

# Hydraulic Manual Update

## An Overview

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# The Big Picture

- The Hydraulic Design Manual is several years old and needs updating.
- Work performed by Consultant – Owen Ayres & Associates, Inc.
- Chapters by Work Authorization
- Worst or most need of updating to be tackled first
- Probably will take multiple contracts (i.e. more than two years)

# Committees

- Five member Executive Committee
  - manage the contract, will have decision making power
- Manual Oversight Committee
  - two Executive Committee members, DHE's, BRG/Geotech, FHWA personnel, Academics

# Executive Committee

- 5 voting members (odd number to avoid tie)
- Representation by regionality and district size (urban/rural)
- Only one member from any District
- Two members from DES/HYD: by definition, HYD is responsible for setting policy and interpreting law.

# Executive Committee

- DES/HYD: Amy Ronnfeldt, HYD head;
- DES/HYD: James Mercier, contract manager
- SJT: Rudy Herrmann
- AUS: Jaime Villena-Morales (primary)  
David Zwernemann (backup)
- FTW: John Terry

# Meetings

1st meeting:

- February 7, 2007
- Executive Committee & Consultant
- Contract kick off

# Meetings

2nd meeting:

- April 23, 2007 by e-mail
- Executive Committee
- Review wording of survey

# Meetings

3rd meeting:

- August 14, 2007
- Executive Committee
- Review results of survey and the proposed structure of the manual.
- Organize order and timing of future WA's.

# Meetings

4th meeting:

- Manual Oversight Committee
- Present results of survey
- Present proposed structure of the manual
- Split into groups by chapter/subject interest

# Survey

- What's good and bad about the existing manual?
- What are the deficiencies and strengths?
- What is expected and how is it perceived?
- This will help define how the manual needs to present Law, Policy, Guidelines and Details.

# Results

- E-mails sent: 2,541
- Respondents who opted out: 83
- Surveys completed:
  - Total: 512 (20.1%)
  - TxDOT employees: 190 (32.5%)

# Results

- 86.7% rate the HDM as *good* to *excellent* in providing procedures recommended by TxDOT.

# Results

- Ironically, 56.8% reported that the manual is *about average* or *worse* when compared to other similar manuals.
  - feeling that the manual is outdated.
  - fails to mention software or offer guidance on how to use standard of practice software.
  - fails to include specific, recent research.

# Results

- 60.8% found the manual successful in making a distinction between policy and guidelines or technical information.
- A number suggested strengthening sections on FEMA compliance and stormwater quality regulations.

# Results

## ■ Hydrology section

- 88.0% said this was the section used most frequently.
- 77.1% said this was why they used the manual.
- 39.7% said this was the most useful section.
- 64.3% said this was the section most in need of revision.

# Results

- Overall style of presentation

- 77.8% found the language and style of writing *often* or *always clear*.
- 49.1% felt the manual had too few examples.

# Tentative recommendations

- Revise the following chapters:
  - 2. Policy and Guidelines
  - 5. Hydrology
  - 6. Hydraulic Principles
  - 7. Channels
  - 8. Culverts
  - 9. Bridges
  - 10. Storm Drains

# Tentative recommendations

- More step-by-step examples
  - show preferred reports of results
  - show presentation of analysis conclusions

# Tentative recommendations

- Should have:
  - extensive table of contents
  - full index
  - a complete list of references

# Tentative recommendations

- Policy chapter should address the full range of issues
  - compliance with FEMA/NFIP
  - compliance with state and federal stormwater quality standards

# Tentative recommendations

- Should call out acceptable software for use in hydrologic and hydraulic design
  - More likely, will be addressed on the website because of changing technology

# Next step

- Next meeting
  - Review proposed structure of the manual.
  - Organize order and timing of future WA's.
  - Set up outline of chapters
- Bring in others for Manual Oversight Committee
  - DHE's, BRG/Geotech, FHWA personnel, Academics
- Split into groups by chapter/subject interest

# Contact Information

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# Questions?



Have a nice day!