

December 17, 2010

**Framework for SAC review of
BBEST work products (Second Edition)**

Senate Bill 3 provides that “In accordance with the applicable schedule...the advisory group [EFAG], with input from the science advisory committee [SAC], shall review the environmental flow analyses and environmental flow regime recommendations submitted by each basin and bay expert science team. If appropriate the advisory group shall submit comments on the analyses and recommendations to the commission for use by the commission in adopting rules under Section 11.1471. Comments must be submitted not later than six months after the date of receipt of the analyses and recommendations.” Texas Water **Sec. 11.02362 (q)**, as added by SB 3.

Other potentially relevant provisions of the law, as added by SB 3, include:

- **Sec. 11.002 (15)** “Environmental flow analysis” means the application of a scientifically derived process for predicting the response of an ecosystem to changes in instream flows or freshwater inflows.
- **Sec. 11.002 (16):** “Environmental flow regime” means a schedule of flow quantities that reflects seasonal and yearly fluctuations that typically would vary geographically, by specific location in a watershed, and that are shown to be adequate to support a sound ecological environment and to maintain the productivity, extent and persistence of key aquatic habitats in and along the affected water bodies.
- **Sec. 11.02362 (n):** “Each basin and bay expert science team [BBEST] shall submit its environmental flow analyses and environmental flow regime recommendations to the pertinent basin and bay area stakeholders committee, the advisory group [EFAG], and the commission [TCEQ].... The ...advisory group may not change the environmental flow analyses or environmental flow regime recommendations of the basin and bay expert science team.”
- **Sec. 11.02362(m):** “...In developing the [environmental flow] analyses and [environmental flow regime] recommendations, the science team [BBEST] must consider all reasonably available science, without regard to the need for the water for other uses, and the science team’s [BBEST’s] recommendations must be based solely on the best science available.”
- **Sec. 11.02361 (e):** “The science advisory committee [SAC] shall (1) serve as an objective scientific body to advise and make recommendations to the advisory group on issues relating to the science of environmental flow protection...”

In addition to documenting the environmental flow regime recommendations and the supporting analyses, the report(s) of the BBEST also serve as the historical record of the technical basis for the flow recommendations. It is important therefore that reporting of the BBEST work be as complete and rigorous as possible, because the BBEST report will be addressed repeatedly during the stakeholder process, rule-making, work plan development, and in the adaptive management process.

The SAC will prepare a review for the EFAG of the BBEST environment flow recommendation. Because the review is intended for the EFAG, it will be written at a strategic level, and provide only a summary of technical review where necessary. A set of over-arching questions have been formulated to provide a framework for the SAC review.

1. Do the environmental flow analyses conducted by the BBEST appear to be based on a consideration of all reasonably available science, without regard to the need for water for other uses?

- Has the BBEST identified and considered available literature and data? Were relevant scientific data and/or analyses discounted by the BBEST?
- Are the data sources and methods adequately documented?
- To what extent has the BBEST considered factors extraneous to the ecosystem, especially societal constraints, such as other water needs?

2. Did the BBEST perform an environmental flow analysis that resulted in a recommended environmental flow regime adequate to support a sound ecological environment and to maintain the productivity, extent and persistence of key aquatic habitats in and along the affected water bodies?

- How is a sound environment defined and assessed for both riverine (lotic) and estuarine systems? What metrics of ecosystem health were used?
- How were locations selected for environmental flow analysis? Are these shown to be representative of and adequate to protect the basin? Was the process and rationale for selection adequately described? Were environmental flow regimes recommended for each selected site? Was a procedure presented by which the flow regime at other locations could be estimated?
- How were the historical flow periods defined and evaluated? How was a particular period selected as the basis for determining the flow regime?
- Was a sound ecological environment determined to exist at each selected site during the selected period? If not, were the underlying causes and/or modifications needed identified?
- Was a functional relationship between flow regimes and ecological health developed? Or, were proxy or intermediate variables used? Are assumptions underlying the methodology clearly stated? To what extent were overlay considerations (sediment transport, water quality, nutrients, etc.) addressed?

- Was a sound ecological environment demonstrated to be achieved at each selected site under conditions of the recommended flow regime?
- Is uncertainty in the analyses described or quantified? Where models were employed, was the extent of validation and associated predictive errors described and quantified?