

Meeting Minutes

HYATT REGENCY HOTEL, Minneapolis, MN., *July 30, 2000*

In Attendance

Devah Borah*, Illinois State Water Survey | Adnan Alsaffar, EWRI | Tai Bui, Weslake, Inc. | David Williams, West Consultants | Panos Diplas*, Chair, Virginia Tech | Selena Forman, West Consultants | John Gulliver, University of Minnesota | Earl Hayter*, USEPA Research Exposure Laboratory | Miki Hondzo, University of Minnesota | Chris Katopodis, Freshwater Institute | Paul Liu., Chairperson wavelets task committee (hydromechanics) | James MacBroom, Millone & MacBroom Inc. | Vincent Neary*, Secretary, Tennessee Tech | C.Y. Wei, Harza Engineering Company

*Control Members

Agenda

The meeting agenda was e-mailed to members on July 21, 2000.

Cooperation Agreement with IAHR (Adnan)

Adnan encouraged us to form alliances with other organizations. He informed us that IAHR and EWRI have drafted an agreement for cooperation in conferences and symposium, publications, financial and technical activities. EWRI wants to encourage direct interaction with IAHR technical groups like Ecohydraulics.

The Environmental Hydraulics Technical Committee (EHTC) may want to sponsor session at upcoming IAHR Congress 2001, Beijing or Hydroinformatics 2002 in Wales.

Background/Introduction (Panos)

With the creation of EWRI, technical activities within ASCE were scrutinized and some technical committees were terminated. There was talk of disbanding the EHTC due to lower than expected performance in the previous several years. The new EHTC is being reestablished based on a proposal that was submitted to EWRI. Of course, given the recent scrutiny, there is pressure to convince EWRI that reestablishment of EHTC is justified. It is therefore important to increase the activity level as much as possible in the upcoming year. That should include proposals for new

task committees, participation in society activities (such as sessions in conferences), and involvement of new members. An article summarizing this meeting will be written for the ASCE NEWS and EWRI newsletter.

Nomination of New Members

Panos motioned to initiate three new members, James MacBroom, Kit Yin Ng, and Chris Katopodis. Resumes were circulated. The motion was seconded and approved by the rest of the committee.

James MacBroom is a vice-president of Milone & MacBroom, Inc. and is responsible for his firm's environmental and water resource projects. James would like to help increase public and professional awareness of inter-disciplinary linkages necessary for watershed and surface water management. Specific areas of interest include the effect of land use on downstream hydrology and ecosystems, hydraulic analyses of tidal wetland and rivers, in-stream flows, river fish passage, removal of obsolete or abandoned dams, environmental impacts of sediment, restoration of urban or degraded river channels and dechannelization.

Kit Yin Ng is a senior technical specialist with Bechtel Power Corporation. Kit is interested in promoting the advancement of tools and techniques in the field of environmental hydraulics. Kit conducts and manages designs and modeling studies in the hydrology and hydraulic areas including river and floodplain hydraulics, sediment transport in rivers, urban stormwater drainage design and flood studies, leachate transport and sediment transport in coastal waters.

Chris Katopodis is with the Freshwater Institute of Canada. He has been dealing with problems related to fish habitat and the design of fish-friendly hydraulic structures. He is currently a member of the ecohydraulics group of IAHR and has been involved with the organization of the Ecohydraulics Symposia, organized by this group. Chris has participated in the fisheries society and has interacted with biologists and ecologists. He is interested in promoting interaction with IAHR and other societies, such as biologists, that, traditionally, do not collaborate with engineers. The EWRI structure is particularly suitable, and strongly supports such interaction.

Guidelines for ASCE/EWRI Technical Committees:

Membership. New members should serve one year as corresponding members before becoming eligible to serve as control members. Eligible members must submit an application form with an attached resume. The form can be obtained from the following website

<http://www.asce.org/peta/tech/pdf/techcommfrm.pdf> There is no limit to the number of control

members in the TC. However, the number has to be justified in the budget submitted by September 2000.

Officers. The following three officer positions exist: past chair, chair, and vice-chair. The responsibilities of secretary should be given to the vice-chair. EHTC presently has no past chair so we will still have a secretary position. However, we will drop the secretary position after our first active year. All officers should commit to two years service.

Former Hydromechanics TC

The Hydromechanics TC was dissolved during the establishment of EWRI. Initially, it was suggested that members and activities of that TC be incorporated within the Environmental Hydraulics TC. This is rather unclear at this point as is expected to be resolved within the next few months.

Paul Liu, Chair of Task Committee on Application of Wavelet Transform to Hydrodynamics Study, formerly under the Hydromechanics TC, joined our meeting and provided us with an update of the recent activities of this TC and its future plans.

Forum Article Discussion

The JHE forum article that appeared (*JHE, Vol 126, No. 5, pp 320-321*) was intended to generate some discussion and interest about the EHTC and its objectives. It was suggested that we write a follow-up article based on feedback from the JHE article. Discussion on the forum article is open until October 1, 2000.

The follow-up forum article should refine the Figure 1 schematic and summarize planned activities that we will be pursuing with current members. Chris and Selena suggested publishing another forum article in scientific journal with larger multi-disciplinary audience. Publications suggested include: Science, Environmental Science and Technology, Nature, or a Fisheries/Ecology Journal/Magazine. We may want to invite a similar article written by non-engineers to be published in JHE.

What is Environmental Hydraulics?

Some discussion ensued on how we should define environmental hydraulics. Note that the EHTC was previously the hydrologic transport and dispersion technical committee. Having such a broad scope, we could have difficulty focusing on research and educational activities. Our interests

already overlap with the ASCE/EWRI sedimentation technical committee, ASCE/EWRI's river restoration TC, and IAHR's ecohydraulics group. What we do also depends on the interest of our members. Membership interest will probably govern what we do. Nevertheless, we do need to target topics of research and education that, as the researchers and practitioners, we feel are most pressing.

It could be argued that environmental hydraulics includes both fluvial and ecohydraulics as subsets. Ecohydraulics could also be thought of as the "new" environmental hydraulics that is extended to include the ecosystem, and as a result a broader (more holistic) emphasis on the welfare of the ecosystem and not just water quality.

It was noted that IAHR divides its technical activities into the following sections: river hydraulics, fluvial hydraulics and ecohydraulics. In contrast, the EHTC is under the ASCE/EWRI's Hydraulics and Waterways Technical Council administered by Richard French. This Technical Council currently includes the following TCs: computational hydraulics, environmental hydraulics, hydraulic measurements, hydraulic structures, river restoration, sedimentation, tidal hydraulics.

Future Technical Activities

Outreach to NonEngineers

It was generally agreed that a unique aspect of our committee should be outreach to non-engineering scientists. Specifically establishing contacts with other professional societies is important. This is an advantage to the newly formed EWRI.

We need to find out more about EWRI's efforts in attracting non-engineering professional societies and members, other than IAHR. In the EWRI newsletter, Currents, (Vol 1 No. 1, September 1999) it was stated " Work is underway to establish working relationships with related professional organizations, and we are planning a membership drive to attract other environmental and water resource professionals, and non-engineers to EWRI." Some organizations that we should consider include Canadian Society of Civil Engineers (CSCE), AGU, AWRA/CWRA, and American Society of Agricultural Engineers (ASAE), International Assoc. of Water Research (contact Tony Milburn).

Organizing technical sessions at ASCE/EWRI's Orlando Conference

Panos believes that one of our first activities should be organizing technical sessions at the next ASCE World Water and Environmental Resources Conference in Orlando, May 20-24, 2001 (<http://www.asce.org/conferences/wwercongress/index.html>).

Organizing Joint Conference Activities with other Professional Societies

Chris suggested that we help plan sessions with the upcoming IAHR Ecohydraulics TC in March 2002 at Cape Town, South Africa (<http://www.southernwaters.co.za/conference/>). He passed out conference brochures. We also may want to organize a specific topic at the annual American Fisheries Society (AFS) conference. There is presently no web site for next years AFS meeting. For this year's meeting see <http://www.fisheries.org/annual2000/index.htm>.

It was discovered after the meeting that an international symposium on Environmental Hydraulics with a Special Theme Urban Fluid Dynamics is being organized by IAHR for December 5-8, 2001 at Arizona State University, Tempe, Arizona. For details see the web site www.eas.asu.edu/iseh2001.

Panel Discussion

It was suggested that we may want to have a panel discussion similar to one organized by the River Restoration TC at one of their conferences, "What is river restoration?" The topic might be titled, "New Challenges in Environmental Hydraulics?"

Task Committee

A proposal for a new task committee "CFD-Based Flow Analysis for Environmental Problems" prepared by Fotis Sotiropoulos and C.Y. Wei was submitted to EWRI.

Future Task Committees List

The following is a tentative list of task committees suggested by members present:

Evaluation of modeling tools (Devah and Selena) | Interaction/Exchanges between surface and groundwater (Earl, consult Paul Mathisen) | Sediment water interface (Selena) | Scale issues in environmental hydraulics (Miki) | Water treatment through wetlands (John Gulliver) | Fish friendly hydraulic structures (C.Y. Wei, consult Larry Weber) | Vegetation effects in aquatic and riparian ecosystems (Vince) | Estuary processes (Selena, consult Steve Monosmith) | Microstructure measurements in the aquatic environment (Miki) | Ecological impacts of dam removal (James MacBroom) | Determination of Total Maximum Daily Loads (Vince)

It is very important to aggressively pursue the preparation of proposals for several of these task committees.

The following are suggested TC topics over the last ten years taken from the last EHTC meeting minutes:

Selective withdrawal temperature control structures | Temperature stratification and density currents in reservoirs | Estuarine transport processes (tidal mixing and dispersion) Estuarine water quality modeling | Models of hydrologic transport and dispersion (review articles) | Real-time models for spills and accidental discharges | Design and performance of jets and plumes | Transport of contaminants in large lakes | Album (i.e. illustrations) of environmental transport phenomena | Sediment-adsorbed contaminant transport | Exchange at the sediment-water interface | Ocean outfall transport and dispersion | Field measurements of mixing and transport | Reaeration and artificial aeration/mixing techniques | Transport modeling of oil spills | Combined sewer and storm water transport modeling | Gas transfer at hydraulic structures

The following are suggested TC topics from the last EHTC meeting held August 1998:

Environmental effects of water management | Wastewater discharge effects | Streambed erosion problems caused by development | Sediment transport problems caused by dredging or erosion | Hydrodynamics of lakes, rivers, reservoirs and estuaries | Transport and fate of pollutants from point and non-point sources | Integration of watershed and aquatic systems | Effects of global climate change and variations on hydraulic facilities

It is interesting in comparing our list to previous years: The new list emphasizes the ecosystem and aquatic organisms in the water environment. The old list emphasizes transport and mixing.

Other Activities

Traditionally technical committees nominate colleagues for ASCE/EWRI awards. It was suggested, and our TC approved, to nominate Jacob Odgaard of the Iowa Inst. of Hydraulic Research, University of Iowa for the Hydraulic Structures Medal. By the way, our present member C.Y. Wei is this year's recipient. Congratulations C.Y.! Jacob Odgaard has done considerable and pioneering work with fish bypass systems, fish screens, sediment control structures at river bends, bridge crossings and lateral river intakes using submerged vanes (commonly known as Iowa Vanes). The TC

Web Page for EHTC (not discussed)

We may want to consider developing a web site for our technical committee.

Action Items

Vince and Panos will write an article for the ASCE NEWS and the EWRI newsletter.

Vince will contact EWRI about efforts establishing working relationships with non-engineering professionals and professional societies.

Panos and Vince will contact the organizing committee for the World Water and Environmental Resources Conference in Orlando, May 20-24, 2001

(<http://www.asce.org/conferences/wwercongress/index.html>).

Vince and Panos will work on Jacob Odgaard's nomination application for the Hydraulic Structures Medal.

James MacBroom volunteered to contact the river restoration TC.

James and Vince will initiate contact with members of the American Fisheries Society (AFS).

Miki will explore the establishment of a task committee dealing with the role of scales (length and time) in environmental processes, with emphasis on microscale phenomena.

Chris will act as liaison between EHTC and IAHR's Ecohydraulics Technical Section.