The following is just one excerpt of many interesting and factual articles that have been researched and published. It may be found at http://www.sewerhistory.org/chronos/convey.htm.

**Manholes:** In the very early collection systems (especially for “separate” sanitary sewage systems), only lampholes were installed. It was soon learned that the lampholes were good for seeing (with a source of light) if the sewer in the main was indeed flowing, but they were almost useless as a maintenance access point. Consequently, the placement of manholes in gravity sewer systems soon became common (and essential).

The main purpose of manholes was (and is) to give admittance to the sewers for inspection and cleaning. To do so, it is imperative that they be big enough to allow people of average size to enter into them and to work.

A second purpose of manholes was to serve as points of ventilation for the gravity sewers. It was recognized early on that sewers need to “breathe,” both in and out. Vented manhole covers could facilitate that need. Also, it was understood early that it was better to vent the system through the manhole covers than (as an alternative scenario) to vent the sewers through the plumbing systems of the connected homes. (Interior plumbing systems in those days didn’t have water-filled traps to keep odors out of the rooms of the connected buildings.)

In the early larger sewers in Europe, the manholes were built off to the side of the sewer (proper) and connected to the sewer via an interconnecting underground passage. This approach was thought to be better for accessing the sewer and for avoiding having manhole rim/cover assemblies in the streets (proper). The drawback realized was that this approach was very expensive, and the passageway was a constant collector of filth/debris.

The size of the manhole opening was chosen early on to be 24” in diameter—the exact reason remains unknown—with the diameter of the structure increasing to 4’ to 5’ at the sewer, thus allowing sufficient room for the sewer maintenance people to do their work. Early on, descent down into a manhole was made by use of a ladder or a rope; however, it soon became common to build steps into the manhole structure, sometimes via protruding bricks or stones, or wrought-iron/cast-iron steps (wrought iron being better).

The walls of the early manholes were made of bricks mortared together (often with a coating of plastic on the outside). Soon concrete also came to be used for the construction of the risers.

When the rim and cover assemblies (a.k.a. “manhole heads”) of manholes were placed in unpaved areas, it was soon learned that a lot of sand/dirt would get into the sewer through the vent holes in the covers. Early on, a bucket was designed for suspension under the cover to catch the sand/dirt; it was sized smaller than the overall diameter of the casting assembly (nominally, 24” in diameter) so as to allow air to pass by the bucket—thus allowing the sewer to continue to breathe.

**Manholes covers:** Covers started off as slabs of stone, maybe pieces of wood—which they remained from 3500 BC through the 1750s–1850s CE.

(continued on page 2)
America’s Forested Wetlands: From Wasteland to Valued Resource
Jeffrey K. Stine
Durham: Forest History Society, 2008

Review by Jason Theriot, Ph.D. Student
Department of History, University of Houston, Texas

Wetlands have played an important and often controversial role in American history. Jeffrey K. Stine’s colorful and informative 81-page booklet, America’s Forested Wetlands: From Wasteland to Valued Resource, provides an introduction into the history of this nation’s wetlands, how they have been used and misused, and how different interests and viewpoints on wetlands have framed certain public policies, conservation efforts, natural resource management practices, and commercial developments over the last century. Stine’s book underscores the challenges people and policy makers faced when dealing with this important issue, such as private property rights and the role of regulatory agencies. Even though some of these issues have been resolved in the recent past, Stine recognizes that the contentious debates over wetland issues will likely continue in the future. Therefore, it is incumbent for policy makers and interested parties to understand the history of wetlands to help “avoid the pitfalls of the past” (p. 81).

Society’s attitudes and perceived values of wetlands evolved over time. Since the pre-colonial period, wetlands have been used for agricultural development and resource extraction. For much of the nineteenth and early twentieth centuries, humans avoided certain swampy areas because of the belief that they harbored diseases. In the last half century, scientists and ecologists helped to shift these perceptions by identifying the unique characteristics of America’s wetlands and the important services they provide to society, such as water quality and supply, storm protection, biodiversity, wildlife habitat, and recreation. America’s Forested Wetlands chronicles
the ways in which humans exploited and altered these natural landscapes, and how degradation gradually, and often forcefully through political means, led to wetland regulation and conservation.

The book is composed of short chapters that focus on time periods that impacted the physical wetlands and the politics surrounding the wetland debates. It begins with a chronology of wetland history in the United States from the early European settlers, who viewed these areas as “wastelands,” to the “no net loss” wetland policies the 1990s. The introduction identifies the origin of the term “wetlands,” the services they provide to the public, and an interesting list of more than 200 words and phrases used to characterize these unique landscapes, such as “bogs,” “swamps,” “hog wallows,” and “flotants.”

The opening chapters describe how the use and perceptions of wetlands changed as the nation’s population expanded, cities grew, and fertile land became a premium. Developers began draining wetlands, especially those close to urban areas, for agricultural needs. Forested wetlands, such as the southern wooded swamps and bottomland hardwood forests, provided a lucrative business for lumber interests and building materials for commercial and residential development. Technological innovations of the late nineteenth and early twentieth centuries, including pullboats and narrow gauge railroads, allowed lumber companies to extract more efficiently the timber resources in the swamps, which quickly depleted the old-growth timber resources.

By the 1930s, some perspectives on wetlands began to change. When waterfowl numbers dramatically declined, conservationists and duck hunters campaigned for the preservation of wetlands, the natural habitat for migratory birds. As wetland science matured, ecologists began to identify the multiple services these crucial areas provide, not just for wildlife, but for the public good in general. By mid-century, government surveys revealed that the nation’s wetlands were disappearing at an alarming rate. Natural resource economists and scientists informed policy makers about the replacement costs, such as expensive water treatment systems. Stine argues that the federal government did not react effectively to shrinking wetland until it became an “economic problem” (p. 38). From the 1950s to the 1970s, nine million acres of America’s wetlands disappeared. Over time the general public became educated about the conditions and functions of wetlands and public opinions shifted more toward conservation and protection. Wetland advocates supported by the environmental movement urged the federal government to take action.

The later chapters of the book deal more comprehensively with federal wetland regulation created in the 1970s and how public and private interests, including the courts, interpreted these regulations. The Water Pollution Control Act amendments of 1972, Section 404, became the cornerstone for federal wetland protection. With this act, Congress charged the U.S. Army Corps of Engineers with the task of regulating the dredging and filling in of the nation’s waters. The major problem with wetland regulation, Stine notes, was that seventy-five percent of America’s wetlands were privately owned. Debates between the Corps, other federal and state agencies, the courts, environmental groups, and private interests over the interpretation of Section 404 persisted for the next three decades and continues to be a lively debate today. Regardless of what the future holds for the nation’s wetlands, the combination of regulations, changing public perception, better resources management, and cooperative conservation efforts among land owners, industry, and environmental groups have gradually reduced the annual loss of wetland acreage in this country.

The book is designed to be used as a primer for general educational purposes, so it lacks the depth, details, and citations of a traditional scholarly work. However, what it lacks in analytical development and primary sources it makes up for with clarity and brevity. Jeffrey K. Stine’s America’s Forested Wetlands is a useful summary on the complex political, economic, and environmental history of wetlands in the United States. It makes for an excellent condensed companion piece to other historical works on wetlands, such as Ann Vileisis, Discovering the Unknown Landscape: A History of America’s Wetlands (1997) and David McCally, The Everglades: An Environmental History (1999).
Remembering Jim Martin

The July 9th news that James L. Martin (APWA President in 1982–83) had died of natural causes at his home in Fresno, California, left many people in public works and throughout APWA struggling to put words to their feelings.

Although the 81-year-old retired his position as director of public works in Fresno more than 20 years ago, “retired” could never describe Jim Martin. Out of an unparalleled scope of interests and a passion for public works, Jim served as secretary of the Central California Chapter for more than a decade before his death and worked on countless committees and task forces on a national level. He also was instrumental in developing not only APWA’s emergency management program, but also the original public works component of FEMA training courses. Jim’s life made a difference to others, to the public works profession, and to this association.

“Jim was an icon in the public works profession, a tireless volunteer for APWA during his career and, in retirement, was one of a few that was awarded Honorary Membership in both APWA and ASCE and, by all accounts was a ‘one of a kind’ person,” said APWA Executive Director Peter King.

Jim produced a prodigious body of articles and nine books published by APWA. Most notably, he was the author of two editions of the Red Book, the industry standard on quality-based selection of engineers, architects and consultants. His work also is the basis for the current, third edition of the book.

APWA Executive Director Emeritus Robert D. Bugher expressed his “great admiration and respect for Jim” for his many leadership qualities. He also suggested that the dissemination of Jim’s inspiring oral history, which was published by APWA in 2006, would “help to attract some of the high-quality talent to this profession that will assure its success many years to come.”

Besides being an engineer, Jim’s passion for history caused him to work steadfastly through the Public Works Historical Society (PWHS) to forge a useful partnership between practitioners and historians. Todd Shallat, professor of history at Boise State University, said of his former master’s advisor onsite, Jim “taught me professionalism. To be a professional, I learned, was to cherish a deeply historical sense of mission and purpose. Jim saw historical awareness as a pillar of his own professionalism... and engineers as stewards of municipal progress...He remains a giant in my life.”

Those sentiments were echoed by Jim’s friend, Marty Melosi, renowned public works scholar and historian at the University of Houston. “Through our work with PWHS, we were able to bridge the gap between public works professional and public works historian. We found so much in common in our love for history and our fascination with the world of public works, that our annual meetings of the PWHS board were much-anticipated events. I’ll never forget Jim’s thorough professionalism, his tenacious efforts to preserve the historical record, and his infectious laugh. I learned so much from him.”

The Public Works Historical Society is working to honor Jim by establishing a memorial fund in his name to underwrite an oral history series. If you wish to make a contribution in his honor, look for details at www.pwhs.net.

Congress 2009

Plans are underway for the 2009 Congress in Columbus, Ohio. PWHS Board of Trustee members are lining up some great programs for this year. The luncheon program will feature a presentation from Dr. Paul Morman, who will talk about the Miami Conservancy District Law and its author, as well as some of the special provisions of the law and the legal battles surrounding its passage.

This year’s PWHS session will feature a panel discussion on privatization. The host state of the 2009 Congress is one with a long-running history of municipally owned utilities. The panel will look at various states’ experiences with privatization and why some agencies have moved to public ownership.

The PWHS booth on the exhibit floor will showcase historical photos of infrastructure supplied by our chapters as well as materials from two chapters celebrating milestone anniversaries—Central California (50 years) and New Jersey (20 years).

Lastly, the PWHS will host a meeting of chapter historians to enable these individuals to network, share ideas and ask questions regarding the compilation of a chapter’s history.
Hurricane Ike—A Natural Disaster

By Martin V. Melosi, Ph.D.
University of Houston, Texas

On Saturday morning, September 13, 2008, Hurricane Ike slammed into Galveston Island with powerful winds extending from Palacios, Texas, to western Louisiana. Before Ike blew itself out, it had rampaged across the country northward to Dayton and Cincinnati, Ohio—many miles away from the Gulf Coast—taking lives, taking down trees, tearing off roofs, and sending thousands of people into darkness.

Our house in southwest Houston was spared any damage, but we ultimately faced two weeks without power. For this, we felt extremely lucky, given the disaster Ike brought to Galveston and a large part of the southeastern Gulf Coast—disaster that will take years to reverse for many.

Ike did not pack the kinds of winds that everyone feared, nor did it drop the kind of rainfall that the Gulf Coast has come to expect from such storms. But don’t quote statistics to the people of Bolivar Peninsula whose homes and daily lives were virtually wiped out by the storm. This was a gigantic hurricane—one of the largest in recent years—packing sustained winds from 39 to 105 mph. By midday on Saturday, the Houston Chronicle stated, “more than 35 counties in Texas had endured tropical storm- and hurricane-force winds, from Matagorda County in the south to Panola County on the central Louisiana border.” (Sept. 21, 2008, B1). Several people lost their lives despite blunt warnings from officials to evacuate well before the storm. More than 2 million people were without electricity for days. More than $350 million in damage was done to trees in the East Texas forests, let alone the billions in other property damage. Most homes and other buildings in Galveston were damaged, although many were left standing. As historian Char Miller observed, “Galveston looks like a war zone.” (Texas Observer, October 3, 2008, 11)

The trail of destruction swept through Surfside Beach, Jamaica Beach, Bayou Vista, Texas City, Dickinson, Kemah, Seabrook, Baytown, Bacliff, San Leon and many other small communities before heading into Houston.

I could cite the litany of unbelievable and tragic facts about Ike for pages and pages. Those of you who want more can find plenty of stories in Texas newspapers and beyond. I also can dispense with the clichés about the all-too-common waves of destruction that hurricanes have caused all along the Gulf Coast in recent years. But how do you compare Katrina, Rita, Gustav, Ike? Statistics do little justice to the suffering of any one individual or family. And we almost become numb looking at the endless pictures of destruction to homes, businesses, and infrastructure of all kinds.

Aside from opening our pocketbooks, giving a helping hand to those in distress, and all other humane gestures, as historians of public works there is much we can do to tell the stories of these dramatic events and the human responses to them. Historians working in universities and public works practitioners in APWA chapters can collect personal reminiscences, conduct oral histories, sponsor archival collections of documents and pictures, and otherwise systematically try to preserve, write about, and talk about what have become too common unnatural, natural disasters. History and memory are good tools to place these dramatic events in perspective for others, events that we often try to forget or move beyond. Maybe our collective memories and experiences can make things easier for others coming after us to understand the gravity of these disasters, but also to help us cope with them in the future.
Fourth Biennial Conference of the Urban History Association—Shock Cities

By Martin V. Melosi, Ph.D.
University of Houston, Texas

The Fourth Biennial Conference of the Urban History Association—Shock Cities: Urban Form in Historical Perspective—was held in Houston, Texas, November 5-8, 2008. More than 250 people attended the meeting from all over the United States and also from Canada, Mexico, Brazil, France, England, Australia, and Turkey. Field trips included “Houston’s Energy Landscape,” with particular attention to the Houston Ship Channel, and “Art and Architecture in Houston,” focusing on downtown skyscrapers, the theater and museum districts, and Rothko Chapel.

Of particular interests to public works devotees were sessions on “Commercial, Industrial and Residential Land Use in Los Angeles”; “Reading the Landscape: Social Services, Infrastructure, and Houston’s Changing Neighborhoods”; “Texas Railroads and Railroad Cities”; “Urban Environment and Industry in France and the U.S.”; “Historical Perspectives on Urban Planning in Mexico”; “Rail and the City: Creative Issues”; “Local, Public, and Urban History in Ankara, Turkey”; “The Car and Automobile Infrastructure in the City: A Comparative Approach”; and “Environmentalism, Tourism, and Federalism in Waterfront Redevelopment.”

The plenary session focused on “Shock Cities: Lessons from North America,” and panelists Miriam Alfi Cohen (Mexico), Robert Self (USA), and Claire Poitras (Canada) discussed a wide range of issues related to urbanization across our continent. The session was ably chaired by past PWHS Board of Trustees member Mark Rose. Banquet speakers Michael Marme (Fordham) and Peter Carroll (Northwestern) shared the dinner podium and spoke about their award-winning studies of Suzhou, China. Carroll, in particular, raised the public works theme with his discussion of key road development that transformed the city in the early twentieth century.

To learn more about the Urban History Association or for more information on the program for the Houston meeting go to http://uha.udayton.edu/.

Public Works Historical Society’s Abel Wolman Award

Building Louisiana: The Legacy of the Public Works Administration

The 2008 Abel Wolman Award was presented to Robert D. Leighninger, Jr., for his book, Building Louisiana: The Legacy of the Public Works Administration, published by the University Press of Mississippi.

Author Robert D. Leighninger, Jr., is a sociologist by training but has been retooling for the last decade or so as a historian of New Deal public works. In addition to Building Louisiana, he has written Long Range Public Investment: The Forgotten Legacy of The New Deal, which covers all the New Deal building programs and their accomplishments across the country. He is currently a faculty associate in the School of Social Work at Arizona State University where he edits the Journal of Sociology & Social Welfare. Following are Mr. Leighninger’s comments.

“First, I just finished a year in the National Archives working with the Public Works Administration microfilm collection. By coincidence I was looking most recently at Baltimore projects. I did not know about Abel Wolman, at the time but I do know that Baltimore had several very large PWA water and sewer projects. Knowing now about his role in Baltimore in the 1930s, I’ll bet his fingerprints are all over those applications. So, I would like to think that he would have approved of his award going to work that featured a program that I’m confident he made good use of.

“Second, on the cover of the book is a picture of the entrance to New Orleans’ ‘Big Charity’ Hospital, which is not too many blocks away from here. It is endangered. Despite the fact that it was cleaned up after Katrina by the medical staff and many volunteers, then approved for operation by both the Public Health Service and the Army Corps of Engineers, LSU hospital administrators told them to go home. They wanted a new building. New Orleans desperately needs their emergency care, particularly their mental health beds. A new report on structural stability is due out in two days, and I’m confident that it will attest to the building’s viability for another 70 years. If you want to be involved in the efforts to save this monumental public edifice, you can contact the Foundation for Historic Louisiana or the Committee to Reopen Charity Hospital (bradott@bellsouth.net).

“Third, it is nice to have one’s work recognized by fellow academics, but recognition by public works practitioners, people who actually do the work, is a whole other thing. They are my heroes, and to know that they find the work useful is an honor I never dreamed of.

“Thank you very much.”
Public Works Historical Society’s Michael Robinson Award

“Revolt Against Sprawl: Transportation and the Origins of the Marin County Growth-Control Regime”

The 2008 Michael Robinson Award was presented to Dr. Louise Nelson Dyble for her article “Revolt Against Sprawl: Transportation and the Origins of the Marin County Growth-Control Regime,” published in the November 2007 issue of the Journal of Urban History.

Louise Nelson Dyble is the research director at the Keston Institute for Public Finance and Infrastructure Policy at USC. Her new book, Paying the Toll Local Power, Regional Politics, and the Golden Gate Bridge, was published by the University of Pennsylvania Press. Following are Dr. Dyble’s acceptance comments.

“Recognition from the PWHS means a lot to me. Public works represent the power of people working together. They don’t always do what they are supposed to do, sometimes they fail, and sometimes they have unforeseen negative consequences, but they represent collective hope and a commitment to the future. Public works can transform the landscape, shape development, stimulate the economy, and hopefully in the future, they will help save the environment.

“The value of well-planned and designed public works, from bridges to sewers to streetcar systems, is impossible to quantify. Certainly, the benefits of public works can last a long time—long after the original capital investment in their construction is paid. They can boost prosperity and quality of life for everyone, and the revenue they generate can support future investments as well.

“Public works are much more than just physical structures. Building, operating, and maintaining them requires complex organization and a long-term commitment of resources. Who should be responsible for them, to whom they are accountable, and how they pay the bills are all very important questions with important implications for future policy and government. Today, we have state DOTS and gas taxes as part of the legacy of our national highway building ambitions. We have a mixture of local public and private agencies operating water systems, many dating to the Progressive Era. We have authorities and special districts in charge of ports and airports, to mention just a few examples. All of these organizations reflect critical historical decisions, and all of them have consequences for politics and policy, for development and growth.

“Recently many have been arguing that these large investments should be the responsibility of the private sector. However, if we lean too much on private enterprise to build infrastructure, we risk creating enduring institutions removed from public accountability and the public interest. Public works are some of the most powerful tools that we have as citizens acting through our local, state, and national governments. We can shape our world. We can improve public health, provide good jobs and new opportunities, create beauty and community. Shifting responsibility for these facilities away from the public takes away some of that power. In particular, transferring the projects with the greatest potential to generate revenue to private corporations could exacerbate the fiscal weakness and budget problems of government, creating a cycle that could sap our collective strength. I worry that our ability to build important public works that don’t generate revenue will suffer—and market forces will come to determine what gets built and what doesn’t, regardless of other important values.

“History demonstrates that creating effective and efficient public institutions to build and manage public works is well within our ability. As citizens we have the power to make collective investments in the future, investments that have the broadest possible benefit and that will make us all richer in the long-run.”

PWHS Forms Alliance

The PWHS Board of Trustees have voted to enter into a corresponding arrangement with the Construction History Society of America. Their mission is:

The Society is dedicated to the study of the history and evolution of all aspects of the built environment—its creation, maintenance and management. It is a forum for scholars and professionals in the field to share, meet and exchange ideas and research. Membership is open to a wide range of construction related disciplines involved in the planning, development, design and construction of buildings and engineering infrastructure, in addition to those concerned with their operation and preservation. Members share a passion for examining how our existing structures were planned, designed and built, with the purpose of using this knowledge to better preserve what we have and to guide us in determining future directions.

The US branch of the Construction History Society is a distinct entity catering to the historical studies and interests of its members here in America. Membership in the US branch includes full benefits in CHS at large, including receipt of the Society’s journal and newsletter and links to scholars in the field worldwide.

Their next International Congress Construction History Society meeting will be held in Cottbus, Germany, May 20-24, 2009.

For further information and list of events, membership and publications, please visit www.constructionhistorysociety.org.