Automatic Identification System will be demonstrated.

- A Product Delivery Team has been established and met during the week of March 2, 2008, to consider:
 - Crew changes at Corps locks are a major concern. Can a Standard Operating Procedure (SOP) be developed to make the navigation industry crew changes safer and make the Corps projects more secure? (Perhaps a Crew Change video might result from this effort.)
 - Drift and debris management at Corps lock and dam projects are essential. Can an SOP be developed to address this concern?
 - It should be determined whether Corps Headquarters guidance is needed to address the concern that navigation industry pilots are being asked to turn off their radar while transiting Corps locks. This appears to be a random issue.
 - Publication of a 2- to 5-year listing of scheduled lock closures by fiscal year would help the navigation industry make needed long-range plans.
 - Placement of AIS antennae at Corps projects for USCG use has emphasized the need for a MoU between the USCG and the Corps that lays out each agency's roles and responsibilities.

In summary, much has already been achieved in the way of new technologies and strategies to improve navigation safety. Much is also presently underway. However, much still remains to be done. USCG and navigation industry collaboration and partnering is absolutely essential and required as the Corps moves forward with this significant Initiative. Benefits resulting from these collaborative efforts will include:

- Increased safety and security.
- Reduced environmental and infrastructure damages.
- Reduced downtime and repair costs, and certainly not least.
- Increased waterway, lock, and dam system reliability!

I sincerely thank you for this opportunity to discuss this very important Inland Navigation Safety Initiative.



Michael F. Kidby is the Senior Program Manager for Inland Waterways at Headquarters, U.S. Army Corps of Engineers (HQUSACE), in Washington, DC. His duties include oversight and support of the Civil Works Directorate's navigation mission, and

require close coordination both within the Corps as well as with other Federal agencies and stakeholders throughout the navigation industry. Mr. Kidby holds a BS degree in Civil Engineering from Oregon State University, and has been in the Operations Division of HQUSACE the last 20 years of his 33 years service with the Corps.

New President of the National Waterways Conference

A new President for the National Waterways Conference, Inc., based in Arlington, Virginia, was announced in late February 2008 by Gary LaGrange, Chairman of this organization that supports all facets of the nation's water resource interests.

Amy W. Larson, who has been general counsel of the Federal Maritime Commission in Washington, DC, since 2004, was named to the position effective 1 March 2008, by LaGrange, President and Chief Executive Officer of the Port of New Orleans, Louisiana. Larson was chosen from a field of nearly 80 candidates after a 6-month search to succeed the late Worth Hager, said LaGrange. She will be only the third person to hold that position.



Amy W. Larson, new President of the National Waterways Conference, effective March 1, 2008.

"I am confident that Larson will build on her success as the Maritime Commission's general counsel to lead the Conference into its second half century of serving the broad interests of its members," LaGrange said.



Gary LaGrange, President and Chief Executive Officer, Port of New Orleans, Louisiana; and Chairman, National Waterways Conference, Inc.

In accepting the position, Larson said she looks forward to continuing and expanding the Conference's efforts in developing a national policy that meets the varied needs of the public, shippers, recreational users, ports, industrial users, and other stakeholders while supporting the waterways' environmental needs and economic development.

The 200-member conference has worked toward those needs since its formative years 53 years ago, even before being formalized in 1960.

Larson said in her new role she will be working with Congress, the Administration, U.S. Army Corps of Engineers, and as a partner with her counterparts in the industries that support the Conference's mission.

Larson, a native of Milton, Massachusetts, earned a Bachelor of Arts degree from Wheaton College in Norton, Massachusetts, where she studied political science, and has a law degree from the Columbus School of Law at the Catholic University of America in Washington, DC. She lives in Arlington with her husband and two daughters, and enjoys sailing on the Chesapeake Bay.

The Inter-American Committee on Ports (CIP) *by Carlos Gallegos, Secretariat*

To strengthen and improve the development and planning of existing and new port facilities, there has been an increasing need to foster private and public sector partnerships and encourage institutional, legal, environmental, and financial dialogue and collaboration across the port industry. The Inter-American Committee on Ports (CIP) of the Organization of American States (OAS) is encouraging this avenue of cooperation among the port community of the Americas. The CIP is the permanent inter-American forum of Member States of the Organization, which works to strengthen hemispheric cooperation in the area of port sector development, with the active participation and collaboration of the private sector. The CIP is comprised of 34 Member States of the Organization, represented by the highest-level national government authorities from the port sector. CIP acts as the principal advisory organ to the OAS and its Member States in all topics concerning port sector development such as proposing and promoting hemispheric cooperation policies as well as facilitating the improvement of port sector activities in the hemisphere. CIP also proposes strategies to attract and mobilize additional resources to finance partnership for development programs of Member States. Furthermore, the CIP actively works to promote port sector development through various scholarships, training programs, seminar, and workshops held within the hemisphere.

One of the principle avenues in which the CIP encourages port sector cooperation is through its public and private partnerships. To facilitate this collaboration, the CIP works through Technical Advisory Groups (TAG) which provide technical advice to the Committee on specific issues of port development. To exchange dialogue between these sectors, a TAG is integrated by government representatives of the Member States, specifically experts who specialize in the issue of each TAG, and by associate members who represent entities of the private sector that have a direct interest in these

issues. Associate members of each TAG represent a broad spectrum of the port industry such as port administrations and operating entities, academic, scientific, financial, development of industrial institutions, and other organizations related to port sector activities that have legal standing especially within the issue. The associate members provide an annual contribution and have a voice in TAG meetings but no vote, while Member States have both a voice and vote.

Due to the vast and dynamic array of issues that encompass the port sector, the CIP has created four TAGs for the 2008-2009 period that reflect the Committee's mission in strengthening cooperation across all areas of the port system. The four TAGs are: (a) Port Logistics and Competitiveness, (b) Port Security, (c) Navigation Safety, and (d) Environmental Port Protection.

The TAG on Port Logistics and Competitiveness is presided over by Mexico with Member States of Barbados, Bolivia, Brazil, Chile, Costa Rica, Ecuador, El Salvador, Honduras, Guatemala, Jamaica, Nicaragua, Peru, Saint Lucia, Suriname, United States, Uruguay, and Venezuela. This particular TAG specializes in issues involving infrastructure, administration and the operation of specialized terminals, information and telecommunications, port facilitation, logistics, industrial relations, operative and industrial safety, and strategic planning, among others. For the 2008-2009 period, its work plan includes identifying, compiling, and transmitting appropriate information on port logistics and competitiveness, designing and organizing international technical meetings, conferences or sessions with expert speakers, delegates, and guests, in addition to identifying the training needs in the area of port logistics and competitiveness. It is important to emphasize that this year the TAG will support the First Hemispheric Conference on Port Logistics and Competitiveness in Manzanillo, Mexico, with the objective of exchanging information and expertise regarding port logistics and competitiveness in the hemisphere, and identifying strategies and mechanisms for its improvement.

Since the events of 9/11, efforts to strengthen systems of security within the port sector have opened new challenges and opportunities for cooperation among the port community of the Americas. In this regard, CIP has created the TAG on Port Security which is presided over by the United States with Member States of Argentina, Bahamas, Barbados, Brazil, Canada, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, El Salvador, Guatemala, Guyana, Honduras, Jamaica, Mexico, Nicaragua, Panama, Paraguay, Peru, Uruguay, and Venezuela. This TAG has covered extensively the entry into force in 2004 of the International Maritime Organization International Ship and Port Security (ISPS) Code and its implementation across the hemisphere. It also covers issues such as the Inter-American Program of Training for Port Security; training needs, security equipment, networks of security officials, technical assistance in materials for port security and financing, the Inter-American Action Plan on Port Security, and the Strategic Framework for Inter-American Cooperation in Port Security Materials, among others. Furthermore, in order to exchange regional and international dialogue in this area, the TAG has supported the organization of two Hemispheric Conferences on Port Security (Miami 2004, and Puerto La Cruz 2006) and celebrated its Third Conference in Punta, Cana, Dominican Republic in April 2008.

The TAG on Navigation Safety was created to improve safety navigation through ports and harbors, to assist port authorities in making the best possible decisions to ensure the safety of maritime traffic, and to better understand the current trends and needs in the area. The TAG is presided over by Argentina with Member States of: Barbados, Brazil, Chile, Ecuador, El Salvador, Jamaica, Mexico, United States, and Venezuela. Areas of priority for this TAG include the supply of information for control systems of Vessel Traffic Systems (VTS) and Autonomous Intelligent Systems (AIS), determining the training necessities of pilots, and the sets of standards and definitions of professional profiles for VTS operators. For this year, its work plan includes compiling and exchanging

information on navigation safety including the use of specialized information technology systems in this area, identifying training needs, and preparing proposals and recommendations for improving navigation safety and its policies.

Finally, the TAG on Environmental Port Protection was created to re-affirm the relevance and importance of environmental protection measures in port activities, and because of the necessity to incorporate these measures in all public and private levels associated with the maritime port industry. The TAG is presided by Venezuela and is also integrated by Argentina, Barbados, Brazil, Chile, Dominica, Ecuador, El Salvador, Haiti, Jamaica, Mexico, Nicaragua, Panama, Suriname, Trinidad and Tobago, United States, and Uruguay. This TAG has covered an ample amount of environmental port issues including the situation of countries in Marine Pollution (MARPOL) and Oil Pollution Response and Co-operation (OPRC), international environmental conventions, the identification of training necessities in environmental port protection, the development of environmental management plans, the creation of a network to exchange experiences on the requirements of each country, the elaboration of a specific guide for ports on the potential for the certification of ports in ISO 14000, and the establishment of contingency plans for hydrocarbon spills. It is important to highlight that this TAG celebrated the First Hemispheric Conference on Environmental Port Protection in Panama in 2007, and will hold its second conference in Paranaguá, Brazil, in 2009.

Companies, institutions, and other private entities can become an Associate Member of a TAG by paying a membership fee for the fixed amount of U.S. \$2,000, which will run for a 2 year period from January 1, 2008 until December 31, 2009. As an Associate Member representatives can participate in TAG meetings with a voice; make technical presentations and promote their business, products, and services; participate without paying the registration fee for TAG meetings; the Executive Board; the Committee; CIP Conferences, seminars,

and technical events organized by their TAG; and receive specialized technical material and information that is provided during these occasions without cost; among others.

For 2008-2009, the following meetings and conferences are scheduled:

- Third Hemispheric Conference on Port Security: Punta Cana, Dominican Republic, April 7-11, 2008.
- First Hemispheric Conference on Logistics and Competitiveness: Manzanillo, Mexico, September 2008.
- Tenth Meeting of the Executive Board of the CIP: Buenos Aires, Argentina, December 2008.
- Meeting of the TAG on Logistics and Competition: Buenos Aires, Argentina, December 2008.
- Meeting of the TAG on Port Security: Buenos Aires, Argentina, December 2008.
- Meeting of the TAG on Navigation Safety: Buenos Aires, Argentina, December 2008.
- Meeting of the TAG on Environmental Port Protection: Buenos Aires, Argentina, December 2008.
- Second Hemispheric Conference on Environmental Port Protection: Paranagua, Brazil, 2009.
- Sixth Meeting of the Inter-American Committee on Ports: San Salvador, El Salvador, September 2009.
- Meeting of the TAG on Port Logistics and Competition: San Salvador, El Salvador, September 2009.
- Meeting of the TAG on Port Security: San Salvador, El Salvador, September 2009.
- Meeting of the TAG on Navigation Safety: San Salvador, El Salvador, September 2009.

- Meeting of the TAG on Environmental Port Protection: San Salvador, El Salvador, September 2009.
- Eleventh Meeting of the Executive Board of the CIP: to be decided, December, 2009.

The CIP, and especially the TAGs, provides opportunities for PIANC USA members to become actively involved in port issues and solutions throughout the Western Hemisphere. If you would like further information on the work of the CIP, opportunities within each TAG, or are interested in becoming an Associate Member, please visit www.oas.org/cip or contact the CIP Secretariat at cip@oas.org.



Carlos M. Gallegos has been the Executive Secretary of the Inter-American Committee on Ports (CIP) of the Organization of American States (OAS), based in Washington, DC, since 1993. A native of Peru, he has been with OAS since 1980 serving in various high-level positions. He is currently the OAS representative to the International Maritime Organization, the International Association of Ports and Harbors, and the American Association of Port Authorities.

Ports of LA/LB Plan to Curtail Emissions from Ships

The Los Angeles and Long Beach Boards of Harbor Commissioners have proposed incentives that will improve air quality through use of low-sulfur fuel. The Commissioners announced on March 18, 2008, they would vote on a bold plan to get vessel operators to switch to a cleaner-burning fuel within 40 miles of the Ports of Long Beach and Los Angeles, California, in a joint program to improve regional air quality.



Ports of Los Angeles and Long Beach, California.

The proposal by the Ports would employ incentives to encourage vessel operators to use cleaner-burning, low-sulfur fuel in their main propulsion engine. Sulfur oxides, which contribute to the formation of health-threatening soot or particulate matter, would be cut by as much as 11 percent and particulate matter by 9 percent, accelerating air quality improvements ahead of an already aggressive schedule set by the landmark San Pedro Bay Ports Clean Air Action Plan.

Cargo ships now generally use highly polluting bunker fuel, making ocean-going vessels the single largest source of air pollution at the two ports.

“We are moving full steam ahead in making our Ports the cleanest and greenest in the world,” said Los Angeles Mayor Antonio Villaraigosa. “By switching to clean-burning fuel we will cut air pollution and help Southern Californians breathe easier.”



Mayor Antonio Villaraigosa, Los Angeles, California.

“This proposal would immediately improve the air quality of Southern California,” said Long Beach Mayor Bob Foster. “It is a collaborative and creative effort to tackle the single largest source of pollution from these two ports and is a big step forward in our efforts to clean the air.”



Mayor Bob Foster, Long Beach, California.

Under the incentive proposal, the Ports would pay the difference between the price of bunker fuel and the more costly low-sulfur distillate fuel for vessel operators who make the fuel switch within at least 20 miles and out as far as 40 miles from the Ports. Vessels will also be required to use low sulfur fuel in their auxiliary while at berth in the Port complex. To qualify for the incentive program, the ships must also participate in the Ports’ voluntary Vessel Speed Reduction Program, limiting speeds to 12 knots during the switch to low-sulfur fuel. Most ships already participate in the speed reduction program, which also curbs emissions.

The incentive program is expected to cost the Port of Los Angeles as much as \$8.6 million and the Port of Long Beach as much as \$9.9 million annually. The staff proposal is for a 1-year program which would begin July 1, and expire June 30, 2009, unless extended by the two commissions.

The 1-year incentive proposal was considered by both Ports at a special joint meeting of the Los Angeles Board of Harbor Commissioners and the Long Beach Board of Harbor Commissioners, at Banning’s Landing Community Center, 100 E. Water Street, Wilmington.

On July 1, 2009, a pending California Air Resources Board regulation would require the use of low-sulfur fuel in cargo vessels' main propulsion engines within 24 nautical miles of the State's coast. The Ports' Clean Air Action Plan also calls for the Ports to accelerate ship emission reductions by including lease-based limits on sulfur content in fuel. This is still planned. The incentive program is aimed at reducing more emissions on an even faster schedule.

"Bunker fuel is a major source of port-related air pollution, and this program has the potential to dramatically cut the use of bunker fuel in a hurry," said Long Beach Harbor Commission President Mario Cordero. "Most shipping lines will be able to start participating immediately."



*Long Beach Harbor
Commission President Mario
Cordero.*

"This is another example of how the two Ports can and must work together to achieve dramatic results," said Los Angeles Harbor Commission President S. David Freeman. "And we'll continue to work together to implement these landmark clean air initiatives."



*Los Angeles Harbor
Commission President S. David
Freeman.*

"This program is the direct result of a partnership between the Ports and industry to reduce ship emissions," said John McLaurin, President of the Pacific Merchant Shipping Association. "The bunker fuel replacement initiative builds upon other successful voluntary emissions reduction programs around the Ports, including the vessel speed reduction program which has demonstrated a 90 percent compliance rate."

"PMSA and its members have been actively involved in virtually every successful voluntary Port improvement program and are leaders in the reduction of emissions throughout the goods movement industries," continued McLaurin. "Responsible green growth - simultaneous environmental improvements and expansion of Port infrastructure - is possible and supported by PMSA. Reducing Port congestion, expanding Port capacity and improving air quality are leading initiatives within a global green growth plan." PMSA member companies are already working to reduce emissions by exploring the use of a wide variety of cleaner fuels, engines, and retrofit technologies that exceed existing requirements. These strategies are constantly evolving as new fuels and technologies become available and include clean burning biofuels; employing new "clean diesel" engine and retrofit technologies; experimenting with new technologies, such as propane and natural gas fueled terminal equipment; and taking other innovative steps to improve west coast air quality.

More information regarding the plan to curtail emissions from ships at the Ports of Los Angeles and Long Beach may be obtained from Gordon Smith, Port of Los Angeles, Director of Media Relations, (310) 732-3568, (310) 418-6131 (cell), gsmith@portla.org; or from Art Wong, Port of Long Beach, Assistant Director of Communications and Public Information Officer, (562) 590-4123, (562) 619-5665 (cell), wong@polb.com.

Navigating Through Locks and

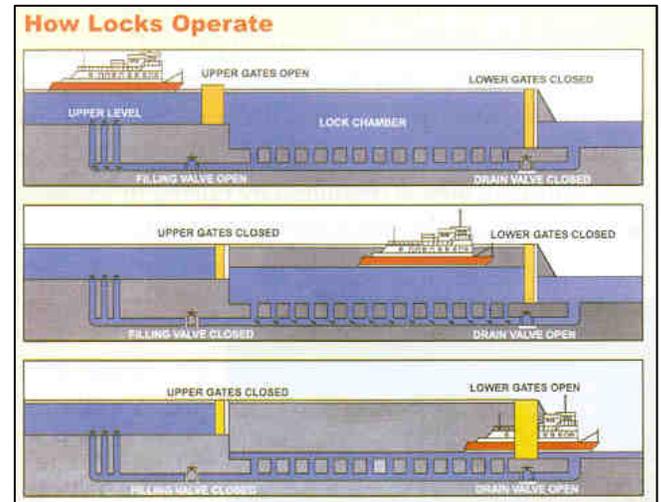
Dams by Dan Butcher, Robert Willis, and Kareem El-Naggar.¹

Before the introduction of locks and dams, the Inland River system (also known as the Western Rivers system) was often obstructed throughout its entire length by snags, rocks, gravel, and sandbars. The navigable width or depth of the river channels was also variable and unpredictable from season to season.

Locks and Dams

As early as the 1800s, the U.S. Army Corps of Engineers (USACE) was removing obstacles and building wing dams and training dikes to concentrate flow in the main channels in an attempt to improve the navigability of the rivers. Crews also constructed dams to provide adequate depths for navigation during all seasons. Each dam impounds a pool for navigation and the locks provide the means by which vessels are raised or lowered between pools.

Originally, most inland navigation projects featured a low-lift wicket dam that could be raised when necessary to maintain a pool for river traffic to pass. During high water, the wickets were lowered, allowing vessels to bypass the locks and pass through in an open river condition. Wicket dams remaining in operation are located at Locks and Dams 52 and 53 on the Ohio River near Paducah, Kentucky; and at Peoria and LaGrange Locks and Dams on the Illinois River. Locks and Dams 52 and 53 will be eliminated when the construction of Olmsted Locks and Dam is completed (currently scheduled for completion in 2012, depending on funding).



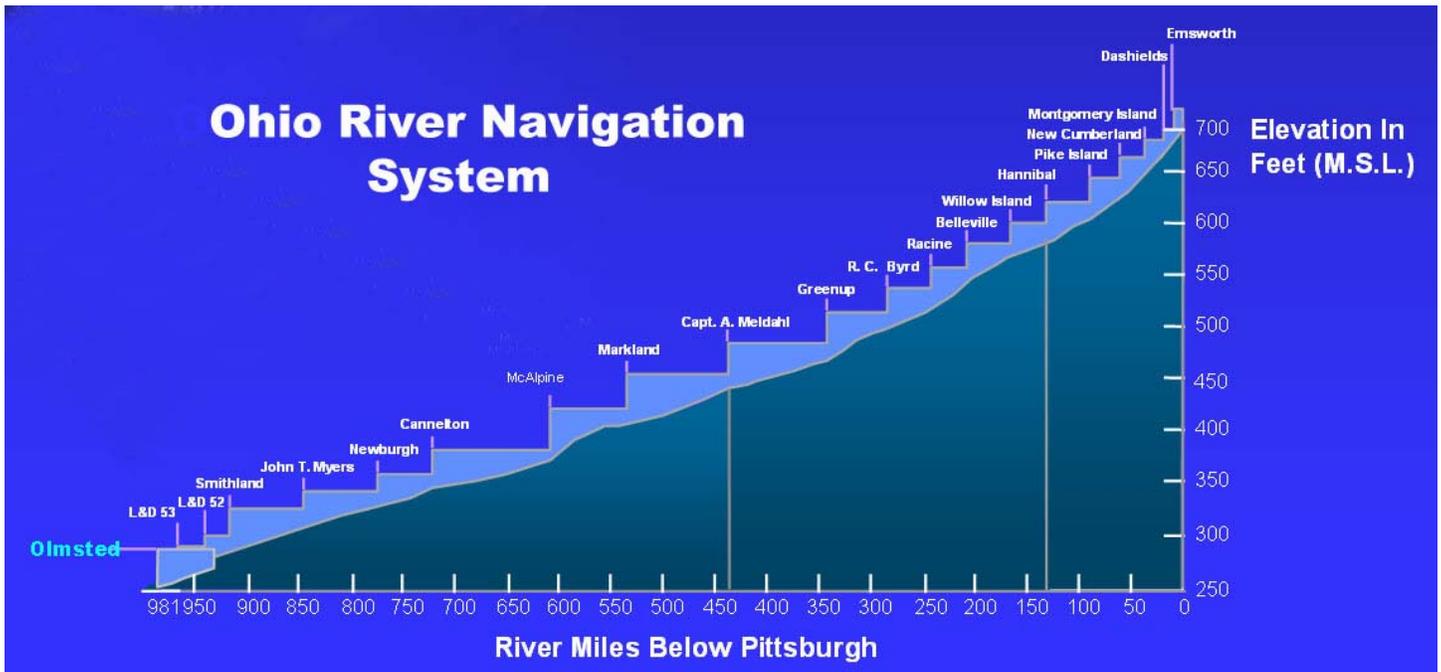
Basic operation of a lock.



Locks and wicket dam, with the wicket dam raised.

The Inland River System

In the eastern part of the United States, the Inland River system is primarily comprised of three major systems. The Lower Mississippi River system above Baton Rouge, Louisiana, includes the Arkansas and Red Rivers, and transported a total of 181 million tons of cargo in 2005. This stretch of the river is free flowing and not impounded for navigation (requires no navigation dams). USACE spends a tremendous amount of effort to maintain a navigable channel via miscellaneous structures, bank stabilization, and dredging.



The present profile of the Ohio River, with its high-lift dams.

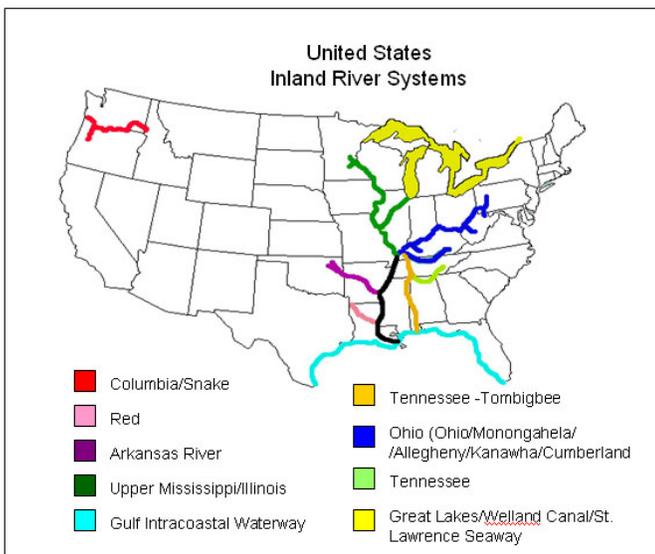
Cumberland, Big Sandy, and Green Rivers, and transported a total of 280 million tons in 2005.

Other important inland systems include the Columbia/Snake Rivers, the Tennessee/Tombigbee Waterway, the Gulf Intracoastal Waterway, and the McClellan-Kerr Navigation system.

Commerce Necessitates Upgrades

By the 1950s, growing commerce on the Inland River system had made low-lift wicket dams obsolete. Not only had traffic volume grown tremendously, but larger tows were in operation and had to be broken up to pass through the small chambers accompanying the old low-lift dams. Deterioration of the structures had also taken its toll, causing an increase in maintenance costs.

In Light of these factors, USACE decided to replace the obsolete system of wicket dams. The typical project in high-tonnage areas would consist of a 1,200-ft by 110-ft main lock chamber, and a 600-ft by 110-ft auxiliary changer. The dam would typically be a non-navigable structure with tainter gates. The simplicity, light weight, and low hoist capacity requirements of tainter gates make them economical and suitable choices for controlled spillways. With tainter gates, spillway flow is



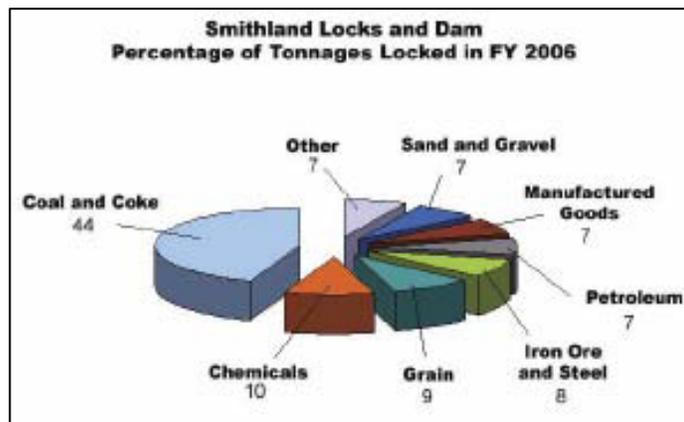
The Inland River navigation system.

The Upper Mississippi River (above river mile 185.5 near St. Louis, Missouri.) and the Ohio River systems are impounded by locks and dams that maintain pools with a minimum depth of 9 ft year-round. The Upper Mississippi River system includes the Illinois and Missouri Rivers, and transported a total of 117 million tons of cargo in 2005.

The Ohio River system includes the Monongahela, Allegheny, Kanawha, Tennessee,

regulated by raising or lowering the gate to adjust the discharge underneath.

Smithland, the last of the high-lift dams completed on the Ohio River in 1980, is the only project that currently features two chambers that are 1,200 ft in length. Construction is currently underway at McAlpine Lock and Dam in Louisville, Kentucky, which will add a second 1,200-ft chamber. The new Olmsted Locks and Dam, which will replace Locks and Dams 52 and 53, will also have dual 1,200-ft chambers. Other projects have been authorized to extend the length of the auxiliary 600-ft chambers to 1,200 ft at John T. Myers and Greenup Locks and Dams on the Ohio River.



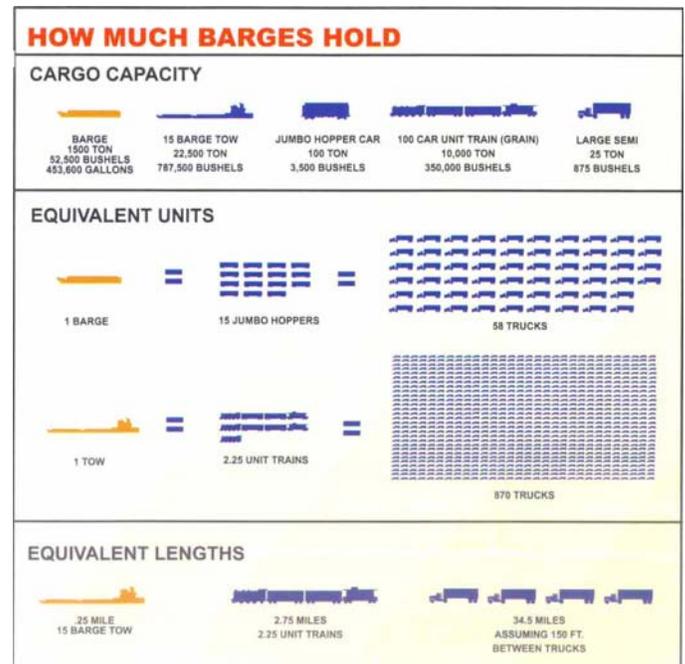
Types of cargo transported through Smithland Locks and Dam.

As a nation, our reliance on the Inland River system continues to grow. For example, in fiscal year 2006, Smithland Lock and Dam on the Ohio River locked over 81 million tons of cargo. Inland navigation provides a safe and environmentally friendly alternative to truck and train transportation, creating billions of dollars in annual savings. It also reduces highway congestion and pollution. A fully loaded barge is the equivalent of 15 rail cars or 58 trucks. A single tow consisting of 15 barges replaces as many as 870 trucks on our highways.

River Closures Have Severe Economic Impact

From 1965 to 2000, the total tonnage of cargo transported on the Ohio River alone rose from 103 million tons to more than 250 million tons.

Therefore, with the heavy traffic on the Inland River system, particularly on the Ohio and Mississippi Rivers, maintenance and unscheduled closures are becoming a major concern. Power plants on these rivers store only enough coal to supply a few days' power. In the event of a river shutdown, they must either find alternate and more expensive means of transportation, or redirect power from other supplies.



Barge capacity compared to other forms of transportation.

Factories that rely on raw materials supplied by the navigation industry could be forced to cease operations in the event of a prolonged river closure. As the locks and dams in the system have aged, the number of un-scheduled closures has climbed. The average age of the locks on the Mississippi and Ohio Rivers is 58 years.

Accidents have also taken their toll on the river projects. USACE must continue to be prepared to respond to these events. In January 2005, at Belleville Locks and Dam in West Virginia, a tow exiting the main chamber lost nine barges. These barges were carried downstream into the dam and became trapped in the dam wall structure, preventing it from operating for an entire month.



Floating heavy-lift crane Henry M. Shrev.

Maintenance and Repair

Maintenance of locks and dams comes in all sizes and complexities, ranging from greasing fittings to dewatering lock chambers for inspection or major repairs. Small jobs are routinely handled by personnel stationed at the locks and dams project sites.

Larger tasks are tackled by private sector contractors and USACE repair fleets, comprised of floating workshops that can accomplish anything from lifting heavy loads to fabricating replacement parts. For large jobs and tasks, which are given emergency priority, it is becoming more common for USACE Districts and Divisions to share personnel and resources in a regional effort. This allows repairs to be accomplished in a more efficient manner. Specialized equipment, such as the floating heavy-lift crane *Henry M. Shreve*, gives USACE options for safer, more efficient work.

As the locks and dams continue to age and wear, major components become less reliable or offer less

efficient service. The commercial navigation industry participates in the budgeting of major maintenance items by paying a tax on fuel consumed during inland waterways transportation. Revenues from the tax are deposited in the Inland Waterways Trust Fund (established through the U.S. Treasury Department). This fund is used to pay for half of the costs of new and replacement projects on the inland waterways system. The Water Resources Development Act of 1986 established the Inland Waterways Users Board to give commercial users a strong voice in deciding how these funds should be spent.

Each year it becomes more difficult to maintain the aging infrastructure of the inland waterways. The system has been extremely reliable, and the navigation industry and its customers depend on its continued reliability. USACE continues to seek out new techniques and streamline its processes to meet this need and better utilize available funds and resources.

BG Bruce A. Berwick, Commander, Great Lakes and Ohio River Division, introduced one such initiative in January 2006, when he signed a new maintenance standard. This program focuses available funding to the areas where it can do the most good for system reliability and efficiency by identifying projects that have high economic risks combined with high potential for unscheduled closures.

As the infrastructure continues to age, USACE will search for new ways to focus its efforts and provide the reliable and efficient service the navigation industry has come to expect. With the wide diversity of goods transported and the economic value the inland waterways represent to the nation, the challenges cannot be ignored.

¹ This article is reproduced by permission from *Proceedings of the Marine Safety & Security Council; The Coast Guard Journal of Safety & Security at Sea*, Winter 2007-08, pp. 45-48. Dan Butcher is Operations Manager for the Great Lakes and Ohio River Division (LRD), USACE; Robert Willis is former Chief of Operations, LRD; and Kareem El-Naggar is Assistant Chief of Operations, LRD.

New Marmet Lock Opens to Traffic

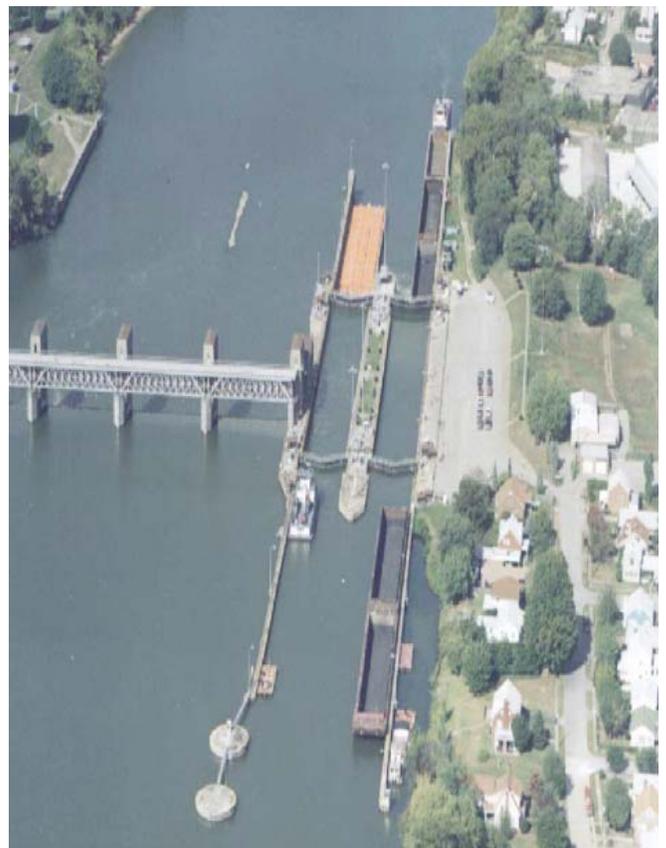
by Peggy Noel, Public Affairs Office, Huntington District, Corps of Engineers

Marmet Locks and Dam is located about 68 miles above the mouth of the Kanawha River at Marmet, West Virginia. The original twin locks were built in 1934, and measure 56 ft wide by 360 ft long. During the 1930s this was large enough to handle traffic of the Kanawha River.

Over the last few years barges have increased in size from the 175-ft-long standard barge to the massive 35-ft-wide by 195-ft-long Jumbo barge. These new barges can carry up to 2,000 tons, one and a half times the capacity of the standard barge of the 1930s. This larger barge, combined with the increase in traffic, created a bottleneck effect at the Marmet Locks and Dam. The average locking time of the 360-ft-long locks is about 4.5 hr per tow.

The U.S. Army Corps of Engineers was authorized by Congress (Water Resource Development Act of 1996) to build a larger lock adjacent to the existing locks to accommodate increased traffic at Marmet Locks and Dam. The project required the acquisition of 216 tracts of real estate and relocation of 252 residences and businesses. The contract for the new lock construction was awarded on May 28, 2002, to Kokosing/Frucon, LLC. Construction of the \$405.8 million dollar project began in July 2002.

The new 110-ft-wide by 800-ft-long lock chamber at Marmet Locks and Dam officially opened to traffic Tuesday, January 22, 2008, at 1:00 p.m. The *MV Lawson W. Hamilton, Jr.*, named in honor of the late Captain Lawson Hamilton, was the first full-size tow to officially lock through the new chamber. The new lock can accommodate up to 11 Jumbo barges during a single lock operation in about 45 min, significantly reducing the amount of time required to lock a tow.



Original twin 56-ft-wide by 360-ft-long chambers.



Construction zone for new 110-ft-wide by 800-ft-long lock chamber.

Barges could only lock through the old chambers one at a time, requiring crew members to use winches to separate the barges before locking through the chamber. Because lockages occur during all types of weather conditions, risk of injury was a constant threat and crew members faced many safety hazards and worked in dangerous conditions. The new lock eliminates the need to break the barges apart, and greatly improves safety for the shipping industry as well as Corps employees.



Construction of lock walls for new 110-ft-wide by 800-ft-long lock chamber.



Completed 110-ft-wide by 800-ft-long lock chamber (photograph courtesy Michael Keathley, Huntington District, Corps of Engineers).

“With a project of this magnitude, it takes years of hard work and patience to complete. Our perseverance has paid off,” said Senator Robert C. Byrd. “Improving the lock is essential to the growth of our economy. Local businesses that rely on our waterways to export their products will have better access to markets throughout the nation. This will, in turn, allow families to stay in West Virginia and further invest in our state. I am proud to have laid the groundwork for this project and fought for its funding.”



U.S. Senator Robert C. Byrd, West Virginia.

The new lock is essential to increasing the efficiency and safety of commerce on the Kanawha River. In 2007, more than 16 million tons of commodities locked through Marmet Locks, including 15 million tons of coal, which is used mainly for electric power generation. Marmet is the busiest navigation project in the nation in terms of

commercial lockages, recently averaging nearly 60 lockages per day.

David Smith, President, Huntington District Waterways Association, says a major bottleneck to the inland navigation system will cease with the opening of the new chamber at the Marmet Locks.

“This day has been eagerly anticipated for years by employees of the inland towing industry from entry level deckhands to towboat pilots, traffic managers, and corporate officers,” Smith said. “The true benefit of this state-of-the-art facility will be to the general public as the millions of tons of cargo moving through here by the most cost-effective and environmentally-friendly means of bulk transport - barge transportation - will ensure that their energy costs remain among the lowest in the nation.

As we welcome this new lock chamber into the system, we are reminded that Captain Charles Henry Stone, now 92, of Point Pleasant, West Virginia, stated at the opening of the new Winfield Locks a few years ago that we should not forget that the old 1930s lock chambers fulfilled their purpose - they opened the Kanawha Valley to commerce. It is the hope of the Huntington District Waterways Association that commerce continues to safely grow and expand through the use of this new chamber well into this 21st Century and beyond.”

According to Congresswoman Shelley Moore Capito, the new lock at Marmet is a significant benefit to the State of West Virginia.

“An operational Marmet Lock is great news for West Virginia,” said Congresswoman Shelley Moore Capito. “The new lock chamber is vital for promoting efficient commerce and transportation on the Kanawha River - particularly given the need to move coal to electric utility facilities. It is obvious that finalizing these important up-grades will save transit time and decrease transit cost. I applaud the work of everyone involved with the Marmet Lock upgrades, and am thankful that I could play a role in making this project happen.”



*U.S. Congresswoman
Shelley Moore Capito,
West Virginia.*

The Corps of Engineers had been conducting small lockages for the week prior to the official opening to test the new lock chamber. Beginning January 22, the new lock chamber became the primary lock for navigation. The old lock chambers will be used as back up locks during scheduled outages for routine maintenance.

While the new lock will be operational to river traffic, there is still additional work to be done before the project is officially completed. Some of the work remaining includes demolition of the old approach walls and construction of a new upstream guardwall, final grading, replanting of the construction site, and completion of recreation areas to include fisherman access. The remaining lock replacement work is scheduled for completion in 2009.

The official dedication ceremony will be scheduled later in 2008. Senator Robert C. Byrd will serve as keynote speaker.

More information regarding Marmet Locks and Dam can be obtained from Michael Keathley, 304-399-5864, Michael.Keathley@usace.army.mil; or from the Public Affairs Office, 304-399-5551, Peggy.A.Noel@usace.army.mil, Huntington District, U.S. Army Corps of Engineers.

John Day Lock Upstream Gate Damaged by Barge Tow

by Diana Fredlund, Public Affairs Office, U.S. Army Corps of Engineers, Portland District

The U.S. Army Corps of Engineers' John Day Lock and Dam is located on the Columbia River about 216 miles from the mouth of the River and about 28 miles east of The Dalles, Oregon, just west of the John Day River mouth. The lock is 675 ft long and 86 ft wide. It lifts and lowers boats and barges about 110 ft in elevation. This is the highest single-lift lock in the United States. John Day is one of an 8-lock system along the Columbia and Snake Rivers. More than 10 million tons of commodities a year move through this system, with the 40-year-old John Day located at a strategic point. This river system is the largest export gateway in the United States for wheat and barley.



John Day Lock and Dam (and hydroelectric powerhouse), Columbia River.

At about 11 p.m. Thursday, February 28, 2008, a barge tow operated by Tidewater Barge Lines, Vancouver, Washington, came into contact with the upstream navigation lock gate, damaging it while the lock chamber was filling. The tow, with one full diesel barge and two empty grain barges, collided with the upstream gate. The contact lifted the gate out of its tracks, making it inoperable. The incident immediately halted all river traffic through the lock. A preliminary review found the collision did not cause any structural damage to the dam or to the lock itself.



John Day navigation lock upstream gate before impact.



Right side of John Day Lock upstream gate after impact (photograph by Portland District).

“We are collaborating with all parties to assess the situation and begin repair work as soon as possible,” said Dennis McVicker, president and CEO of Tidewater, in a press release. “Incidents like this are extremely rare. We want to review it very carefully to ensure that it is not repeated.”

The John Day Lock was already scheduled to be closed to river traffic from 6 a.m. to noon on February 28, through March 1, to prepare the downstream lift gate machinery for repairs during a two-week closure. The Corps annually closes the navigation locks at Bonneville, The Dalles, John Day, and McNary on the Columbia River, as well as the four locks on the lower Snake River, for

inspection, maintenance, and repairs. This year the closure was scheduled between March 8 and March 22.



Left side of John Day Lock upstream gate after impact (photograph by Portland District).

With more than 10 million tons of cargo traveling on the Columbia River, the navigation locks on the Columbia River are critically important to the Pacific Northwest. If the John Day Dam were to close completely for any length of time, river traffic would be unable to pass between Portland, eastern Washington and Oregon, and western Idaho. This made removing and repairing the damaged gate a top priority.

The Corps successfully removed the damaged lock gate on Sunday, March 2, and re-opened the lock to river traffic under restricted operations by 6 p.m. that day. Using two cranes, the Corps lifted the 125-ton upper gate out of its housing and placed it on two barges. The damaged gate remained moored at the John Day project until engineers determined if it could be repaired or should be replaced.

A remote operating vehicle equipped with cameras was lowered into the lock chamber to assess the underwater situation before the Corps cleared the towboat *Sundial* to move its barges upstream of the lock under its own power. “We wanted to be certain there was no debris or other hazards once the gate was removed,” said Dwane Watsek, Portland District Operations Chief. “No

dangers were found, and the *Sundial* left the lock chamber just after 3 p.m. on March 2.



Damaged upstream lock gate at John Day Lock being removed (photograph by Portland District).

Corps crews prepared a temporary floating bulkhead that acted as a gate, allowing the lock to re-open. The bulkhead was floated into place by a Corps boat. After the temporary gate was in place, traffic was able to pass through. Locking through was slower under the restricted operations. “During normal operations, it took about 20 minutes to lock through, but the temporary gate takes about 90 minutes because the gate has to be moved manually each time,” Watsek added. Nevertheless, Corps officials were relieved the river was re-opened to traffic.

“We are very pleased with how this operation was handled, and the professionalism of the crane crews and our employees,” Watsek said. “The goal was to safely remove the gate and place it on the barges. That happened and now we can focus on getting the lock gate repaired.”

Kim Puzey, general manager of the Port of Umatilla, Oregon, and vice president of the Pacific Northwest Waterways Association, said the Corps’ response to the incident was typical of their professionalism and responsibility. “It is for this reason that members of the navigation community consistently lobby Congress for sufficient funds so

that the Corps is prepared to do proper maintenance for this critical infrastructure,” Puzey said.



Tidewater Barge Lines towboat “Sundial” moving past damaged lock gate (photograph by Portland District).

The previously scheduled maintenance of the downstream lift gate machinery at John Day was completed and the lock system was back in operation on March 22, 6 hours earlier than originally scheduled at The Dalles and John Day.

A tug has been contracted by the Corps to place and remove the floating bulkhead until the upstream gate can be repaired. The bulkhead is moved into place by the tug, and sunk to the proper depth to create a seal before filling the chamber. The process is reversed when tows are locking downstream. Repairs to the gate are expected to be complete by August. John Day Lock will operate 24/7 with limitations during this time.

Construction on the John Day Lock and Dam began in 1958 and was completed in 1971. The navigation lock has faced multiple mechanical and structural problems for many years, including the spillway gates, the spillway, the north embankment and the non-overflow monolith. It was discovered that a layer of soft rock below the lock allows the 130-ft-high monoliths to rock slightly as the chamber is filled and emptied. A planned dam safety/major rehabilitation study is underway and should be completed by 2011. The study will

determine whether repairs are eligible for major rehab funding.

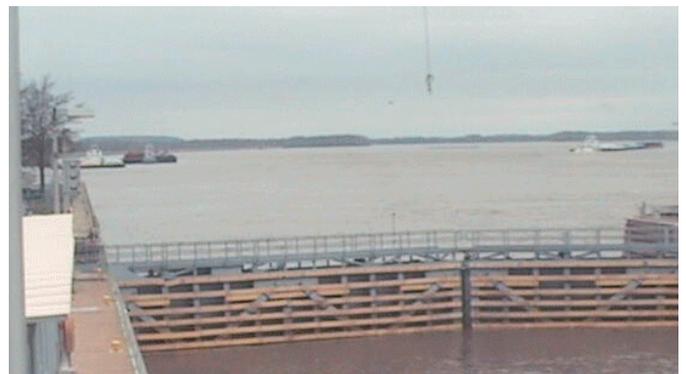
Lock 25 on Mississippi River Reopens after Emergency Repairs

Public Affairs Office, St. Louis District, U.S. Army Corps of Engineers

Commercial traffic resumed through Lock 25 at Winfield, Missouri, at 12:45 a.m., April 1, 2008, when the U.S. Army Corp of Engineers completed emergency repairs on the Lock. Work was completed a day earlier than previously announced. All navigation – commercial and recreational – had to be suspended for 5 days during the work.



Lock and Dam 25, Mississippi River near Winfield, Missouri.



Barge tows waiting to pass through Lock 25 on the Mississippi River.

Scores of barges and boats had been backed up on the River because of the closure. Corps spokesman Alan Dooley said nearly 200 loaded barges, plus pleasure boats and other vessels, were waiting to pass as of Monday. Officials said the barges were not all sitting on the River as though there is a traffic jam. Some were held miles away in “fleeting areas”, spots on the River where barges can anchor and be tied off.

The first vessel to lock through was the *Wayne P. LaGrange*, a 6,200 horsepower tow boat operated by the American Commercial Barge Lines. The first tow to pass was the 6,000 horsepower *Bernard G*, an Alter Barge Line boat pushing 15 commodity barges with four loaded barges of coal and fertilizer and eleven empty barges.

Work to repair the down stream lock gate was carried out by a combined team of experts from the U.S. Army Corps of Engineers Districts in Rock Island, Illinois, and St. Louis, Missouri. The same team recently performed similar repairs at Lock 24 at Clarksville, Missouri, and last summer worked with crews from St. Paul, Memphis, Vicksburg, and Louisville Districts on a major project at the Mel Price Locks and Dam near Alton, Illinois.

In a plan coordinated with the navigation industry and the U.S. Coast Guard, the Lock was originally scheduled for emergency closure Friday morning, March 28. But it was closed Wednesday, March 26, at 10:42 p.m. when engineers who were monitoring the Lock’s condition detected further deterioration to lock gate’s hinge and movement mechanism.

These critical parts suspend and allow opening and closing of the two massive steel gate leafs, or doors. Each leaf is some 35-ft high and 61-ft long, and weighs 130 tons. The lock has two gate comprised of two gate leafs each. One pair is at the upstream end, with the other at the downstream end. The damage occurred at the downstream end.

Work proceeded around the clock, even during torrential rain that hammered the lock’s area at least twice during the work.

Lock 25 was placed in service in 1939, and is well beyond its 50-year design life. The Lock last year passed more than 30 million tons of commodity cargos north- and south-bound. It is one of seven similar locks on the Mississippi and Illinois Rivers that were authorized for expansion with an added 1,200-ft-long chamber in the Water Resources development Act of 2007.

Ed Henleben, Chairman of the River Industry Action Committee, said “It is estimated that when the River shuts down to traffic, it costs \$30,000 to \$40,000 a day per barge tow, which can include up to 15 barges. But we have no real way of putting our finger on the real cost to the industry. Costs include fuel, insurance, crew wages, and employee benefits.”

Lock expansion is slated to cost \$ 1.95 billion, and is paired with an ecosystem restoration program tagged at \$ 1.72 billion. The work is in a combined plan called the Navigation Ecosystem Sustainability Program (NESP). This program is designed to speed river navigation by relieving bottlenecks and, to provide substantial environmental benefits to the Mississippi and Illinois River basins.

Pittsburgh District 2008 Scheduled Lock Maintenance

The U.S. Army Corps of Engineers, Pittsburgh District, has announced planned schedule of lock and dam (L&D) maintenance and contract work that will result in lock closures and/or delays to navigation traffic during 2008 along the Monongahela, Allegheny, and Ohio Rivers. This maintenance schedule was developed in cooperation with the Waterways Association of Pittsburgh, and is subject to change due to emergency or unusual conditions, or funding issues in FY08. A supplemental notice to navigation will be issued approximately 1 month prior to the start of each job.



Hildebrand Lock and Dam, Monongahela River.

Hildebrand L&D is located at river mile 108.0, about 6 miles southwest of the city of Morgantown, West Virginia, and near Hildebrand, West Virginia, and Round Bottom, West Virginia. Work here from March 31, through April 25, 2008, will consist of dewatering the single 84 ft by 600 ft lock chamber, and renovating the lock gates and seals. The single chamber will be closed. No river traffic will be able to pass through the lock.



Lock and Dam 4, Allegheny River.

L&D 4 is a single chamber lock located at Natrona, Pennsylvania. Work here from May 27, through June 13, 2008, will renovate the Filling Valves No. 1 and No. 5, and Emptying Valves No. 1 and No. 4. The single 56-ft-wide by 360-ft-long chamber will be open, but with chamber width restricted to 52 ft. There will be intermittent delays to navigation.



Lock and Dam 2, Allegheny River.

L&D 2 is located across from Sharpsburg, Aspinwall, and Etna, Pennsylvania, downstream from the Highland Park Bridge. L&D 2 consists of a single lock chamber. Work here from May 6-23, 2008, will renovate the 8 ft by 10 ft land wall filling valve, and will renovate the operating machinery.



Braddock Locks and Dam, Monongahela River.

Braddock L&D is located at Braddock, Pennsylvania. Work here from June 24 through July 8, 2008, will consist of dewatering the 110 ft by 720 ft land chamber, tensioning the lock gates, repairing the miter and quoin seals, and repairing the land wall emptying valve. The large 110 ft by

720 ft chamber will be closed. The small 56 ft by 360 ft chamber will be open. There will be major delays to navigation.

Work at Braddock L&D from July 9-16, 2008, will replace the middle wall filling valve, and repair the valve operating machinery. The large 110 ft by 720 ft chamber will be open. The small 56 ft by 360 ft chamber will be closed. There will be minor delays to navigation.



New Cumberland Locks and Dam, Ohio River.

New Cumberland L&D is located on the right descending bank of the Ohio River, just off Ohio State Route 7 at the small town of Stratton, Ohio. Across the river and 2 miles downstream lies New Cumberland, West Virginia, the original planned site of the L&D and hence its namesake. Work here from August 5-22, 2008, will consist of renovating the middle wall emptying valve and operating machinery. The large 110 ft by 1,200 ft chamber will be open. The small 110 ft by 600 ft chamber will be closed. There will be minor delays to navigation.



Opekiska Lock and Dam, Monongahela River.

Opekiska L&D is located at river mile 115.4, about 7 miles northeast of the city of Fairmont, West Virginia. Work here from October 7-31, 2008, will renovate the river wall filling and emptying valves. The single 84 ft by 600 ft chamber will be open. There will be minor delays to navigation.



Dashields Locks and Dam, Ohio River.

Dashields L&D lies on the left descending bank a few miles upriver from Aliquippa, Pennsylvania. The project is off Pennsylvania State Route 51 near the small town of Glenwillard, and across the river from the nearby residential communities of Edgeworth and Sewickley, all in western Pennsylvania about 20 northwest of Pittsburgh. Work here from November 10-21, 2008, will repair the miter gate operating machinery in the large 110-ft by 600-ft chamber. This large chamber will be open. The small 56-ft by 360-ft chamber will be

closed. There will be intermittent delays to navigation.

The 9th Annual Corps of Engineers Coastal Inlets Workshop: Estuarine Design and Research Needs

by Julie Dean Rosati

The 9th Annual U.S. Army Engineer Research and Development Center (ERDC) Coastal Inlets Research Program (CIRP) Technology Transfer Workshop was held in Sarasota, Florida, from January 28-30, 2008. The workshop was conducted in conjunction with the System-Wide Water Resources Program (SWWRP), and was convened in a collaborative and interactive format with numerous panel sessions and discussion periods. More than 50 participants from seven Corps District offices, other Corps laboratories, the National Oceanographic Atmospheric Agency, state agencies, private industry, and academia attended. The workshop was organized by the ERDC and New York District (NAN), U.S. Army Corps of Engineers. This article summarizes the main points from the presentations and discussions at the workshop.



Lynn Bocamazo, NAN, leading a discussion at the 9th Annual CIRP Technology Transfer workshop.

An Overview of Wetlands

Wetlands, once undesirable to developed regions, are now recognized for the many functions and values they provide the environment and society as a whole. **Wetland functions** are the (a) physical, (b) chemical, and (c) biological processes that occur in wetlands. **Wetland values** are the benefits society accrues from these

functions. Examples of wetland values include (a) attenuation of wave energy, (b) reduction in storm surge, (c) maintaining biogeochemical cycles, and (d) providing nursery grounds for juvenile species.

Both natural and created wetland and marsh development depend on a combination of (a) an appropriate substrate, (b) sediment supply, and (c) tidal action. Estuary basins can evolve over time by adding to the substrate (e.g., tidal flats, delta plains). Rates of wetland accretion vary over time, and must keep pace with sea level to survive.

Most coastal wetlands are under stress from (a) sea level rise, (b) loss of sediment sources, and (c) pollution. Areas of the world that are most threatened by rising sea level are deltaic regions. These regions were also some of the first populated because of their abundant resources. Future viability of estuaries and marshes can be limited in these deltas because of human degradation and infrastructure that hinders migration of the wetlands inland as local sea level increases in the future.

Long-term marsh viability is determined by how rapid relative sea level rise is in the region of concern, and whether the accretion of the marsh vertically can maintain pace with this rate of inundation. The vertical accretion rate of marshes is complicated because of other factors such as (a) the sediment supplied to the marsh, (b) whether the marsh is flood- or ebb-dominated, (c) local tidal range (and inundation), (d) plant growth rates and the rate of organic sediment formation, and (e) anthropogenic factors such as nutrient loading and encroachment on areas for marsh migration.

If all other factors are typical (or not of concern), it appears that the present rate of eustatic sea level rise (about 3 mm per year) is approximately the maximum rate for long-term marsh viability. On a year-to-year basis, marsh accretion rates can be on the order of 1 to 5 mm per year.



Well-functioning wetland system.

Created Wetlands

If a marsh is designed properly, and if the topography and substrate are appropriate for the desired species and forcing processes at the site, the site will eventually become vegetated. However, desired species may take longer. It is essential to identify the goal of the project first (not always straightforward), and then build the wetland to the proper elevation such that inundation and flushing occur as required by the design goals. Bottom land hardwood takes 50 to 75 years to develop. It is difficult to get resource agencies to agree on such long-term objectives. Wetlands are dynamic systems. One approach to vegetating a marsh is to plant the upper portion of the inner tidal zone such that initial erosion is reduced, and let the remainder of the marsh vegetate naturally.

Estuaries are filling with sediment. “No net loss” of marsh area may not be a reasonable goal in the face of relative sea level rise. In urban areas, it is necessary to “engineer” to keep the marsh. Marshes behind barrier islands can be built via overwash deposits. Marsh systems may be too costly (or impossible) to rehabilitate once degraded, depending on how restoration proceeds.

It is much more efficient to maintain wetlands than to rebuild or restore. Conserve that which is important; preserve that which is rare. Plan for

50 years in the future and save marshes identified as viable in 50 years. Abandon marshes that are rapidly eroding.

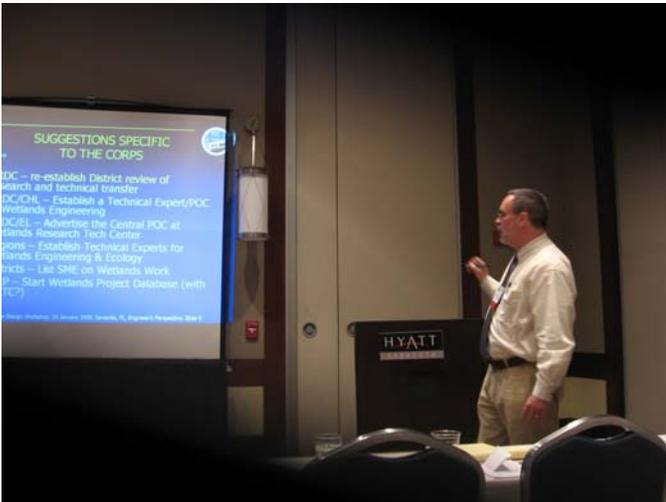
Restoration success includes habitat diversity. Monitoring completed projects is necessary to determine whether the original goals were met, which indicates that the restoration was successful. Monitoring can also identify what should be done differently in the future to improve site design. A marsh must fit into the regional landscape. The health and diversity of plants that populate a finished project site can be used as a proxy for whether the site has achieved the desired elevation, hydrology, and habitat.

The primary element for a successful wetland project is to get the hydrodynamics (duration of inundation, flow speed through the marsh, and flushing) correct for the desired vegetation and project goals. Do not fight Mother Nature with unrealistic ecological engineering. Achieve the basic conditions, and then let nature do the work (i.e., let other channels be created naturally).

Develop success criteria, and define realistic expectations and timelines. It can take from 10 to 15 years for a created wetland to fully develop. It is important to document design goals, agreements with partners, and plans because partners at resource agencies may change prior to project construction, monitoring, and determination of “success.” Make success criteria as general as possible, and develop a robust monitoring plan to measure this success.

Research Needs for Wetland Restoration, Conservation, and Preservation

Design guidelines for organic and mineral matter accretion are required. Better methods are needed to determine whether the wetland is ebb- or flood-dominated. Design guidance is needed to construct wetlands for self-sustainability. It is essential to share survey methods for habitat mapping and elevation determination.



Craig Conner, U.S. Army Corps of Engineers San Francisco District, discussing recommendations for wetland coordination and research.

Remote sensing data should be adapted for wetland characterization and quantification. Sea level rise must be incorporated into any wetland or marsh design and/or restoration. There should be a complete characterization of all forcing factors. Construction methods should be well defined, and there should be complete documentation of lessons learned.



Workshop participants discuss lessons learned and future action items.

There is a need for enhanced modeling capabilities, particularly for muddy coasts, that include cross-shore, alongshore, and morphologic change. Let nature complete the design of the site

(planting can be very expensive) even if it takes a long time. Present the expectation and uncertainty associated with this method. Finally, adaptive management of wetland creation, restoration, and enhancement is encouraged. This approach uses monitoring data to determine whether the project is performing as designed; if not, alterations are made to the project as needed. Workshop participants noted that it is difficult for the Corps of Engineers to rapidly respond to adaptive needs because of funding limitations and logistics.



Julie Dean Rosati was the workshop coordinator, and is Principle Investigator for the Inlet Channels and Estuaries work unit of the Coastal Inlets Research Program being conducted by the U.S. Army Engineer Research and Development Center, Vicksburg, Mississippi. Julie is stationed at the U.S. Army Corps of Engineers District Office in Mobile, Alabama.

Encourage New PIANC Members!

Please continue to encourage your friends and colleagues to join PIANC USA so they can start to receive all the benefits that PIANC has to offer! Refer them to www.pianc.us for a membership application.

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- **Technical Reports** in the field of inland maritime and recreational navigation, including environmental issues.

- Quarterly electronic **PIANC USA Newsletter, Bulletin**, with news and articles related to navigation and PIANC news in the United States.
- PIANC **International Electronic Newsletter, Sailing Ahead**, with international news updates for the navigation community.
- Complimentary or reduced registrations to **Conferences** such as the PIANC Annual General Assembly and World Congress, PIANC USA Annual Meeting, Ports Conference, SMART RIVERS, PIANC USA-COPEDEC Conference on Coastal and Port Engineering in countries in transition, etc.
- PIANC **Membership Directory**, an international network of like-minded professionals.
- Opportunity to develop “cutting edge” advancements in your profession by serving on **Technical International Working Groups**.
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- **Young Professional** activities for students and professionals under age 40.
- **International Conference on Safety and Operations in Canals and Waterways.** September 15-16, Glasgow, Scotland, The United Kingdom.
- **World Canals Conference 2008.** September 15-17, Kingston, Ontario, Canada.
- **National Waterways Conference.** November 5-7, New Orleans, Louisiana.
- **Gulf Coast Hurricane Preparedness, Response, Recovery and Rebuilding.** November 11-14, Mobile, Alabama.
- **Annual Water Resources Conference.** November 17-20, New Orleans, Louisiana.
- **Atlantic Intracoastal Waterway Conference.** November 19-21, St. Augustine, Florida.

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- Individual member: \$120
- Student member: \$40
- Small corporate member: \$600
- Large corporate member: \$1,150

PIANC USA dues enables us to continue to meet our international commitment as well as to expand and re-energize our current programs and fund new initiatives. At PIANC USA, we are dedicated to being good stewards of our resources and we stretch every penny to make sure that your investment in our organization is being put to the best use. We thank you for your continued membership and support, and we look forward to working with you in 2008.

About PIANC

What is PIANC? The International Navigation Association (PIANC) is a worldwide organization of individuals, corporations, and national governments. Founded in 1885 in Brussels, Belgium, it is concerned with maritime ports and inland waterways. The Association promotes contact and advances and disseminates information

Upcoming Related Conferences

2008

- **Coastal Zone Canada.** May 25-29, Vancouver, British Columbia, Canada.
- **Western Dredging Association (WEDA) XXVIII, and Texas A&M University 39th Annual Dredging Seminar.** June 8-11, St. Louis, Missouri.
- **31st International Conference on Coastal Engineering.** August 31 - September 5, Hamburg, Germany.

of a technical, economic, and environmental nature between people worldwide in order to efficiently manage, develop, sustain, and enhance inland, coastal and ocean waterways, ports and harbors, and their infrastructure, in a changing environment.

Where is PIANC? The international headquarters is located in Brussels, Belgium, at facilities provided by the Belgian Government. The headquarters of the United States Section is located in the Washington, DC area, within facilities provided by the U.S. Army Corps of Engineers.

International Interaction. The Annual General Assembly operates through a Council, which directs the working level permanent technical committees, international study commissions, and working groups.

Working Groups. Technical working groups are composed of participants from member countries who have interest in various subjects being studied. The groups gather, analyze, and consolidate state-of-the-art material from each country. The resulting reports are published and sent to each PIANC member. Working group reports and the International Bulletin are sent to each member from Brussels.

Every 4 years an International Congress, open to all members and other registrants, is held for the presentation and discussion of papers on subjects pertaining to waterways and maritime navigation.

PIANC also participates in technical activities with other organizations to study navigation problems and joins with them to present symposia on related subjects.

In the USA. The United States became a member of PIANC by Act of Congress in 1902. The Chairman of PIANC USA is the Assistant Secretary of the Army (Civil Works). The Director of Civil Works for the U.S. Army Corps of Engineers serves as President. A National Commission of 11 individuals, which represent both private industry and the Federal Government, manages PIANC USA. PIANC USA has two

standing and four technical committees, which promote the flow of information between members and facilitate cooperation with other national organizations. The committees are Membership, Publications, Environment, Inland Navigation, Maritime Navigation, and Ports and Recreation Navigation.

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