

HYDROLINK

A Hydrology and Hydraulics
Newsletter

February 2010 Issue: 4



Message from the Technical Committee on Hydrology & Hydraulics Chair Rick Renna, Florida DOT

Greetings from the Technical Committee on Hydrology and Hydraulics (TCHH). Michael Fazio, Utah DOT, has recently ended his term as chairman of the TCHH. As his vice chairman, I saw, up close, the extraordinary integrity, commitment, honor, and leadership with which my friend, Michael, conducted himself. I now have the privilege and challenge of filling some very large shoes (and writing this brief article) as the new chairman of the TCHH.

The times in which we live have transitioned from a time of relative plenty to a diet of scarce resources as our economy has spiraled into a steep recession. None of us is untouched by the personal difficulties of talented colleagues, private and public, whose careers and incomes are being affected. Major cutbacks in spending have deferred activities that many of us had heretofore considered essential. We have no guarantee that we will soon return to "the way things used to be." Our challenge then, as responsible government leaders and good stewards of precious public resources, is to embrace and adapt to the sacrifices of these austere times and to rethink how to discharge effective public service. Re-examining what is most important to us – both professionally and personally – requires courage; to borrow a recently coined phrase, it is not time to retreat, but to reload. To that end, I look forward to a fruitful season of changing approaches to the never changing goal of dedicated public service within the our hydrology and hydraulics discipline.

Respectfully,

Rick Renna, Chair - TCHH

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**Technical Committee on Hydrology and Hydraulics at the 2010 Fall Meeting
Indianapolis, IN**

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Plans and Efforts to Update Bulletin 17B

Wilbert Thomas, Jr., Chair of the Hydrologic Frequency Analysis Work Group

Introduction:

Bulletin 17B, *Guidelines For Determining Flood Flow Frequency*, developed by the Hydrology Subcommittee of the Interagency Advisory Committee on Water Data (IACWD) was published in March 1982 (IACWD, 1982). Bulletin 17B is used by all Federal agencies and many State and local agencies for flood frequency analyses on gaged streams. Considerable research on flood frequency analyses has been accomplished since 1982 and efforts are underway to incorporate new techniques in a revised version of Bulletin 17B. Griffis and Stedinger (2007) provide a history of the development of Bulletin 17B and describe recent research activities that are relevant to an update of Bulletin 17B.

Hydrologic Frequency Analysis Work Group:

In December 1999 a Hydrologic Frequency Analysis Work Group (HFAWG) of the Subcommittee on Hydrology of the Advisory Committee on Water Information was convened (<http://acwi.gov/hydrology/Frequency/>). The overall goal of the HFAWG is to recommend procedures to increase the usefulness of the current guidelines for hydrologic frequency analysis (e.g., Bulletin 17B) and to evaluate other procedures for frequency analysis of hydrologic phenomena. Unlike the work group that developed Bulletin 17B, the new work group consists of Federal and non-Federal participants. In January 2000, the HFAWG had their first meeting and undertook the following tasks as assigned by the Subcommittee on Hydrology:

- Develop a position paper on flood frequency analysis for ungaged watersheds,
- Develop a set of Frequently Asked Questions and Answers on Bulletin 17B,

- Develop guidance on flood frequency analysis for watersheds whose flood flows are regulated by upstream flood detention structures.

A paper entitled *Evaluation of Flood Frequency Estimates for Ungaged Watersheds* was completed in August 2001 and posted on the HFAWG web site in October 2002 (http://acwi.gov/hydrology/Frequency/pdf/ungaged_101602.pdf). This paper describes an approach for evaluating flood discharges estimated from regression equations and rainfall-runoff models and for judging the reasonableness of the flood discharges using a measure of uncertainty such as the standard error. Regional regression equations and rainfall-runoff models are the two most frequently-used approaches for estimating the magnitude and frequency of flood discharges for ungaged watersheds.

A list of *Frequently Asked Questions and Answers on Bulletin 17B* was prepared by the HFAWG and posted on their web site on September 29, 2005 (<http://acwi.gov/hydrology/Frequency/Bulletin17B-FAQ-09-29-05.pdf>). The questions and answers provide additional guidance and clarification on procedures and terminology given in Bulletin 17B.

An incomplete draft report describing various approaches for frequency analyses for regulated watersheds was prepared but the report has not been completed. This is still an outstanding task for the HFAWG to complete.

Proposed Improvements in Bulletin 17B:

In November 2005 the HFAWG developed a plan for updating Bulletin 17B (<http://acwi.gov/hydrology/Frequency/>). The major improvements in Bulletin 17B to be evaluated include:

- Evaluate and compare the performance of the Expected Moments Algorithm (EMA) to the weighted-moments approach of Bulletin 17B for analyzing data sets with historical information.
- Evaluate and compare the performance of EMA to the conditional probability adjustment of Bulletin 17B for analyzing data sets with low outliers and zero flows,
- Describe improved procedures for estimating generalized (regional) skew,
- Implement improved procedures for defining confidence limits.
- Implement an improved plotting position formula.

The major advance in updating Bulletin 17B is incorporating the Expected Moments Algorithm (EMA) to estimate the moments of the log-Pearson Type III distribution (Cohn and others, 1997). This is not a major departure from existing Bulletin 17B procedures because it maintains the method of moments approach for fitting the logarithms of the annual peak flows to a Pearson Type III distribution. The use of EMA allows for the use of interval data where only a range of discharge is known for a given flood or binomial data where it is known that the discharge was either greater than or less than a given value. Also the use of EMA would allow for multiple thresholds for analyzing historical data or high and low outliers.

There have been recent advances in estimating generalized or regional skew in recent years. Reis and others (2005) describe a Bayesian Generalized Least Squares regression approach for estimating generalized or regional skew and this guidance could be provided in a revised version of Bulletin 17B.

The confidence limits computations in Bulletin 17B do not consider the uncertainty in the skew coefficient and hence the confidence limits are too narrow. Chowdury and Stedinger

(1991) and Cohn and others (2001) describe approaches for estimating more accurate confidence limits that do consider the uncertainty in the skew coefficient. These procedures can be incorporated into a revised version of Bulletin 17B.

Hirsh and Stedinger (1987) describe a plotting position formula that is more accurate than existing formulas in Bulletin 17B when there are historical data in the sample. This plotting position formula could be implemented in a revised version of Bulletin 17B.

Testing of EMA and Bulletin 17B Procedures:

A major activity of the HFAWG is the current testing that is comparing and evaluating EMA and Bulletin 17B procedures. This testing is taking two approaches: using observed annual peak data at 82 long-term gaging stations and Monte Carlo simulations of synthetic data. The long-term stations that were selected are rural watersheds unaffected by urbanization, diversions or regulation by major flood control structures. The locations of the 82 stations are shown in Figure 1. The average record length of these stations is 80 years. The intent is to perform split-sampling analyses using shorter periods of record and then comparing the results to those based on the full period of record. Many of the stations were selected because of historical flood data outside of the period of systematic record and the presence of low outliers. The 82 stations can be characterized as follows:

- 29 stations with no historical data or low outliers,
- 24 stations with historical data but no low outliers,
- 16 stations with low outliers but no historical data,
- 13 stations with historical data and low outliers.

A draft report has been prepared comparing EMA and Bulletin 17B procedures for the full period of record for the 82 stations. Testing to date has verified that EMA and Bulletin 17B procedures give the same flood frequency estimates when there are no historical data or low outliers. This was expected as the EMA procedures and Bulletin 17B procedures are the same if there are no outliers or adjustments for historical data and all annual peak flows are characterized by point values (as is the standard practice in flood frequency analysis). There were significant differences for some samples with historical data and low outliers. The HFAWG is still evaluating and understanding these differences.

Mr. Joseph Krolak , FHWA, who is also a member of HFAWG, stated that "In the near future, FHWA will be asking State DOT drainage units if they wish to help in "testing" the proposed new method as proposed in the revised Bulletin 17B (prior to its official release). The hope is to obtain feedback from real practitioners in the hydrologic community to allow refinement of the product."

Please contact Mr. Joseph Krolak (joe.krolak@dot.gov) for more information.

Future Activities:

The split-sampling analyses for the observed data and the Monte Carlo simulations of synthetic data are still ongoing. These analyses will likely be completed in the Spring of 2010. A report will be completed in 2010 that describes the EMA and Bulletin 17B procedures and results of all testing. This report will be a basis for the HFAWG to determine if the EMA procedure should be incorporated into a revised Bulletin 17B.

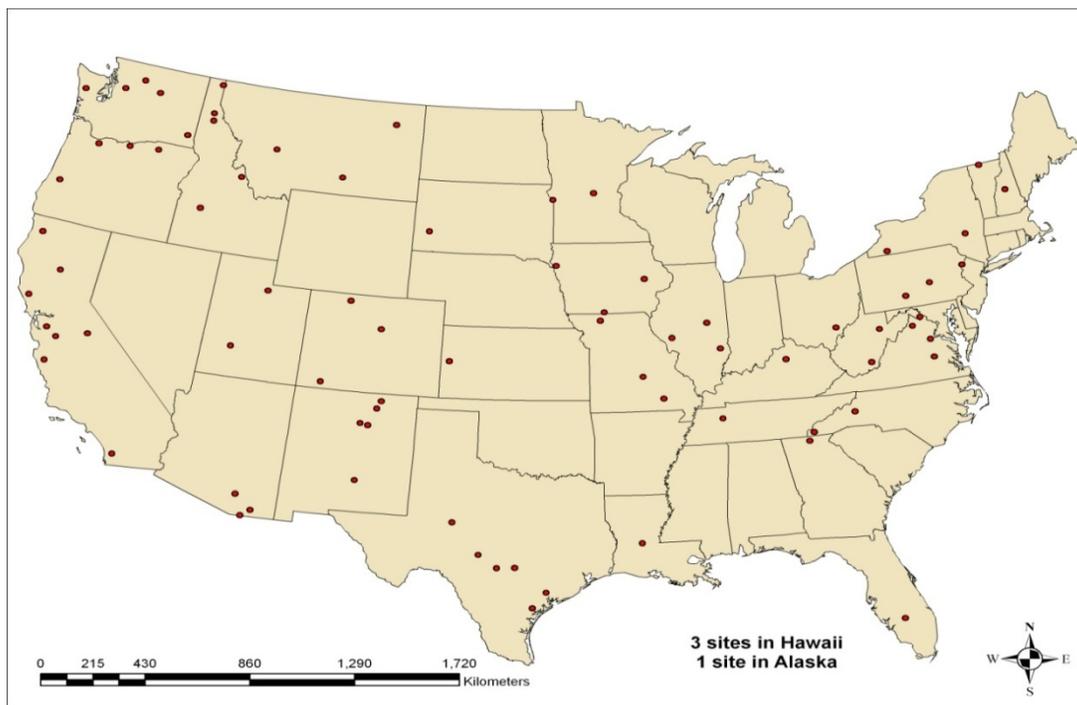
The HFAWG will prepare recommendations on revisions to Bulletin 17B for approval by the Subcommittee on Hydrology and the Advisory Committee on Water Information. Once these recommendations are approved, the HFAWG will develop a revised version of Bulletin

17B. Given the progress to date and the needed approval process, any update of Bulletin 17B will likely occur in 2011.

References:

- Chowdury, J.U. and Stedinger, J.R., 1991, *Confidence interval for design floods with estimated skew*: Journal of Hydraulics Engineering, 117(7), pp. 811-831.
- Cohn, T.A., Lane, W.L., and Baier, W.G., 1997, *An algorithm for computing moments-based flood quantile estimates when historical information is available*: Water Resources Research, 33(9), pp. 2089-2096.
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- Interagency Advisory Committee on Water, 1982, *Guidelines For Determining Flood Flow Frequency*: Bulletin 17B of the Hydrology Subcommittee, Office of Water Data Coordination, U.S. Geological Survey, Reston, VA, 183 p.
- Reis, D.S., Jr., Stedinger, J.R., and Martins, E.S., 2005, *Bayesian GLS regression with application to LP3 regional skew estimation*: Water Resources Research, 41, W10419.

Figure 1. Locations of long-term gaging stations where EMA and Bulletin 17B procedures are being tested.



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EPA Effluent Limitation Guidelines and Standards For the Construction and Development Point Source Category

Cynthia Numri, FHWA

Summary:

On December 1, 2009, the Environmental Protection Agency (EPA) issued a new ruling on effluent limitation guidelines for stormwater discharges from construction sites, 40 CFR 450. Primarily the new ruling expands the National Pollutant Discharge Elimination System (NPDES) by requiring measuring and reporting of the effectiveness of the NPDES in reducing pollutants discharged to streams. The main measure of reduction will be turbidity. The ruling becomes effective February 1, 2010, with a staggered implementation phase through February 2, 2014.

Background:

The Clean Water Act (CWA, 1972) authorizes the EPA to develop and implement regulations to ensure the chemical, physical, and biological integrity of the Nation's waters are restored and maintained. In 1990, in order to maintain the integrity of waters subject to stormwater discharges from construction sites, the EPA instituted requirements for reducing pollutants from construction site stormwater discharges via the NPDES permitting process. The NPDES process had not required verification of the effectiveness of the pollutant reduction through measured indicators but instead relied on visual confirmation that the permit was implemented and that the prevention devices were functioning properly during storm events.

In 2000, the EPA classified the Construction and Development (C&D) point source as an Industrial point source. This classification then required the EPA to issue Effluent Limitation Guidelines (ELGs) and New Source Performance Standards (NSPS) for discharge from construction sites (i.e. C&D point sources). The EPA backed away from issuing the ELGs and NSPS and continued to rely on existing programs and regulations (i.e. NPDES). However, in 2004 the Natural Resources Defense Council, Waterkeeper Alliance, and New York and Connecticut filed a complaint in federal district court that the EPA was not doing its duty regarding the CWA by not issuing the ELGs and NSPS for construction site discharges. Subsequently, the court ordered the EPA to issue the ELGs and NSPS and dictated the deadline for the issuance as December 1, 2009.

In 2008, EPA issued its proposed ELGs and NSPS and requested comments from stakeholders. The proposed ELGs and NSPS consisted of three options. The first option required non-numeric limitations which could be implemented with erosion and sediment controls and practices similarly to what had already been used on projects requiring NPDES permits. The second and third option required certain construction sites to meet effluent turbidity limits of 13 NTU. EPA believed that the 13 NTU was achievable using current technology, which was the Active or Advanced Treatment System (ATS). The ATS consists of polymer-assisted clarification and filtration and often requires large basins to treat the water. The EPA also requested input from stakeholders on the viability of passive treatment technologies to reduce pollutants to a realistic numeric limit.

Concerns of States:

Many states and the American Association of State Transportation Officials Technical Committee on Hydrology and Hydraulics (AASHTO TCHH) provided comments to EPA on the proposed ELGs and RSPS. These comments brought to the attention of the EPA the particular concerns with respect to implementing the proposed options on linear transportation projects. In particular, states were concerned with:

- Implementing the ATS technologies required in Options 2 and 3 due to expensive or non-existent right-of-way for the basins;
- The costs for and effectiveness of implementing the ATS technologies were only based on relatively few projects in the Northwest;
- The necessity to achieve the low turbidity limit of 13 NTU which was much lower than receiving waters;
- Requirements to monitor a linear project which could have multiple discharge points;
- Compliance issues with respect to spikes in turbidity;
- Environmental hazards due to the use of polymers to clarify discharges.

Based on the comments and data submitted by the state Departments of Transportation (DOTs), as well as other stakeholders, the EPA backed off of implementing Options 2 and 3. Instead, the final ruling contains only Option 1 for the non-numeric component and a fourth option which utilizes passive treatment technologies to achieve a specified turbidity limit for the numeric limitation component. The turbidity limit in the final ruling (280 NTU) is much higher than originally proposed (13 NTU).

Final Ruling:

The requirements of the non-numeric component of the final ruling are detailed in 40 CFR 450.21 Effluent Limitations Reflecting the Best Practicable Technology Currently Available. The non-numeric component is applicable on all sites subject to a NPDES permit. The requirements are:

- Erosion and Sediment Controls – These requirements are similar to requirements in the current NPDES permit process.
- Soil Stabilization – Although stabilization has been used as a practice in the NPDES, the new ruling requires permanent stabilization to begin immediately upon completing earth disturbing activities or if activities have temporarily ceased and will not resume for more than 14 days.
- Dewatering – Discharges from dewatering activities are prohibited unless managed by appropriate controls.
- Pollution Prevention Measures – Measures must be developed and implemented to prevent pollution from the construction site by activities such as washing of equipment and disposing of construction waste.
- Prohibited Discharges – Some discharges are prevented, such as water from washing concrete trucks, oil, fuel, etc.
- Surface Outlets – If a basin is used as an erosion/sediment control measure, then effluent should be discharged from the water surface.

The requirements of the numeric limit component are detailed in 40 CFR 450.22, Effluent Limitations Reflecting the Best Available Technology Economically. By August 2011, the requirements in the section will be applicable for construction sites with more than 20 acres disturbed at one time. By February 2014, the requirements will be applicable for construction sites with more than 10 acres disturbed at one time. The requirements are:

- Turbidity Limit – The limit was established at 280 NTU. Compliance with this limit is based on monitoring during stormwater discharge events. An average daily turbidity level must remain below the 280 NTU.
- Exception - The ruling did allow an exception to monitoring on a day when the storm event is larger than a 2-year 24-hour storm event.

The new ruling is much different than the proposed ruling. EPA listened to the concerns of the states and instituted limits that are much higher than originally stated and achievable

by technologies determined by the designer versus being dictated by the EPA. Such changes should encourage state DOTs to continue to provide comments to the EPA on future proposed rulings.

Implementation by States:

Most state DOTs are still in the beginning stages of determining how to implement the new ruling. Some of the proposed methods for implementing the new rulings are:

- Minimize disturbed areas to less than 10 acres so as to eliminate the monitoring requirements to meet the turbidity limit in 450.22.
- If the 10 acre limit must be exceeded, passive treatment systems, such as infiltration devices, dispersion devices, or settling basins with PAM additives, will be used to treat the effluent to achieve the 280 NTU limit. Note that the EPA may consider some infiltration devices as Class V injection wells and subject to regulations in the Safe Drinking Water Act. Some states are also concerned with the viability of infiltration devices in areas with cohesive soils or rock. With respect to dispersion devices, some states are concerned with dispersing any water onto private property.
- If basins are used, some DOTs plan to use the proprietary device called the Faircloth Skimmer (www.fairclothskimmer.com) to meet the requirements of the non-numeric limitation guideline on surface outlets.

One of the hardest parts of the new ruling to implement is the monitoring portion of the numeric limitation component. Some of the issues that must be addressed are:

- Type, interval, and frequency of sampling. EPA expects at least 3 samples per day.
- Location of the sampling. Should the sampling be at every outlet or a representative number? How would one access the sampling site?
- How to monitor stream restoration projects, which are in or adjacent to the water to be protected.

Some states (California, Georgia, Oregon, Vermont, and Washington) have already required monitoring as part of their Construction General Permit (CGP). These states could be a resource regarding how to effectively implement a monitoring program.

The EPA will provide guidance on monitoring prior to issuing its new CGP in June 2011. In the meantime, states should work closely with their state permitting authority to ensure that monitoring requirements in new state CGPs and Individual Permits are reasonable and implementable for linear projects.

For additional information about the new ELG ruling, please visit the EPA site: <http://www.epa.gov/waterscience/guide/construction/#status>. You may also contact Patricia Cazenias, FHWA, at Patricia.Cazenias@dot.gov.

Looking Ahead:

The efforts by states and the AASHTO TCHH to provide informative comments to the EPA resulted in the EPA dramatically changing the proposed ELGs and NSPS ruling. As new rules are proposed by EPA, states and the AASHTO TCHH should continue to provide informative comments to help guide the final EPA rulings. One upcoming ruling is the Proposed National Rulemaking to Strengthen the Stormwater Program. This new ruling seeks to reduce post-construction stormwater discharge from new development and redevelopment. For more information, please visit the website:

<http://cfpub.epa.gov/npdes/stormwater/rulemaking.cfm>

Note, this new initiative by EPA to reduce stormwater discharges embraces low impact development (LID) techniques, such as rain gardens, infiltration, etc. This new initiative was one reason that the EPA decided not to implement Options 2 and 3 of the ELG ruling, because these options required large basins. The EPA was concerned that the large basins would be retained as post-construction devices to manage stormwater flows from developed sites, which would be inconsistent with this new initiative of using LID techniques.

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New Publication – AASHTO Highway Drainage Manual

Michael Fazio, Utah DOT

After working diligently for five years on improving and updating the Model Drainage Manual (MDM), the Technical Committee on Hydrology and Hydraulics (TCHH) is finally seeing the light at the end of the tunnel. TCHH met last November with Ken Shearin, Roy Jorgensen Associates' project manager, who with his team has been reviewing the work completed by TCHH members on the MDM. Assessing the revision work completed by TCHH was the first phase of the publication project. The second and last phase of the project, which we hope will start by the end of February 2010, will provide that the manual is consistent with current technologies, has a uniform writing style, is appropriate for a broader audience, and is less redundant. Other improvements include updating graphs, photographs, references, and any other needed updates.

The new manual will have a new name: AASHTO Drainage Manual (ADM). The ADM includes twenty chapters that are divided into two parts: policy and procedures. Users will be able to purchase portions of the manual separately, allowing users to get what they need for their business.

We plan to have the manual complete and ready to publish sometime in the spring of 2011. If you have questions on the ADM, please contact Michael Fazio at mfazio@utah.gov.

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HIGHLIGHTS: Concerns of the States

Concerns of the States

Issue: "How do recent budgets and policies impact participation in National Events (i.e. TRB, Conferences), Research and groups such as AASHTO? "

Responses:

At the last AASHTO Technical Committee on Hydrology and Hydraulics (TCHH) meeting in November 2009 state representatives submitted and discussed concerns. Several themes ran throughout many of the discussions. Besides more stringent environmental requirements the most frequently mentioned item was budget constraints. In these tough economic times everyone is being asked to reduce spending. Some states have reported mandatory furloughs, hiring freezes, and of course travel restrictions. With many state DOT's limiting out of state travel it is even more difficult than ever to participate in national or regional activities. Even TCHH had difficulty in obtaining a quorum for conducting business.

So what are the negative consequences of reduced travel? Reduced participation in national events of course. These events include national conferences as well as committee meetings are important venues for meeting and learning from hydraulics people from other DOT's and FHWA. The contacts and technical information sharing provide valuable information in keeping current in the field. Being involved in national activities is also a way to have your states voice heard and your states interests and opinion's considered.

So what are the alternatives? I have noticed a real increase in remote learning. There are Webinar notices on a variety of subjects coming out weekly. No, training webinars do not replace classes since they don't get to the level of detail as an NHI class, but for now they are better than nothing and they are a way to get exposure to new advancements. Also more and more meetings are being conducted as teleconferences, video conferences or Webinars. Again it may not be as effective as a face to face meeting but considering travel time and current workloads it is an efficient way to manage time (and travel budgets). TCHH is planning on holding their spring meeting as a teleconference or Webinar to help members stay actively involved even if travel is restricted.

Minnesota DOT

That issue is an extremely sore one here in California. We hosted the AASHTO Annual Meeting in So. Calif. a couple of months ago and were severely criticized for it. A local TV news station did an "expose" which portrayed the event as little more than a several day paid vacation for all attendees and said that Caltrans had wasted taxpayer money. Among things that were specifically identified were the additional Caltrans staff who were there to help shuttle out-of-town guests to and from the airport and the number of staff who were helping with the general organization and operation of the event. This "expose" ultimately led to our Director being called to testify in front of our Legislature to attempt to defend our holding of the event. While he tried to present a more accurate picture of the advantages of holding such an event and the positive benefits to the local economy, he ultimately said he would "probably not" host such an event again in the future. We've subsequently been hit with memos from our management that will make it more difficult to justify hosting AASHTO events in the future. In normal budget times this would have not been an issue at all, but showing any expenditure other than for essential core services is called into question and subject to external scrutiny.

CALTRANS

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AASHTO Update – New Cross-Cutting Pipe Task Force

Kelley Rehm P.E.

Joint Task Force on Pipe:

Over several past meetings, the AASHTO Technical Committee on Hydrology and Hydraulics has tossed around the idea that there should be a working group of professionals that deal with many of the Pipe and Culvert questions and research issues that come up from around the nation. This past summer, those ideas were further developed and resulted in the drafting of a resolution to form a "cross-cutting task force" on pipe and culvert issues. The resolution was balloted and passed by the AASHTO Subcommittee on Design,

Subcommittee on Bridges and Structures and the Subcommittee on Materials. The resolution as passed is below:

***WHEREAS**, there is recognized a need for communication between AASHTO Highway Subcommittees on issues concerning the use, design and testing of all types of pipes and culverts,*

***WHEREAS**, there is also recognized a need for peer support when making decisions on recommended standard practices and materials and design specifications dealing with pipe issues*

***WHEREAS**, there is also a need for a formal cross cutting task force to recommend needed research on pipe issues, review ongoing research, provide a platform for cooperative review of publications to be balloted by AASHTO and to help coordinate the review process and approval of new and innovative pipe products and technologies.*

***NOW, THEREFORE, BE IT RESOLVED**, on the occasion of the 2009 Subcommittee on Design meeting, the members in attendance express their support for the formation of a Joint Task Force on Pipe that will include members of the Highway Subcommittee on Bridges and Structures, the Highway Subcommittee on Materials and the Highway Subcommittee on Design and/or related Technical Committees,*

***BE IT FURTHER RESOLVED**, that the members of the Joint Task Force on Pipe Issues will be appointed by the chairs of each of the Subcommittees involved with at least one member from related technical committees. Each subcommittee will appoint up to four (4) members, preferably one from each AASHTO region. The Chair of the task force shall be appointed by an agreement of all three of the controlling Subcommittee chairs. In order to minimize member travel most if not all the work will be done by holding conference calls or other such means. Any need for a face to face meeting of this joint task force would generally be held during one of the three parent Subcommittee summer meetings. This task force will sunset in 2013 unless the three supporting subcommittees agree there is a need to continue this joint task force for a specific time period.*

The Subcommittee on Design (SCOD) has already assigned their representatives. All SCOD members of the Joint Task Force on Pipe are also members of the Technical Committee on Hydrology and Hydraulics. They are: Glenn Decou (CA), Rick Renna (FL), Andrea Hendrickson (MN), and Steve Sisson (DE).

Other AASHTO News:

Other AASHTO happenings that affect the Hydrology and Hydraulic community include the current effort to respond to **the Docket ID No. EPA-HQ-OW-2009-0817 concerning Preliminary Considerations for Modifying/Supplementing EPA's Stormwater Regulations**. A working group was assembled made up of environmental and water experts from member states. An AASHTO position letter will be submitted to the EPA based on the comments of this group. More information on this Docket can be found at: <http://cfpub.epa.gov/npdes/stormwater/rulemaking.cfm> . You can see other comments (including the AASHTO comments once submitted) by visiting www.regulations.gov and searching for Docket ID No. EPA-HQ-OW-2009-0817. Individual comments can also be made at this website.

Also, many new webinars and information on EPA rulings and other environmental issues can be found on the website for The AASHTO Center for Environmental Excellence at <http://environment.transportation.org> .

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Announcements

FHWA WMS/SMS Webinar Series

The Federal Highway Administration Resource Center Hydraulics team has begun a monthly webinar series featuring the Watershed Modeling System, WMS, and the Surface-Water Model System, SMS. The series will continue through 2010 with the focus alternating each month between WMS and SMS. The presentations are designed to help users of all levels better understand the capabilities and features of each program and will be presented by FHWA and the primary developers of WMS and SMS.

All webinars will be held on the third Wednesday of the month at 1pm (eastern time) and be 1 – 2 hours in length. Each webinar will include a presentation on a specific topic, a demonstration of the topic, and a question and answer session. In addition, the webinars will be recorded and available for viewing at a later date. The topic for each webinar is shown below.

Webinar Schedule for 2010 (tentative)

January	Overview	WMS	
February	Overview		SMS
March	Coordinates/Projections	WMS	SMS
April	Data Collection		SMS
May	Data Collection	WMS	
June	Editing TINS		SMS
July	Modeling Wizard	WMS	
August	Modeling in TUFLOW		SMS
September	HEC RAS in WMS	WMS	
October	FESWMS		SMS
November	Floodplain Delineation	WMS	
December	Hydraulic Structures		SMS

The next webinar will be held on February 17, 2010 at 1 pm eastern time and will provide an overview of the capabilities of the SMS program. All webinars will require pre-registration. To register for the February webinar go to the following weblink and select "Register for this event":

www.nhi.fhwa.dot.gov/resources/webconference/viewconference.aspx/webconfid=19243

For more information about these webinars please contact Veronica Ghelardi veronica.ghelardi@dot.gov or Larry Arneson at larry.arneson@dot.gov.

Nominations are now being accepted for the 2010 Federal Highway Administrations (FHWA) Excellence in Highway Design Awards

Nominations are now being accepted for the FHWA's 2010 Excellence in Highway Design Awards. This biennial awards program recognizes innovation and excellence in the design

of context sensitive highway-related facilities. This year's awards will showcase outstanding design projects, methods, initiatives or programs that have significantly advanced how their agency approaches and designs context sensitive highway solutions.

Nominations are only being accepted electronically until March 1 at: <http://www.fhwa.dot.gov/eihd/>. Anyone may submit a nomination for an award for highway or highway-related improvements in the United States or its possessions.

Awards will be presented in seven categories to showcase outstanding achievements of public agencies in enhancing their project development process, design programs, management of projects, and designing context sensitive highways, bridges, tunnels, multimodal facilities, and other support facilities.

Award winners will be announced at the American Association of State Highway and Transportation Officials' annual meeting in October 2010. Presentations of the awards will be coordinated by the FHWA field offices within their respective State or region at a later date. Additional information on the FHWA Excellence in Highway Design Awards, award categories or previous award winners is available at: <http://www.fhwa.dot.gov/eihd/>.

AASHTO/FHWA/FTA WEBINARS ON CLIMATE CHANGE

AASHTO, FHWA and FTA are sponsoring a series of six webinars on climate change, February - June 2010. The webinars are designed for state DOTs -- CEOs, Chief Engineers, planning staff, communications staff, environmental staff, engineering staff, government affairs staff, and others. Climate change is going to be a major issue for state DOTs, so we hope to have a large and diverse participation.

The topics, dates, and times for the first three webinars are:

Climate Change 101 -- An overview of climate change science, linkages to energy security, greenhouse gas (GHG) reduction strategies for surface transportation, and risk-based adaptation to climate change. Intro by Paula Hammond, Chair of AASHTO Climate Change Steering Committee and Secretary of Washington DOT. Lead presenter: Cindy Burbank of Parsons Brinckerhoff.

Date and time: Wednesday, February 24, 2:00-3:30 Eastern.

To register, click on: <https://www2.gotomeeting.com/register/592517994>

GHG Targets, Methodologies, and Legislation -- Issues in setting GHG reduction targets for transportation, methodologies for estimating transportation GHG, and prospects for climate change legislation affecting transportation. Lead Presenters: Bill Malley (on Targets and Legislation), Steve Lawe of RSG (on Methodologies), and Brian Gregor of Oregon DOT (on Oregon DOT's "GreenSTEP," a promising new GHG methodology ORDOT is developing for estimating statewide GHG from transportation).

Date and time: Wednesday, March 10, 2:00-3:30 Eastern.

To register, click on: <https://www2.gotomeeting.com/register/938268586>

Climate Adaptation for Transportation -- The latest research and risk-based frameworks for adapting surface transportation infrastructure and networks to climate change. Lead Presenters: Mike Meyer of Georgia Tech/Parsons Brinckerhoff and a state DOT executive (TBD) who has been working on climate adaptation.

Date and Time: Wednesday, March 31, 2:00-3:30 Eastern.

To register, click on: <https://www2.gotomeeting.com/register/865949283>

2010 National Hydraulic Engineering Conference
Highway Hydrology and Hydraulics: Where Water Meets The Road
Park City, Utah - August 31 to September 3, 2010



www.udot.utah.gov/nhec

Session Information

The 2010 NHEC theme is "Highway Hydrology and Hydraulics: Where Water Meets the Road." Today's Hydraulic engineers are facing significant new challenges ranging from accelerated design and construction schedules, more sophisticated environmental goals as well as staffing and monetary limitations. Doing more with less the Hydraulic Engineers of today must use all the tools and techniques at their disposal to resolve these challenges and develop economical, innovative and environmentally friendly projects, which fulfill many diverse design objectives. The 2010 NHEC will highlight effective design tools and techniques available to the Engineer as well as highlight research projects and partnerships which foster innovation in project design. Presentations will center of the following topics:

- Bridge or Culvert Design
- Bridge Scour
- Fish Passage
- Stream Restoration or Stream Geomorphology
- Water Quality
- New Software
- Research Results
- Climate Change

Registration and Location

Register online at the conference website. The conference registration fee is \$250. The 2010 NHEC will be held at the beautiful Canyons Resort in Park City, Utah, just a short distance from Salt Lake City. Call 888-226-9667 and mention the 2010 National Hydraulic Engineering Conference.

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MEET OUR 2010 TCHH OFFICERS

Rick Renna, P.E. - CHAIR
State Hydraulics Engineer
Florida Department of Transportation

Rick Renna was born and raised in Key West, FL, moving later to the Ft. Lauderdale area where he joined the Florida DOT in 1974. He currently lives in Tallahassee with Gail, his wife of over 30 years, and has two children – Susanna (22) and David (21). In his spare time, Rick enjoys outdoor recreation and playing music.

Rick Renna began his tenure with FDOT in 1974, serving in construction until 1986, when he transferred to hydraulic design. He graduated from Florida International University and was registered as a professional engineer in 1987. Rick began managing bridge scour research in 1988, overseeing the development of FDOT 's scour equations and procedures. Rick became FDOT's State Hydraulics Engineer in 2001, assuming responsibility for FDOT' policies in hydrology, roadway hydraulics, bridge hydraulics, coastal engineering, pipe materials selection, stormwater management, and erosion and sediment control.

Karuna Pujara, P.E. – VICE CHAIR
Chief, Highway Hydraulics Division
Maryland State Highway Administration

Karuna has twenty-five years of experience in Civil Engineering with focus in hydrologic and hydraulic analysis and design of hydraulic structures. She has been working with the Maryland State Highway Administration for past sixteen years and currently with the Highway Hydraulics Division as a Division Chief. Karuna has a Masters of Environmental and Water Resource Engineering and is a registered Professional Engineer.

Her experience includes storm drain culvert analysis and design, channel hydraulic studies, storm water management (SWM), erosion and sediment control (ESC) design, watershed studies, Non-point Discharge Elimination system (NPDES) permitting and program, stream stabilization projects, pump station design, technical review of projects, consultant contract procurement, consultant management, development of policies related to drainage and management of the division. In her position she manages annual budget of \$12M to \$15M for Storm Water Management facilities, NPDES efforts and drainage improvement projects statewide for highways. Karuna was born and raised in India however, unlike Rick she actually likes the snow.

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Calendar of Events

AASHTO TCHH Fall Meeting

August 31, 2010
Park City, Utah
In Conjunction with the National Hydraulic
Engineering Conference
(Invitation Only)

2010 National Hydraulic Engineering Conference

August 31 – September 3, 2010
Park City, Utah
www.udot.utah.gov/nhec

2010 International Low Impact Development Conference (LID): Redefining Water in the City

April 11 – 14, 2010
San Francisco, California
<http://content.asce.org/conferences/lid10/call.html>

Hydrology Conference 2010: The Changing Physical and Social Environment: Hydrologic Impacts and Feedbacks

October 11 – 13, 2010
San Diego, California
<http://www.hydrologyconference.com/>



This newsletter is published biannually by the AASHTO Technical Committee on Hydrology and Hydraulics. Please send suggestions for articles and comments to: Andrea.Hendrickson@state.mn.us, or call 651-366-4466.

To be added to the mailing list please send your email to Kelley Rehm at: krehm@ashto.org

For more information on the Technical Committee on Hydrology and Hydraulics see: <http://design.transportation.org>

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