

**National Academy of Sciences (NAS)**  
**Committee to Review the Bases for Instream Flow Standards for Rivers in**  
**Texas**

---

October 14, 2003 – NAS Meeting Notes

**I. Gail E. Mallard, Chair, and Stephen Parker, WSTB Director**  
**“Welcome and Introduction to the NRC study”**

The process will include open meetings. There will be two more meetings in Texas – probably one in January in San Antonio and one in April. Most of the meetings will be open to the public with some portions of the meetings closed. NAS follows the Federal Advisory Committee Act (FACA) guidelines for access to public information. They will post meeting information on their website at <http://www.national-academies.org/wstb>. Requests for additional information or other inquiries should be directed to J. Sanders.

**II. Bill Mullican, Texas Water Development Board (TWDB)**  
**“Welcome, introductions, and context of the NRC study”**

Provided an overview of how the three agencies arrived at requesting a review of the Texas Instream Flow Program by the National Academy of Sciences (See Attachment 2).

**III. Presentations from the Texas Tri-Agency Sponsor Group**

**Dr. Barney Austin, TWDB**

Provided an overview of instream flow study elements, agency roles, and priority studies (See Attachment 3). Most of the presentation was on the hydrology and hydraulics (a major component of Instream flow studies) that TWDB will be taking the lead on.

**Committee Questions:**

- ✓ How is bank storage and surface-water/groundwater interaction handled? Site-by-site basis.
- ✓ Are you asking committee to make specific recommendations for calculations? Yes
- ✓ Note that the Colorado River is not on list of priority studies but you will be revisiting. Can we get a copy of the original study? Yes

**Todd Chenoweth, Texas Commission on Environmental Quality (TCEQ)**

Provided an overview of TCEQ’s role in the instream flow process as it relates to surface water permitting. He also laid out some of TCEQ’s expectations of the study:

**National Academy of Sciences (NAS)**  
**Committee to Review the Bases for Instream Flow Standards for Rivers in Texas**

---

- ◆ standard methodology for instream flows;
- ◆ needs to be practical to implement;
- ◆ not requesting re-evaluation of bay and estuary flows;
- ◆ protection of sound ecological environment; and
- ◆ sound science to provide basis for making policy decisions.

**Committee Questions:**

- ✓ To what extent/how do you see interaction between state agencies and those who control flows? Interesting question, suggest we discuss later.
- ✓ Does TCEQ want comments on recommendation or recommendations on proposed approach to instream flow methodology? The timeframe laid out is feasible for proposed materials and methods.

**Mark Fisher, TCEQ Water Quality Assessment Section**

Provided an overview of TCEQ Water Quality Assessment Section's role in the instream flow process (See Attachment 4).

**Committee Questions:**

- ✓ You talked about water quality and quantity. If low flow conditions worsen, how do you handle? 7Q2 value is adjusted.
- ✓ The bio-indices used – was it developed in-house? It was developed in partnership with TWDB, TCEQ, and TPWD for wade-able streams.

**Kevin Mayes, Texas Parks and Wildlife Department (TPWD)**

Provided an overview of TPWD role in instream flow process and discussed strengths and weaknesses.

**Committee Questions:**

- ✓ Is our review to consider interpretation of SB 2 requirements? Or broad review with specific stream segments in mind? Room for SB 2 interpretation.
- ✓ You provided a great overview of the challenges. How firm is the 2010 timeline? Not just SB 2 timeline, there are other driving forces, planning, etc... other activities will suffer if we cannot resolve soon.
- ✓ You talked about the TPWD assured status in water permitting process. Please explain. TPWD can have full party status to hearings.

**National Academy of Sciences (NAS)**  
**Committee to Review the Bases for Instream Flow Standards for Rivers in Texas**

---

**IV. Comments from Invited Interest Groups**

**Ronald Gertson, Lower Colorado Regional Planning Group, local rice farmer**

Participated in the successful instream flow study of the Lower Colorado in the early 1990s. Overview of general comments/concerns:

- ◆ would like to see process result in basis for achieving sound ecological environment;
- ◆ some concern of the process harming stakeholders like irrigated agriculture and other third party users;
- ◆ stakeholder involvement in this process is essential to achieve buy-in, especially on subjective assumptions that are made (such as what species to protect); and
- ◆ hope the outcome is not arguable.

**Committee Questions:**

- ✓ What about the Lower Colorado study worked well that could be incorporated into this process? Stakeholder involvement.

**Kevin Craig, U.S. Army Corps of Engineers**

Provided an overview of the COE role in instream flows, primarily from an environmental impact perspective. COE concerns about current TWDB models/process of Brazos and Sulphur River Basin models and ability to use models in COE processes:

- ◆ collection methods of species;
- ◆ bias in development of fish models;
- ◆ lack of data to quantify contribution of overbank area; and
- ◆ too great a focus on woody debris.

Mr. Craig noted that he had not read the referenced technical overview documents and that the COE comments were on issues that were not relevant to issues related to the Committee's review.

**Committee Questions:**

- ◆ Would like a copy of the Brazos and Sulphur studies. Dr. Barney Austin, TWDB, will provide committee with copies of these studies (currently in draft form, scheduled for completion in January 04).
- ◆ Was stakeholder involvement used in fish modeling for these studies? For the Brazos study, there was some stakeholder involvement with TCEQ, TPWD, City of Houston and Brazos River Authority. For the Sulphur study, there was very little stakeholder involvement.

**National Academy of Sciences (NAS)**  
**Committee to Review the Bases for Instream Flow Standards for Rivers in Texas**

---

**Ken Kramer, Sierra Club**

Provided an overview of Sierra Club's interest in instream flows and made the following general comments about the process:

- ◆ Believe that we have not focused enough attention on economic value of instream flows issues. Though not relevant to technical aspects, process should consider economic values.
- ◆ Some stakeholders have concerns about the Lower Colorado plan -- whether or not it sufficiently addresses instream flows needs, but was bold in including stakeholders.
- ◆ There needs to be more emphasis on stakeholder involvement at front end of process in the design and implementation of studies.
- ◆ Urge the committee to develop a process that involves more participation and communication.
- ◆ Sierra club and other groups can assist agencies with public outreach and help to involve stakeholders.
- ◆ Concern about major TCEQ permits that could be issued before studies complete.

**Greg Rothe, San Antonio River Authority**

Provided an overview of interest in instream flows and made the following general comments about the process:

- ◆ Process should add value and be applicable to groundwater resources development.
- ◆ Selection of methodology is most important part of this process. Once the methodology is selected, the work is done. Stakeholders should be involved in selecting the methodology not just in conducting studies.
- ◆ concerned about one size fits all approach – supports case-by-case approach;
- ◆ supports Texas Water Conservation Association's (TWCA) plan for instream flows which entails:
  1. As part of SB 1 planning process, require Basin Management Plans that address bay and estuary and instream flow requirements; and
  2. Request TCEQ to develop rules to set instream flows after Basin Management Plans developed.

**Committee Questions:**

- ✓ Please explain the concept of dealing with instream flows on a case-by-case basis. Basin-by-basin – each system unique, hence basin planning process.

**National Academy of Sciences (NAS)**  
**Committee to Review the Bases for Instream Flow Standards for Rivers in**  
**Texas**

---

**Myron Hess, National Wildlife Federation**

Provided an overview of the National Wildlife Federation's interest in instream flows and made the following general comments about the process:

- ◆ Need to keep science and developing management issues separate. If management assumptions are incorporated, scientific studies are compromised.
- ◆ Need to be able to transition from science to decision process – technical document does not address very well.
- ◆ Need recommendations sooner rather than later. If we want perfect science, may be too late to have any impact.

National Academy of Sciences (NAS)  
Committee to Review the Bases for Instream Flow Standards for Rivers in  
Texas

---

V. **Committee Comment and Question Period**

**Committee Question:**

The panel asked about the different agency's roles in the permitting process.

**Response:**

A panel member from Nature Conservancy noted that, if there is only one amorphous goal of integrity and health of the system, we will be frustrated. He suggested a system such as that used in South Africa to grade different areas as to desired system health. He also suggested there should be a way out of the box -- that this study is one-shot. Determine if there are ways to modify in the future.

**Committee Comments:**

One committee member wanted to know about any discussions or agreement on how to pick a value for instream flows from the study results.

Another member noted that it appeared it was being asked to do the stakeholder involvement, and that should have been step 1. Should there be a separate role for stakeholder involvement while the committee is working on the science?

A member noted that subjective views should not govern the science of the studies.

**October 15, 2003**

The Committee laid out the following draft outline that they plan to use to develop their report:

I. **Executive Summary**

- a. Statement of Tasks
- b. Outline of What is to Come
- c. Findings and Recommendations

II. **Introduction (Reason for Study)**

- a. History and Ecology
- b. Hydrology
- c. Legislation
- d. Program Plan and Technical Overview Documents

**National Academy of Sciences (NAS)**  
**Committee to Review the Bases for Instream Flow Standards for Rivers in**  
**Texas**

---

**III. Instream Flows and Assessments**

- a. Purposes – Instream Flow Goals
- b. Overview of State of Science
- c. Framework = Flow Chart
  - shift from specific to holistic
  - seasonal values to variable flow rates
  - linkage of chemistry, physiology, and biology (integration and interpretation)
  - qualitative and quantitative
- d. Tools
- e. Difficulties and Challenges
- f. Success Stories
- g. Comparison with Other States

**IV. Evaluation and Framework (Review of Instream Flow Flowchart)**

- a. Discussion of Program Range of Goals and Objectives
  - sound ecology and environment
  - environmental needs
  - social and economic benefits
- b. Other
  - species/habitat

**V. Review/Critique Technical Overview Document (NAS does not see their mission as telling the state how to perform reviews). This chapter will address the following:**

- a. Is the Technology State of the Art?
- b. Is it Feasible?
- c. What are spatial scales designed for?
- d. Is it compatible?
- e. Alternatives?

**VI. Implementation Challenges (political, legal, and economic issues)**

**VII. Lessons Learned**

**VIII. Findings**

**IX. Appendices**

**National Academy of Sciences (NAS)**  
**Committee to Review the Bases for Instream Flow Standards for Rivers in Texas**

---

**Committee Question:**

Is this an instream flow program for all rivers in Texas or a select group?

**Response (Bill Mullican):**

The goal is for this process to develop a methodology that can be used for all stream segments so that others can conduct their own studies that would be acceptable to the state.

**Committee Question:**

The Committee would like written stakeholder input – can this be done?

**Response (Bill Mullican):**

We would welcome the opportunity to allow our stakeholders to provide written comments on the proposed methodology. If the Committee will provide us with a deadline for providing this feedback, we will contact our stakeholders.

**Committee Comment:**

The Committee will discuss process for receiving written feedback and get back with agencies with timelines and process.

**Staff Question (Barney Austin):**

Concerned about the Committee's review of the instream flow flowchart and link to Chapter 5, particularly if the Committee identifies additional elements.

**Committee Response:**

The Committee will ensure that the two Chapters (5 and 6) are linked based on their recommendations. This is a dynamic process and the draft outline will very likely change as they work through this process.

**Committee Question:**

Yesterday, the COE talked about two reports, one on the Brazos and one on the Sulphur. How do these reports relate to this study?

**Staff Response (Barney Austin):**

The project was proposed with very short notice and the TWDB was asked to put together a proposal to address instream flow concerns on the Sulphur and Brazos Rivers. The scope of work included the hydrology and hydraulics and the biology elements. The draft reports do not address all of the elements of an instream flow study -- in fact, the methodology now proposed differs from that presented in these reports.



**National Academy of Sciences (NAS)**  
**Committee to Review the Bases for Instream Flow Standards for Rivers in Texas**

---

One of the COE's concerns (as presented yesterday) was a bias -- the biological models -- and that is a question for the Committee. Another of their concerns was on woody debris. This is of importance to the engineering (hydraulics) even if it isn't of biological importance. The importance of overbank flows is of interest to the COE, but was beyond the scope of work of the studies. However, the TWDB is now pursuing this with a study of oxbows on the Lower Brazos.

**Reports/Information to Provide Committee:**

- ◆ LCRA Management Plan
- ◆ Instream Flow excerpts from SB 1 and SB 2
- ◆ TMDL documentation
- ◆ Technical documentation governing equations

Next step, over the course of the next few months, the Committee will begin working through the outline and gathering information. The current plan is to hold another meeting in Texas sometime in January around the 14-16.

**Committee Question:**

The LCRA's report referenced the establishment of four flow types to use for varying conditions. Any consideration by the group for establishing this type of approach?

**Staff Responses:**

Barney Austin (TWDB) – establishment of flow types is not inconsistent with methodology proposed.

Todd Chenoweth (TCEQ) – problem is agencies do not currently agree on flow requirements.

Randy Moss (TPWD) – first need to focus on sound methodology, then consider flows for varying conditions.

**Committee Comment:**

If the group can anticipate some of the implementation challenges, please provide additional detail to the Committee.

**Committee Question:**

**National Academy of Sciences (NAS)  
Committee to Review the Bases for Instream Flow Standards for Rivers in  
Texas**

---

TWDB Board member Wales H. Madden is here today and would like to know if he has any comments/recommendations he would like to make to the group.

**Wales Madden's Response:**

Rewarding to see the group working together to resolve this important issues. Hopefully the resulting outcome will be implementation of the Committee's recommendation. And would like to encourage stakeholder feedback and involvement in this process.