AGENDA

Monday April 26, 2004

8:00 am	Raja Veeramachaneni – Call Task Force Meeting to Order and Introductions
8:10 am – 8:30 am	Welcome – Brooks Booher
8:30am – 9:30 am	Jorge Pagan – FHWA Perspective
9:30am – 10:30 am	Task Force - Status of MDM and HDG Publications
10:30 am – 10:45 am	Break
10:45 am – 11:15 pm	Tim Hess – NCHRP Project Update
11:15 am – 12:00 pm	Taskforce – NCHRP Project Planning and Problem Statements
12:00 pm – 1:00 pm	Lunch

Discussion of Changes to MDM & HDG - Chapter Chairs

1:00 pm – 2:00 pm	General Planning Discussion for Future MDM & HDG
2:00 pm – 2:15 pm	Raja Veeramachaneni – MDM Chapter 1, Introduction
2:15 pm – 2:30 pm	Jim Richardson – MDM Chapter 2, Legal Aspects
2:30 pm – 2:45 pm	Break
2:45 pm – 3:00 pm	New Assignment – MDM Chapter 3, Policy
3:00 pm – 3:30 pm	Glenn DeCou – MDM Chapter 4, Documentation
3:30 pm – 4:00 pm	Mike Fazio – MDM Chapter 5, Planning and Location
4:00 pm – 4:30 pm	Lotwick Reese – MDM Chapter 6, Data Collection
4:30 pm – 5:00 pm	New Assignment – MDM Chapter 7, HDG Chapter 2 — Hydrology

Tuesday, April 27, 2004

8:00 am – 8:30 am	Brooks Booher – MDM Chapter 8, Channels

8:30 am – 9:00 am	Te Ngo – MDM Chapter 9, Culverts
9:00 am – 9:30 am	Roy Mills – MDM Chapter 10, Bridges
9:30 am – 10:00 am	Barry Newman – MDM Chapter 11, Energy Dissipators
10:00 am – 10:15 am	Break
10:15 am – 10:45 am	Merril Dougherty – MDM Chapter 12, Storage Facilities
10:45 am – 11:30 am	Bill Bailey – MDM Chapter 13, Storm Drainage Systems
11:30 am – 12:00 pm	Dan Ghere – MDM Chapter 14, Pump Stations
12:00 pm – 1:00 pm	Lunch
1:00 pm – 1:30pm	Mark Miles – MDM Chapter 15, Surface Water Environment
1:30 pm – 2:00 pm	David Henderson – MDM Chapter 16, Erosion And Sediment Control
2:00 pm – 2:30 pm	Barry Newman – MDM Chapter 17, Bank Protection
2:30 pm – 2:45 pm	Break
2:45 pm –3:15 pm	Rick Renna – MDM Chapter 18, Coastal Zone
3:15 pm – 3:45 pm	Te Ngo – MDM Chapter 19, Construction
3:45 pm – 4:15 pm	David Stolpa – MDM Chapter 20, Maintenance
4:15 pm – 4:45 pm	Norman Schips – MDM Glossary

Wednesday, April 28, 2004

8:00 am – 8:30 am	Jim McDonnell – Update of AASHTO Activities
8:30 am – 10:30 am	Technical Presentations (TBD)
10:30 am – 10:45 am	Break
10:45 am – 12:00 am	Raja Veeramachaneni - Task Force Business Meeting
12:00 pm	Raja Veeramachaneni - Adjourn Task Force Meeting

Minutes

WELCOME AND INTRODUCTION:

1. Chairman Raja Veeramachaneni welcomed everyone to Little Rock, AR and asked everyone to introduce him/herself.
2. Brooks Booher welcomed everyone on behalf of the ARDOT. He introduced Mr. Dan Flowers, Director of the Arkansas Highway Commission.
3. Mr. Flowers served as AASHTO president from 1998-99. He recognized the Task Force as one that actually works. He shared a few highlights about Little Rock: lot of development at the East Side of the Arkansas River; President Clinton's Library will open in November '04; 100-year celebration of North Little Rock. Mr. Flowers shared some of the current activities at the Arkansas DOT:
   a. End of ARDOT Interstate system rehabilitation – noted that PA and AR are head to head on this.
   b. State issued bonds for over $1 billion for Interstate work
   c. $16 billion in needs have been identified over the next 10 years for other transportation work – subject to new legislation (Transportation bill) – if it changes, then ARDOT will have approximately $4 billion available for that transportation work.
4. Dave Henderson gave a brief update on the 2004 FHWA National Hydraulic Engineering Conference
   a. FHWA and the NCDOT are hosting the conference
   b. It will be held at the Holiday Inn Sunspree in Asheville, North Carolina from August 31-September 3, 2004.
   c. The hotel telephone number is (828) 254-3211.
   d. Deadline for hotel reservations is July 31, 2004.
   e. The conference will focus on transforming technology and research into practice.
   f. There will be a field trip to the I-26 project and a storm water management facility.

FHWA PERSPECTIVE:

5. Jorge Pagán-Ortiz presented an overview of the FHWA's National Hydraulics program and activities
   a. FHWA's Hydraulics program and activities continues to grow year after year
   b. FHWA National Hydraulics Team very involved with committees (AASHTO TC, TRB), NCHRP panels, and in providing technical assistance and training.
   c. FHWA has been operation on a continuous resolution basis during FY '04.
   d. Office of Bridge Technology's budget for project activities is tied to FHWA's Bridge Program Strategic Plan -- green light to begin funding project activities given during Summer 2004
   e. Funded project activities of national importance as identified by National Hydraulics Team.
   f. Awarded HEC-15 Updates to Kilgore Consulting and Management – Dan Ghere is the Technical Project Manager (TPM)
   g. Currently working on "Request for Proposals" for:
      1. HEC-14 Updates – Cynthia Nurmi is the TPM
      2. HDS-1 Update into a new HDS-7 -- Dr. Larry Arneson is the TPM
      3. HEC-25 Second Edition – Joe Krolak and Dr. Larry Arneson are co-TPM's
      4. HEC-26, Design of Fish Passage for Culverts and Bridges – Bart Bergendahl is the TPM
      5. Plan of Action For Scour Critical Bridges – Cynthia Nurmi is the TPM
   h. Continued funding development of new algorithms for FESWMS 2DH – Dr. Larry Arneson is the TPM
   i. Plan to develop HY-8 graphical user interface – Joe Krolak is the TPM
   j. New NHI training courses initiatives:
      1. NHI 135081, Introduction to Highway Hydraulics Software – course piloted in March '04
      2. NHI 135082, Tidal Hydrology and Hydraulics – RFP to be developed (Joe Krolak will be the TPM)

3. NHI 135083, Tidal Hydrology and Hydraulics Software – RFP to be developed (Dr. Larry Arneson will be the TPM)

k. National Bridge Scour Evaluation Program:
   1. Ninety three percent of the evaluation completed – evaluations to continue until all bridges over waterways are evaluated
   2. Phase III of the program consists in encourage bridge owners to develop a Plan of Action for each scour critical bridge -- FHWA Hydraulics Engineers are available to assist in developing POA's upon request
   3. NBI Database review of relatively new bridges (less or equal to 10 years old) showed inconsistency in bridge coding for Item 113's – 4,159 bridges have been coded "U," and 8,051 bridges have been coded "6."
   4. Bridges with unknown foundations continues to be an issue – FHWA would be planning an "Unknown Foundation Symposium" in Summer 2005.

l. The 2004 FHWA National Hydraulic Engineers Conference (sponsored by FHWA and the NCDOT) will be held in Asheville, NC from August 31-September 3, 2004; primary contacts for this conference are Cynthia Nurmi, FHWA, and Dave Henderson, NCDOT.

AASHTO:

6. Jim McDonnell spoke about AASHTO:
   a. AASHTO hired 4 new engineers, including Ms. Tamara Reid
   b. Ms. Reid will take over Jim's responsibilities on the Technical Committee on Hydrology and Hydraulics. Ms. Reid is AASHTO's program manager of engineering and technical services. She holds a BS from Florida State University and an MBA. She previously worked for a consultant firm in Chicago and her specialty is on structures.
   c. Noted that legislation is still a big issue. The Senate and House will be going to a conference. AASHTO will be analyzing the current issues in the proposed legislation. Both versions of proposed legislation add preventive maintenance and scour.
   d. Noted that there is a high profile problem with the escalating steel prices (especially in the State of WA). He indicated that AASHTO and FHWA have been having meetings after meetings to try to resolve this issue.
   e. Noted that both the MDM and HDG have been approved by the Subcommittee on Design and by the Standing Committee on Highways. He noted that AASHTO caught a few mistakes.
   f. Indicated that the Task Force is now officially a Technical Committee. He emphasized that while there the Task Force has 6 days available for technical committee meetings, it can ask for more days. He indicated that he does not believe there will be a problem in approving more days.
   g. Indicated that proposals for research projects of $100k or less (funds for 20-7 projects) are due May 1st.
   h. With regards to whether or not the Technical Committee Meetings would qualify for continuous education units, Jim indicated that Marty Vacalli of AASHTO would have to be contacted about this.
   i. Indicated that he is not sure when the MDM and the HDG would be available from AASHTO, yet as there are some issues with the quality of some figures. In addition, there are some issues with Chapter 15, which deals with the selection of consultants.
   j. Chair Veeramachaneni indicated that any changes to the MDM and/or HDM should be sent directly to Jim McDonnell.

NCHRP:

7. Tim Hess, NCHRP Program Officer who handles hydraulics, geotechnical and construction engineering, provided an update of NCHRP project activities related to hydraulics (**bolded** material below has been updated; other has been provided at earlier meetings):

a. Background - TRB is a unit of the National Academy of Sciences, which is the operating arm for the National Academies. TRB has 5 Divisions. The two divisions of most interest to the task force are Division A Technical Activities and Division D Cooperative Research Council. NCHRP started in 1962 and the Transit CRP started in 1992. NCHRP has 13 FTEs that administers **160** active panels with **1100** panel members. The CRP homepage is trb.org.
   1. Financial support is from State DOTs, which provide a 5.5% contribution from their State Planning and Research Federal-aid funds. The contribution is voluntary and comes through FHWA. The funding was $3.5M in 1968, $8.5M in 1991, $15.3M in 1992 and $17.7M in 1997. **TEA21 increased funding to $31 in 2004**.
   2. Division B synthesis projects are provided funds by SCOR through project 20-5 which is managed by Jon Williams (JWilliams@nas.edu).

b. Problem Statements - Ideas come from States, AASHTO and FHWA.
   1. TRB committees can submit statements through AASHTO subcommittees.
   2. **Problem statements must be submitted by September 15** in order to be considered at the March SCOR meeting. Both Research Advisory Committee and SCOR rank projects and then a combined ranking is prepared.
   3. **Most awards go to consultants or universities**. About 90% of projects are published.
   4. **Problem statements should be submitted via e-mail to nchrp@nas.edu**.

c. NCHRP Project Status Reports for Hydrology and Hydraulics (updated 5/13/03). Current status can be found at **http://www4.trb.org/trb/crp.nsf/NCHRP+projects**
   1. 21-5(2) Unknown Foundation Instrumentation - research has stopped, final report is complete and will not be printed. Report will be made available as an agency report.
   2. 24-7(2) Countermeasures - $450k Ayres Associates will include partnering with states for field verification. Phase 1 report is available for loan. Phase 2 guidelines started 4/01 for 3 years to 10/2004. **Panel requested and got approval for $350k for continuation of this project. Estimate completion 10/05.**
   3. 24-14 Scour at Contracted Bridge Sites - $500k Art Parola/Dave Mueller - interim report, complete June 2003. USGS is matching with $500k. **Final report submitted in 6/2004.**
   4. 24-15 Bridge Scour in Cohesive Materials - $350k TX A&M. **The project is completed. Final report will be published in NCHRP Report Series in 07/2004. The panel received $400k in continuation of funds to study abutment scour in cohesive soils.**
   5. 24-16 Channel Migration - $550k Ayres, Pete Lagasse. Project completed. **Final report available in 8/2004.**
   6. 25-12 Wet Detention Pond Research - $580k by David Young of WSU. **Final report will not be published. Report available for loan.**
   7. 21-07 Development of Portable Scour Monitoring Equipment - $300k Ayres, Jim Schall, started 4/00 and is complete. **Final report is available from NCHRP (Report 515).**
   8. 24-8, Scour at Bridge Foundations Research Needs - FY 98 -- three projects were funded from list: 24-14, 24-15 and 24-16. No projects funded in FY 99 or 2000, and 2 in FY 2001, 1 in FY 2002, 2 in 2003, and 1 in 2004.
   9. 15-23 Technical support for MDM and HDG - $283k, $79k added in FY 2003. **Project is completed.**
   10. 24-18 Countermeasures to Protect Bridge Abutments - #12 on 24-8, $450k, Brian Barkdoll, Michigan Tech University, August 2003. **Estimated completion is Fall '05.**
   11. 24-19 Environmentally Sensitive (Non-structural) Channel & Bank Protection - $350k, John McCullah, Redding, CA -- awarded 6/2001, draft final report and target completion in 5/2004.
   12. 24-20 Prediction of Scour at Bridge Abutments - $500k, contract awarded 4/2002 to Robert Ettama, University of Iowa, complete 10/2005. Project is limited to sand material.
   13. 20-07(146) Development of Software Verification Protocol for Hydrologic and Hydraulic

Models - $100k, panel members are: Saeed (chair), Barry, Te, Mark, Bill and Joe Krolak. Awarded to Univ. of SC for $100k. **Estimated completion is 07/2005.**

14. 15-24 Hydraulic Loss Coefficients for Culverts (FY 2003) - $325K project awarded to Utah State Univ. and has a 2006 completion.
15. 24-23 Riprap Design Criteria, Specifications, and Quality Control (FY 2003) - $350k project awarded to Ayres Associates with a 2006 completion.
16. 24-24 Criteria for Selecting Hydraulic Models (1D/2D) (FY 2004). **Estimated award in 06/2004.**
17. 24-25 Risk-based Guidelines for Determining the Need for Investigation of Unknown Bridge Foundations (FY 2004). **Estimated award is 06/2004.**
18. 24-26 Effects of Debris on Pier Scour at Bridges (FY 2004). Funding increased from $300k to $600k to cover for research test at laboratory and report. **Estimated award is 06/2004.**
19. 20-07-(162), Guidelines for the Correlation of Test Results from Bench-Scale and Large-Scale Testing on Rolled Erosion Control Products. Awarded to CSU, $50k.
20. 20-07(178), Evaluation and Update of NCHRP 24-08: Scour at Bridge Foundations-Research Needs Study. Ayres Associates, 25k – this project will help to update 24-08:
    - 24-08 -- the contractor compiled scour research from all over the World. The contractor identified 39 problem statements, which were then prioritized. Priorities have been pretty much followed during the last several years to conduct research on stream stability and scour at highway bridges.
    - 20-07(178) will consist on assessing the current knowledge in the areas of stream stability and scour technology through the conduct of a literature review, identify gaps in these areas, assess where research has taken us this far. An expert panel will be assembled to work in this scope. Funds approved for Phase I were $25K.
21. 24-27, Recommendations for the Adoption of Bridge Scour Research by State Highway Agencies. Project funded for 2005 at $250k. A panel of experts will be selected to identify needs to fill the gaps and advance current technology on stream stability and scour, and make recommendations to AASHTO Technical Committee on Hydrology and Hydraulics.

d. NCHRP 2005 Program (voted in March 2004 during the Standing Committee on Research Meeting):
    1. $53.5M (139 items) in new project requests -- $12.7M (35 items) funded or 25% of requests.
    2. $12.83M (29 items) in continuations of existing projects requested -- $25.4M (25 items) funded or 86% of requests.
    3. $66.4 M (168 items) total requested -- $25.1M (60 items) total funded or 38% of requests.
    4. Committees that can submit problem statements include:
        - State DOTs that are AASHTO Members
        - AASHTO Committees
        - FHWA
        - NCHRP Panels – can request additional funds for an ongoing project.
    5. Last day for submitting problem statements for the FY 2006 program is **September 15, 2004**.
    6. Tim Hess suggested TC should come up with the 3 or 4 top problem statements.
    7. Barry Newman recalled seen an e-mail suggesting that a problem statement be developed for the two levels of documents that the TC would like to do. Tim encouraged the TC to ask for funds to help on this activity. Larry Arneson suggested another 20-07 project to hire an editor to assist the TC with the development of the new documents. In addition, he encouraged the TC to investigate if another 20-07 project could be structured for developing a web-based national survey that would give a general consensus on criteria being used for major areas. It was discussed that if the TC defines the questions, the survey could be posted in the AASHTO website.
    8. The TC members voted on the priorities of its problem statements in the following order

(Total voting members = 17):

- Crucial Nationwide Hydrologic/Environmental Data Development (6 votes)
- Effects if Fractured or Degradable Rock on Pier Scour at Bridges (4 votes)
- Procedure for Determination of the Joint Probability of Design Peak Flows at Confluences (4 votes)
- Time Rate of Scour at Wide and Skewed Bridge Piers. (3 votes)

9. Dave Stolpa recommended the TC should communicate with the TRB Committee AFB60 on Hydrology, Hydraulics and Water Quality about their problem statements. He also suggested that the TC should take a more systematic approach for planning our research. While a mechanism to accomplish this has not been determined, it could be initiated in the form of a needs assessment study similar to that done for scour years ago under NCHRP 24-08. A broad assessment will also allow the TC to use any developed needs list to sort issues as to whether they are a matter for state-specific research, regional (which could be handled thru a pool study), or nationwide. Coastal engineering issues, as an example, are not issues for the inland states, and therefore, may be better candidates for regional pool studies whereas scour is a nationwide concern. A systematic approach would also give the TC a platform on which to better coordinate efforts between the TRB Committee AFB60 and our TC. Categories that could be use to sort issues could be: Hydrology, Hydraulics, Stormwater (quality and quantity management), Coastal and Stream Migration and Scour.
10. Tim Hess suggested the TC should look into the different areas that we typically work on (i.e., water quality, hydraulics, hydrology, bridge scour, coastal engineering and environment) to identify research needs. Barry Newman said that if we do a similar 20-07 project for each of these categories, then it would be difficult to address all of them in a 3-day session without a facilitator. Dave Stolpa suggested that we do an outline, present all the issues on a table and identify whether they are regional issues or national issues. Raja Veeramachaneni agreed that the TC should follow up on these ideas, particularly that of requesting a facilitator to help the TC develop a strategic list of topics. Rick Renna recommended a different facilitator for each technical topic. He also suggested the TC be divided into focus groups for each of these technical areas. Then, each group could focus on its needs and would work in developing a strategic plan for each focus area. Raja Veeramachaneni also questioned what areas should be investigated in the Environmental Technical discipline and what are the environmental issues that are crossing into our hydraulics issues. The TC decided to reduce the focus areas to: water quality, hydrology, hydraulics (culvert hydraulics, bridge scour -- including rock scour, and bridge hydraulics), and coastal engineering. **A volunteer is needed to write a problem statement on this item**.

DISCUSSION ON CHANGES TO THE MDM AND HDG:

8. The TC would like to leave the HDG on its current form (as per minutes from Cody, WY)
9. MDM would be split into 3-levels (as per minutes from Cody, WY)
   a. Remove double parenthesis means that we will have to document the reason for doing so
      1. Plus side is that the action will be more defensible
      2. No other AASHTO publication has double parenthesis
      3. There might be a lot of other considerations in chapters that may need a commentary for justifying a number change within the parenthesis.
      4. The TC should focus during the next few years in discussing and agreeing on changes in criteria to be used for taking away double parenthesis.
      5. There may be a need to have some hard language in the policy level and probably some procedures, too.
   b. Should it be a specification type of style?
   c. Should we combine levels 1 and 2 into one document?

d. Level 3 will be the most current level.
e. AASHTO will require that any new documents be in dual units.
f. Level of material when comparing Level 1 document with Level 2 document will be 25/75.
g. Policy is difficult to find in the MDM.
h. Policy manual should include standards, criteria for design
i. Procedures manual should be the "how to" manual.
j. A discussion on exceptions to the policy manual was tabled.
k. The goal should be do make the MDM more user friendly.
l. A "crisp" distinction between policy and guidance has worked well for FLDOT.
m. Every chapter chair should start working on identifying what is policy in their respective chapters. This will be a good opportunity for the AASHTO TC to come up with specific policy on hydraulics engineering.
n. The members of the TC voted in favor of taking the policy sections out of the MDM. The TC will decide later on if policy should reside in a separate chapter. **It was agreed that the TC would start working on separating policy from the chapters in the MDM during the Fall 2004 meeting in Austin, Texas**.
o. Tim Hess reminded the TC that NCHRP cannot develop policy – others can (i.e., TC on hydrology and hydraulics)
p. Dr. Hani Farghaly stated that gaps in policy would need to be addressed once the policy manual is developed, which should be the opportunity to identify policy and criteria not covered.
q. Te Ngo suggested that policy needs to be supported with a commentary that highlights what to do when a criteria does not apply.

MDM CHAPTER DISCUSSION:

10. Chapter 1, Introduction (Chair: Barry Newman) – no action
11. Chapter 2, Legal Aspects (Chair: James Richardson):
    a. This chapter should include information for consultants on issues such as awareness of legal remedies, condemnations, etc.
    b. This chapter is almost identical to Chapter 5 of the HDG.
    c. It was discussed that one possible reason for this duplication is that there would be a copyright issue.
    d. This chapter is very informative and important.
    e. This chapter could be the basis for beginning of policy in Hydraulics.
    f. It was decided to keep this chapter as it is, but most likely it will go to the level 1 document.
12. Chapter 3, Policy (Chair: Norman Schips):
    a. Keep as introductory chapter (close to chapter 2).
    b. This chapter could serve as a good introduction to the policy manual.
    c. Raja Veeramachaneni indicated that is there are items in this chapter that are not impacting hydraulics, then they should be taken out. He further stated that this chapter should be stripped to essential (relevant) information to hydraulics. Raja Veeramachaneni also questioned if a level 1 document should be a manual containing policy, criteria and design standards.
    d. Barry Newman stated that the content of this manual (Level 1) should be considered to be the authoritative reference in drainage.
    e. **The definition of policy was briefly discussed for better understand. It was decided that policy is a definite course of action or method of action selected to guide and determine present and future decisions**.
    f. **The definition of design criteria was also discussed for better understanding. Design criteria are the standards by which a policy is implemented or placed in action**.

13. Chapter 4, Documentation (Chair: Glenn DeCou):
    a. The TC discussed if it has a role in provided guidance to designers as for the documentation that should be stored. It was questioned if this should be AASHTO guidance. It was further discussed if the content of this chapter should be policy or guidance. There was no resolution of the items discussed on this chapter.
14. Chapter 5, Planning and Location (Chair: Mike Fazio):
    a. California will come with recommendations on this chapter.
15. Chapter 6, Data Collection (Chair: Lotwick Reese):
16. The introduction to this chapter provides good policy. Also, section 6.3.1 presents good policy for compiling data. Raja Veeramachaneni indicated that in the policy section of this chapter, we could also include that considerations can be given to future land use. He further stated on the subject of roughness coefficients that while it is policy, this topic (roughness coefficients) does not correspond to this chapter.
17. Chapter 7, Hydrology (Chair: Rae Van Hoven):
    a. Sections 7.1 and 7.6.3 are all policy
    b. The frequency table (Table 7-A-1) referenced in section 7.6.4 is also policy.
    c. Mark Miles suggested that one should use his/her own available tools for your hydrologic investigation. The new chair of the hydrology chapter to review it and provide comments to the TC Chair on policy and procedures.
    d. Raja Veeramachaneni stated that the issue on drainage area for the Rational Equation would have to be addressed. He also suggested that another technical topic that should be considered for this chapter is "Wetland Hydrology." However, he recognized that this is a technical area in which we have marginal expertise. He also questioned if this technical topic should be included in the policy manual (Level 1) or in the procedure manual (Level 2) – Te Ngo suggested to cover it on the Level 2. Barry Newman suggested that if this technical area is added to this chapter, it would be a small procedure on a Level 2 document.
    e. Raja Veeramachaneni suggested that the SES method is not good for low (base) flow estimates. Also, he suggested that the SES method is more appropriate for peak flow estimates.
18. Chapter 8, Channels (Chair: Brooks Booher):
    a. It was recommended to change chapter title to "Channel Hydraulics"
    b. Policy issues such as "n" values are based on decisions made by the TC -- if manufactures propose something different, the TC has the ultimate decision on what values to use or recommend.
    c. Rick Renna indicated that FLDOT made the decision of using "n" values on their policy manual because it is such a critical topic (high profile and controversial) that they decided to go this way.
    d. Mark Miles suggested the approach of designing for the "n" value and then apply a multiplier for a future condition (i.e., 15 years). Raja Veeramachaneni indicated that it would be tough to come up with a multiplier.
    e. Raja Veeramachaneni suggested that we recommend the minimum "n" value. Lotwick Reese agreed with Rajas's suggestion.
    f. The TC discussed the topic of Stream Morphology (Section 8.7) – the general consensus is that there is a need for policy that would address that stream morphology and stream channel migration shall be investigated as it could potentially impact highways, bridges, etc.
19. Chapter 9, Culverts (Chair: Te Ngo):
    a. With regards to Corrugated Polyethylene Smooth pipes – the table recommends 0.009-0.015; however, several State DOTs don't use the lower range (0.009). It was questioned the need (benefit) of showing a minimum-maximum value. Te Ngo suggested using an "n" value that represents the worse case scenario. Raja Veeramachaneni recommended leaving the Manning's "n" for culverts in the policy manual (Level 1). It was also suggested that nomographs not be included in the procedures manual (Level 2).

b. Cynthia Nurmi reminded the TC that the results of new research efforts should be incorporated into the new documents (Levels 1 and 2).
c. Culvert shapes (oval and elliptical) were discussed and their geometry was clarified. The TC agreed that an oval pipe is not a commonly used shape, whereas is more common to see elliptical pipes.
d. Raja Veeramachaneni indicated that there is a need to incorporate safety features in a policy section of this chapter.
e. Te Ngo will be looking into Appendix 9-F (Broken-Back Culverts) and make recommendations to the TC Chair to enhance its design procedure as it is a very difficult to follow the way is presented.

20. Chapter 10, Bridges (Chair: Roy Mills)
    a. Raja Veeramachaneni questioned who has been using this chapter. Barry Newman questioned the same.
    b. A policy section needs to be developed for this chapter.
    c. Rick Renna proposed adding a discussion on how to deviate from requirements. Raja Veeramachaneni asked Rick Renna to put together a position statement on this subject.
    d. Barry Newman stated that maybe this chapter should be on bridge hydraulics and scour might need to be by itself on a new chapter.
    e. Jorge Pagán recommended that a team (Jorge Pagán, Dr. Larry Arneson and Roy Mills) take a close look at this chapter and come up with recommendations to the TC Chair.
21. Chapter 11, Energy Dissipators (Chair: Barry Newman):
    a. Section 11.3.2 covers policy.
    b. Raja Veeramachaneni indicated that we cannot design energy dissipators without considering the environment – this helps designers in selecting them while considering the ecology and stream environment
    c. Fish passage will be the most common issue when dealing with energy dissipators.
    d. TC needs to determine if design philosophy should be part of the policy manual (Level 1).
22. Chapter 12, Storage Facilities (Chair: Merril Dougherty):
    a. Dr. Hany Farghaly indicated that an erosion control criteria should be considered for this chapter.
    b. Raja Veeramachaneni suggested that there is a need to consider adding a routing procedure. Cynthia Nurmi and Raja Veeramachaneni suggested the need to discuss safety and maintenance criteria. Merril Dougherty stated that INDOT installs fences around their storage facilities for safety reasons; however, locals don't. Raja Veeramachaneni stated that fencing helps on safety, but also keeps maintenance out. He proposed to add a policy section on minimum safety and maintenance requirements to this chapter and the TC agreed with him.
    c. Raja Veeramachaneni also suggested a policy statement on Dam Safety. Cynthia Nurmi agreed with him. She suggested that a policy statement should say that we should comply with state actions (requirements) on dam safety issues.
    d. Raja Veeramachaneni introduced the topic of general context sensitive solutions and asked the members of the TC if this topic should be included in a Level 1 document. The TC responded in a positive manner to add it to policy.
    e. Barry Newman introduced the topic of infiltration as asked the members of the TC if this topic should be included on a Level 1 document. The TC responded on a positive manner to add it to policy.
    f. Barry Newman asked the TC if there are needs for pre-treatment of highway runoff. Rae Van Hoven indicated that NMDOT uses 3-chamber ponds.
    g. Raja Veeramachaneni suggested to rename this chapter. The TC recommended to rename this chapter as follows: "Water Quality and Quantity Management."

h. Cynthia Nurmi asked if this chapter (as well as the other chapters of this Level 1 document) would be reviewed by others. Raja Veeramachaneni replied by saying that the whole Level 1 document will be reviewed by: the TC on Hydrology and Hydraulics, the Subcommittee on Design and the Standing Committee on Highways.

23. Chapter 13, Storm Drainage Systems (Chair: Bill Bailey):
    a. Raja Veeramachaneni proposed a motion to combine chapters 12 and 13. Barry indicated that this chapter (13) is more tuned for the hydraulics of storm drains. Raja Veeramachaneni suggested the chapter chair, Bill Bailey, to discuss issues with his team members regarding policy and procedures. Bill Bailey agreed.
    b. Raja Veeramachaneni asked if bridge spread criteria should be same as that on highways. The TC replied by saying that the criteria should be more stringent for a bridge.
    c. Cynthia Nurmi asked if there is any policy on bridge deck drainage. Raja Veeramachaneni replied that there should be a policy statement on the quality and quantity management chapter about what to do with polluted waters coming off a bridge. He further stated that there in no need to capture water on the bridge unless there is a major environmental concern. The members of the TC feel that polluted water from a highway should be captured before it gets to the bridge.
24. Chapter 14, Pump Stations (Chair: Dan Ghere):
    a. Dan indicated that this is pretty much a straightforward chapter. There is a little bit of policy, which can be taken out. It follows Hec-22 and there is no need to add new material. Section 14.1.2 presents policy.
    b. Barry Newman suggested that none of the policy presented in section 14.1.2 needs to be in double parenthesis.
25. Chapter 15, Surface Water Environment (Chair: Mark Miles):
    a. Raja Veeramachaneni asked who in the TC has been using this chapter.
    b. Mark proposed an outline that would show: introduction, policy, and regulations. He indicated that policy is spread out throughout this chapter.
    c. Mark Miles indicated on the subject of fish passage that, first of all, this is not the daily do for a hydraulics engineer; however, there is a huge section on the topic of fish ways within this chapter. He further stated that there is guidance out there on this subject (fish ways) and therefore, he suggested eliminating it from this chapter. He explained (for the benefit of the TC members) the function of a fish way – it provides fish access to a culvert from an obstruction. He suggested that we should refer any inquiries for guidance on the subject of fish ways to the U.S. Fish and Wildlife Department.
    d. Barry Newman asked the TC what should be done with the wetlands section of this chapter. Also, he questioned what is the intent of this chapter. Raja Veeramachaneni replied that its use is to give guidance on environmentally sensitive issues. Raja questioned is this chapter should be used to deal with the extraordinary. Mark replied by saying that it should be more of a discussion on a particular sensitive issue and do not get into a procedure. It is basically an aid to help to identify issues.
    e. Raja asked the TC is we should advocate for integrating environmental protection into design. Barry Newman replied by saying that we are authorized to do what we are required to do by the regulations.
    f. The TC agreed that this chapter should be trimmed.
    g. Raja Veeramachaneni said that the TC needs to reach a general consensus of what this chapter does for one. He also asked if we should keep the wetland section in it.
    h. Mark Miles suggested that if we keep this chapter, then we should have a chapter by itself on wetlands, which would then combine wetland issues discussed in other chapters.

i. Raja Veeramachaneni stated that based on this discussion, we should have a wetland chapter on policy and procedures. He suggested that we should brainstorm about what should be our policy on wetlands. He indicated that NPDES covers such a wide area, including public outreach. He suggested that the TC ask FHWA environmental section to review this chapter. Mark Miles suggested that the TC should wait until the chapter is in reasonable shape before going to FHWA. Raja Veeramachaneni indicated that he is confident that we will get a good review from the MDSHA on this chapter. Also, he said that there is a technical committee on environment, but they don't cover the technical details on this chapter -- they are mostly involved on landscaping issues.

26. Chapter 16, Erosion and Sediment Control (Chair: David Henderson):
    a. Raja Veeramachaneni indicated that AASHTO's Hydraulic Design Guidelines is the operating guideline on this topic. He asked the TC if we want to take a strong approach on how to do erosion and sediment control during construction. David Henderson replied that we need a strong policy statement on this subject matter. Raja Veeramachaneni asked if there is a need to consider drainage areas and flow patterns in defining sediment control. He further said that AASTO talks about this, but from a policy point of view, he suggests that erosion control devices be defined by terrain and flows. Rae Van Hoven indicated that NMDOT developed a policy manual based on NPDES. Mark Miles indicated that Alaska's policy is to have a sediment and erosion control plan for their projects, which identifies drainage areas, on undisturbed condition, but do not specify a contractor. They are required to review the contractor's proposed erosion and sediment control plans.
    b. Dave Henderson indicated that NCDOT has high standards with requirements, especially for projects on tidal waters.
    c. Raja Veeramachaneni indicated that specific needs for the water would therefore need special considerations.
    d. Dave Henderson indicated that he will add some language to cover higher standards.
27. Chapter 17, Bank Protection (Chair: Barry Newman):
    a. The TC is concerned with the guidance given on section 17.3 with regards to freeboard.
    b. Barry Newman stated that a policy section is needed for this chapter.
    c. Raja Veeramachaneni asked whether this chapter be titled "Channel Bank Protection" or "Bank Protection." He stated that the chapter on "Channels" should actually be a chapter on "Channel Hydraulics." The TC suggested that any material on channel protection from the "Channels" Chapter should be moved to this chapter. It was agreed to rename this chapter to "Channel Stabilization."
28. Chapter 18, Coastal Zone (Chair: Rick Renna):
    a. Rick indicated that fundamental changes to this chapter have been discussed in previous TC meetings. He emphasized that coastal engineers should be doing work in coastal zones. Coastal engineers have been incorporated into FLDOT. He suggested the TC should set the bar on policy and that State DOTs should also be responsible for setting criteria. Rick Renna indicated that FLDOT has not been successful with roadway survivability when they raise the elevation of coastal zone roads. Dave Henderson stated that is cheaper and easier to leave roadway at its existing elevation rather than raise it – after the flood recedes, then we can blade is off and repair it.
    b. Cynthia Nurmi asked if this chapter was designed for bridges rather than roadways in coastal zones. She asked if they should be handled separate. No decision was made.
    c. Mark Miles asked how do we handle a situation where a coastal engineer does a design – how do to have the plans stamped by a professional engineer? Rick Renna stated that he does not know how to handle this, yet; however, he agreed to add language to this chapter that would reflect the need for a professional engineer requirement. He indicated that the Society of Coastal Engineers

have qualifications that have to be passed by its members in order to be accepted in the society.

d. Barry Newman indicated that the legal section in Pennsylvania said that they cannot go to the licensing bureau to do a requirement, say to be a coastal engineer to do coastal engineering work because they cannot screen out people if they have their professional engineering license. He agreed that one ought to practice only in the areas that one is confident.

29. Chapter 19, Construction (Norman Schips):
    a. Raja Veeramachaneni talked about spread during construction and emphasized that it is greatly affected when Jersey barriers are used. He questioned if there this topic should be addressed in this chapter. Te Ngo agreed with Raja. Also, Te Ngo said that another topic that should be addressed in this chapter is temporary stream diversions during construction.
30. Chapter 20, Maintenance (Chair: David Stolpa):
    a. Raja Veeramachaneni asked if maintenance should be a topic of discussion on the procedures manual (Level 2). The TC decided that it should be in both manuals (Levels 1 and 2).

PRESENTATIONS:

31. David Stolpa made a presentation on the collapse of the Eastbound I-20 Bridge over Salt Draw, Texas in February 2004.
    a. The bridge consists of 19 spans at 40’ to 43’ wide; total bridge length is 830’; drilled shafts, 14’ to 20’ deep apparently founded on conglomerates. The channel comes to the bridge at an angle of 45 degrees; channel span is approximately 40’to 43’.
    b. The streambed consists of salty clay soils, highly erodible, and weakly cemented conglomerates (maybe caliche).
    c. About 2/3 of the flow is carried by the overbanks and 1/3 by the channel.
    d. Flow velocity range is from 9 to 12 fps.
    e. When scour was first noticed, it was determined that there was no need for an urgent action; TXDOT did some preventive measures – The East bank of the main channel was protected with a vertical gabion wall (8’ to 10’ high) and the West bank of the main channel with a gabion blanket on a 5:1 slope. A gabion basket weir was built downstream of the bridges.
    f. Maintenance problems were observed during a field inspection in December 2003 (prior to the bridge failure) – erosion was observed at the tip of the gabion blanket on the west channel bank; the bulkhead at the upstream end of the vertical gabion wall was being affected by the flow; channel degradation was observed; and the downstream gabion weir had failed. Recommendations made included: to install a berm at the upper end of the vertical gabion wall and at the upper end of the gabion blanket to avoid floodplain flow to spill over these countermeasures; and to remove the vertical gabion wall from bent 7 as it was noticed that the gabion wall was attached to it. Also, during this visit it was noticed that bent 7 of the Eastbound bridge had rotated into the main channel.
    g. Two spans of the Eastbound bridge collapsed (span over the main channel and the span over the East channel bank. Prior to the collapse, a motorist noticed a bump on the bridge and called the sheriff. The bridge was closed to traffic and a detour route was established. There were no casualties as a result of the collapse of the Eastbound bridge. A traffic accident occurred later on in the detour route and 5 people were killed.
32. Presentation on the Arkansas White Cutoff Update
    a. Goal is to reduce erosion conditions that could affect navigation capabilities in the White River and functionality of the ecosystem in the region.
    b. Key resources at risk – transportation (could loose about 50 percent of navigation capabilities in the White River) and environmental impact.

c. Arkansas River carries more silt loads into the White River, which requires a lot of dredging – the Arkansas River carries more sediment volume than the Mississippi River or the White River.

d. Melinda cutoff, a historic cutoff from the Arkansas River to Owens Lake, has been progressively moving towards the Melinda grade control structures – which has been repaired 4 times over the last 10 years at a cost of more than $3.5 million.
e. Different scenarios of the Arkansas, White and Mississippi Rivers have been modeled – they would like to keep the current scenario – maintain navigation capabilities in the White River while minimizing impact to ecosystem.

BUSINESS MEETING:

33. Fall meeting will be in Austin, Texas from October 4-6, 2004. Reservation should at the Embassy Suites Town Lake by September 12. Their telephone number is 1(800) 362-2779.
34. Registration for the Fall meeting will be $95.00
35. John Boyton retired from Minnesota DOT and has been replaced by Andrea Hendricks, who will be nominated by MNDOT to replace John in the TC.
36. Francis Nishioka retired and has been replaced in the TC by Rae Van Hoven, State Drainage Engineer in New Mexico.
37. Saeed Choudhary, of the Ontario Ministry of Transportation will be replaced in the TC by Dr. Hani Farghaly, who is also with the Ontario Ministry of Transportation. Dr. Farghaly's nomination has been submitted to AASHTO.
38. Raja Veeramachaneni has been promoted to Director, Office of Planning at the Maryland State Highway Administration. He resigned to the chair of the TC as he takes new responsibilities with the MDSHA. He will notify the TC who will be replacing him as soon as he finds it out.
39. Funds:
    a. Available prior to this meeting: $1,453.39
    b. Cash received: $760.00
    c. Checks received: $1,330.00
    d. Total: $3,543.39
    e. After paying expenses for plaques for four members of the TC and cost of the meeting, the net cash available is $1,401.14
40. The TC discussed the topic of having a logo or identifier. The TC is not sure if it can use one. Tamara Reid will check with AASHTO Headquarters to see if the TC can develop and use its own logo/identifier.
41. The TC nominated a new chair and vice-chair for the next 2 years, Barry Newman, PADOT and Dave Henderson, NCDOT.
42. By unanimous decision, Barry Newman was selected new chair of the TC and Dave Henderson was selected vice-chair of the TC.

TC WORK PLAN FOR THE NEXT 5 YEARS (as agreed during the Fall 2003 TC meeting in Cody, WY; modified by Chair Newman for 2004 presentation to SOD at Salt Lake City, Utah):

- 2004 Spring -- Separate MDM into Policy and Procedures
- 2004 Fall – First table readings on Policy outlines and chapters
- 2005 Spring – Table readings of Policy chapters
  -- Request NCHRP 20-07 funding to assist with new MDM -- assistance to begin in 2006
- 2005 Fall – Table reading of Procedures
  2006 Spring

- 2006 Fall – Final table readings of Policy and Procedures
- 2007 Spring – Table reading of HDG Updates
- 2007 Fall – Final review of HDG, Policy, and Procedures

- 2008 Spring – Develop additional Procedures (Level 3); Ballot HDG, Policy, and Procedures
- 2008 Fall – Publish new HDG, Policy, and Procedures; Develop plan for next 5-year update

Every Spring – Review NCHRP research needs/Assign problem statements/Submit by deadlines

TC FUTURE MEETING LOCATIONS:

- 2004 Fall Austin, Texas
- 2005 Spring Charleston, South Carolina
- 2005 Fall Sioux Falls, South Dakota
- 2006 Spring Buffalo, New York

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SPRING 2004 MEETING
LITTLE ROCK, ARKANSAS
APRIL 26-28, 2004

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