

Memorandum



CITY OF DALLAS

Date: May 12, 2008

To: Members of the Quality of Life and Government Committee

Subject: Trinity River Authority Environmental Flow Interlocal Agreement

In 2006, the Dallas City Council approved a Legislative Agenda that included the City's position related to environmental flows whereby the City opposed any efforts to involuntarily modify existing water rights for environmental flows.

Environmental flows can be categorized into two types of flows--instream flows, and bay and estuary inflows. Instream flows refer to the flow regime necessary to maintain a healthy environment in streams and rivers; whereas, Bay and Estuary inflows refer to freshwater flows into a bay or estuary that contains little or no salts.

Subsequently in 2007, the 80th Legislature passed and the Governor signed into law Senate Bill 3 and House Bill 3 which contained several overarching provisions regarding environmental flows. Attached is a briefing that details the most current environmental flows legislation.

The environmental flows legislation set forth a schedule, committee structure and process for developing recommendations to meet instream flow needs for each of the river basins in the State as well as bay and estuary inflows to affected bays and estuaries. The Legislation also requires the Texas Commission on Environmental Quality (TCEQ) to adopt recommendations in the form of environmental flow standards.

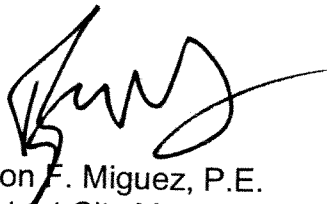
Since 2000, the major water rights holders in the Trinity River Basin, Trinity River Authority (TRA), City of Dallas, North Texas Municipal Water District (NTMWD) and Tarrant Regional Water District (TRWD) as well as the City of Houston, have taken the lead in independently evaluating the State Methodology and more recently in developing a better relationships between the various water parameters and wildlife found in the bay.

In order to provide input into the environmental flows process and to evaluate the recommendations of the Bay and Basin Area Stakeholder Committees, as defined by Senate Bill 3, the City needs to continue to work with the major water rights holders in the Trinity River Basin.

Therefore, an item has been placed on the May 14, 2008 City Council Agenda (Agenda Item 64) to authorize the City to continue the evaluation of inflows into

Galveston Bay and the impacts of Trinity River Basin instream flow requirements on Trinity River Basin water rights to assist in the development of environmental flow recommendations in the Trinity River Basin.

Please contact me if you have any questions.



Ramon F. Miguez, P.E.
Assistant City Manager

Attachment

- C:
- Mary K. Suhm, City Manager
 - Jill A. Jordan, P.E., Assistant City Manager
 - Ryan S. Evans, Assistant City Manager
 - Chief David Brown, Assistant City Manager (Interim)
 - A.C. Gonzalez, Assistant City Manager Deborah A. Watkins, City Secretary
 - Thomas Perkins, City Attorney
 - Craig D. Kinton, City Auditor
 - Judge Jay Robinson
 - Dave K. Cook, Chief Financial Officer
 - Chandra Marshall-Henson
 - Jo M. Puckett, P.E., Director, Dallas Water Utilities

Legislative Update: Environmental Flows

Senate Bill 3 of the 80th Legislature



May 12, 2008

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Purpose of Briefing

Provide an update to Environmental Flow legislation passed during the State's 80th Legislative Session in 2007.

Outline

- What are Environmental Flows
- City's Legislative Agenda
- Senate Bill 3 Overview
- Environmental Flows Legislation
- Current Related Activities
- Future Actions
- Appendix
 - Environmental Flows Advisory Group description and membership
 - Environmental Flows Science Advisory Committee description
 - Environmental Flow Process deadlines
 - Basin and Bay Stakeholder Committee description
 - Basin and Bay Expert Science Team description



What Are Environmental Flows

- Instream Flows - The flow regime necessary to maintain a healthy environment in streams and rivers.
- Bay and Estuary Inflows –Freshwater flow into a bay or estuary that contains little or no salts (that is, it is at zero salinity).

State Legislative Agenda for the 80th Session

- City Council adopted Legislative Agenda at its October 25, 2006 Meeting
- The Legislative Agenda contained the following regarding Environmental Flows:
 - Action
 - To oppose all legislation which would provide for the involuntary conversion of existing water rights to environmental flows. Ensure that existing (i.e., municipal, domestic, irrigation, industrial, recreation, etc.) water supply needs are met before environmental flows are satisfied.
 - Impact
 - The City of Dallas, after many years of planning and at great expense, has created one of the most reliable water delivery and storage systems in the state. The long term water supply of the Dallas area could be jeopardized if the City loses existing water rights.

State of Texas Legislative Water Related Activities

- The 80th Legislature passed and the Governor signed into law SB 3, HB 3 and HB 4 which contain overarching provisions regarding
 - Environmental Flows
 - Water Conservation and Planning
 - Designation of Unique Reservoir Sites and Sites of Unique Ecological Value
 - Creates a Study Commission on Region C Water Supply
 - Establishes a Legislative Joint Interim Committee
 - Creates a Water Advisory Committee Council to monitor the development and implementation of water conservation strategies in regional water plans

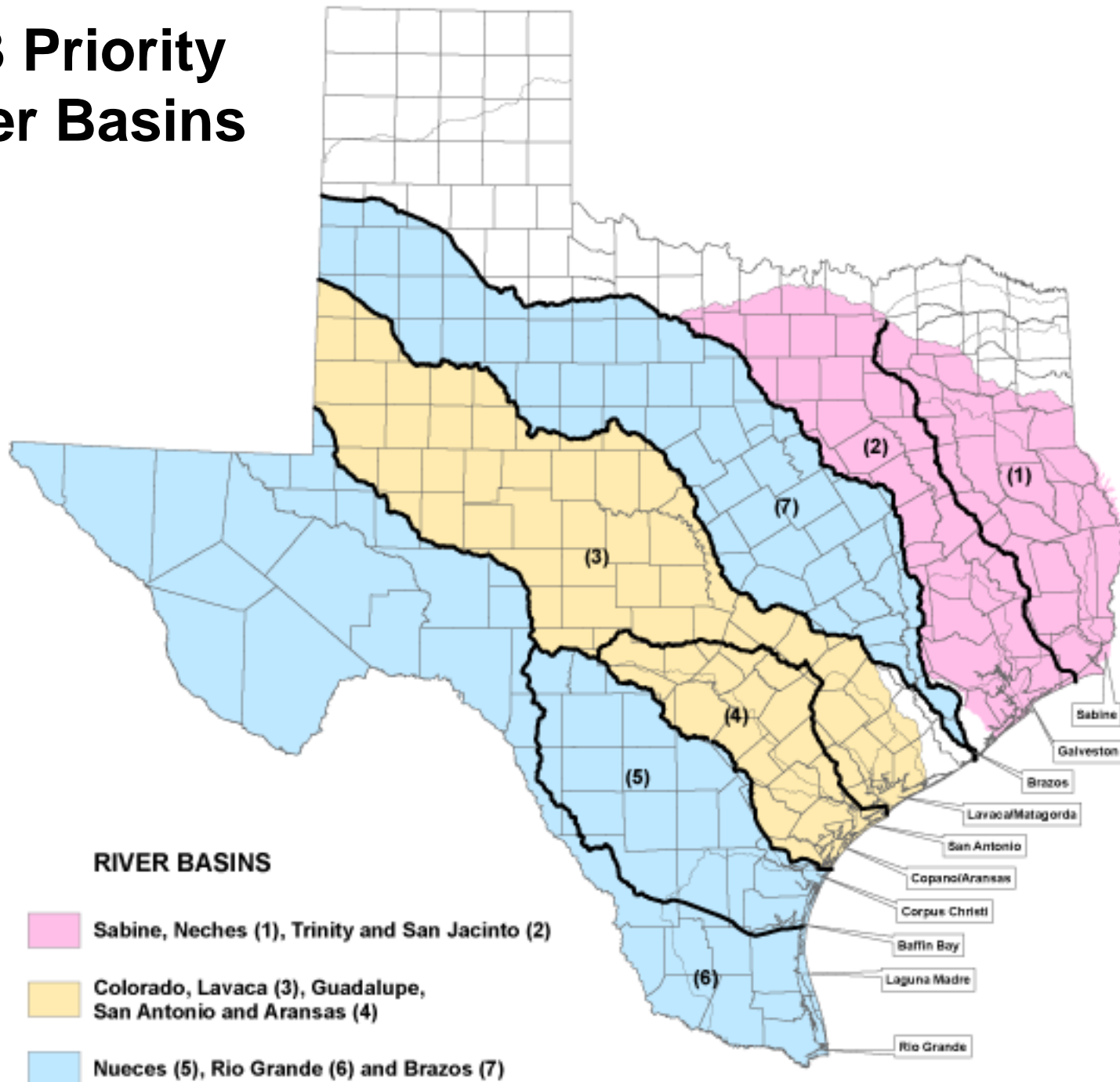
Environmental Flows – Senate Bill 3 States

- “The legislature finds that to provide certainty in water management and development and to provide adequate protection of the state's streams, rivers, and bays and estuaries, the state must have a process with specific timelines for prompt action to address environmental flow issues in the state's major basin and bay systems, especially those systems in which unappropriated water is still available.”

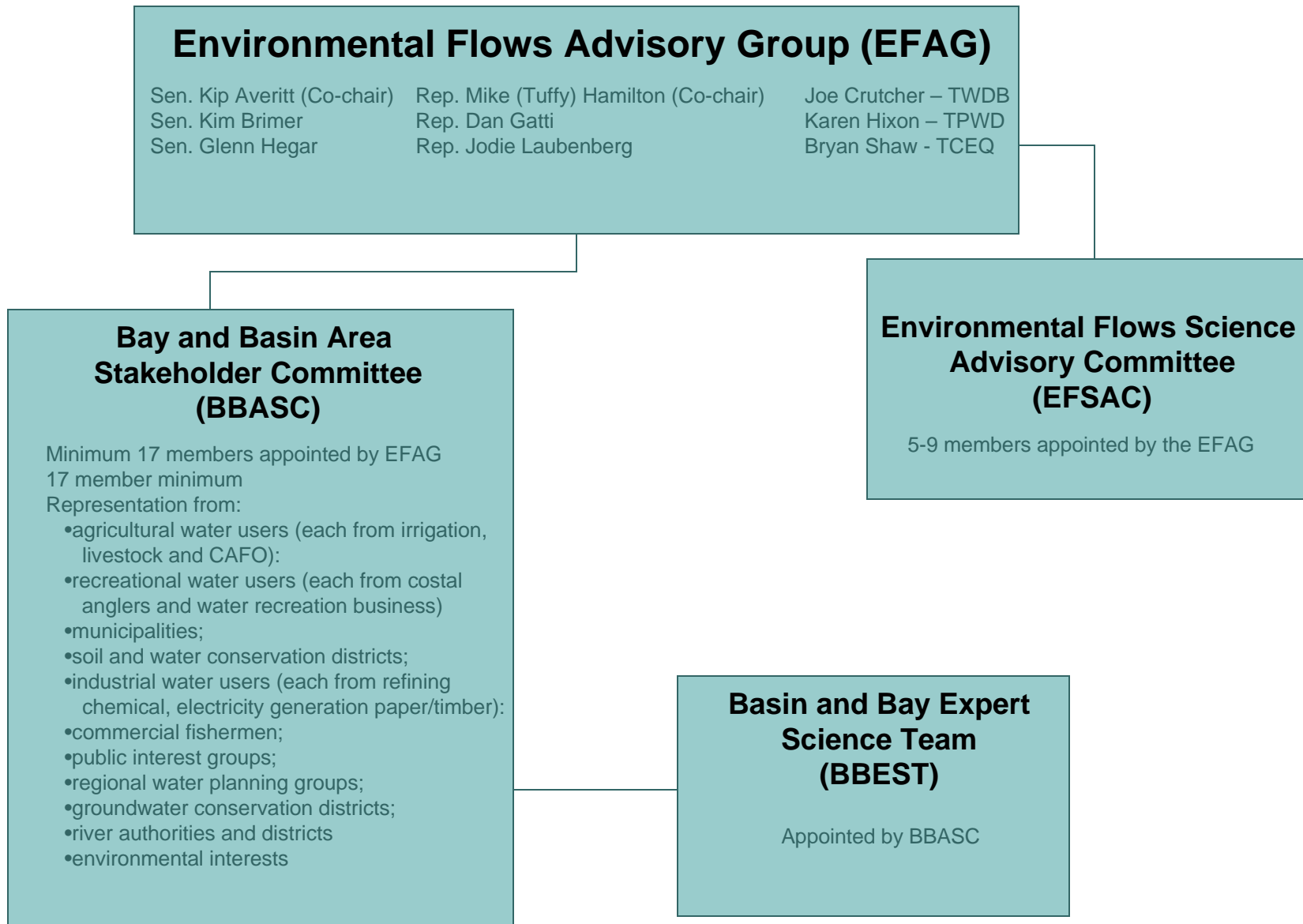
Senate Bill 3 – Environmental Flows

- Under SB 3, for the Trinity River Basin, the Environmental Flows Advisory Group must appoint the Basin and Bay Area Stakeholders Committee by no later than November 1, 2007 *(Completed)*
- For the Trinity River Basin, the Basin and Bay Area Stakeholders Committee shall establish a Basin and Bay Expert Science Team by no later than March 1, 2008 *(Pending)*
- The Basin and Bay Expert Science Team shall finalize environmental flow regime recommendations and submit them to the Basin and Bay Area Stakeholders Committee, the Environmental Flows Advisory Group TCEQ by no later than March 1, 2009, unless extended for good cause *(Pending)*
- The Basin and Bay Area Stakeholders Committee shall submit to the TCEQ its comments on and recommendations regarding the Basin and Bay Expert Science Team's recommended environmental flow regime by no later than September 1, 2009
- The TCEQ shall adopt the environmental flow standards for the Trinity River Basin by no later than September 1, 2010

SB3 Priority River Basins



Environmental Flows Committee Structure



Environmental Flows Process Progress

- February 26, 2008 - Environmental Flows Advisory Group met to adopt committee rules and request nominations for the following committees
 - Environmental Flows Science Advisory Committee
 - Basin and Bay Area Stakeholder committees
- March 14, 2008 – Deadline for Texas Commission on Environmental Quality to receive nomination applications.
 - Nominations were accepted for representation of the following interest groups on the Basin and Bay Area Stakeholder committee
 - agricultural water users (each from irrigation, livestock and CAFO):
 - recreational water users (each from costal anglers and water recreation business)
 - municipalities;
 - soil and water conservation districts;
 - industrial water users (each from refining chemical, electricity generation paper/timber):
 - commercial fishermen;
 - public interest groups;
 - regional water planning groups;
 - groundwater conservation districts;
 - river authorities and districts
 - environmental interests

Committee Nominations

- Municipalities were identified as an interest group on the Basin and Bay Area Stakeholder Committees
- In order to protect Dallas' interest on the Basin and Bay Area Stakeholder Committees in the river basins Dallas currently has water supply the following nominations were made
 - Trinity and San Jacinto Rivers and Galveston Bay
 - Ramon F. Miguez, P.E., Assistant City Manager has been nominated by Dallas, the Texas Water Conservation Association and the other major water rights holders in the Trinity River Basin
 - Sabine and Neches Rivers and Sabine Lake Bay
 - Jo M. (Jody) Puckett, P.E., Water Utilities Department Manager, has been nominated by Dallas and the Texas Water Conservation Association

Environmental Flows Schedule

- Environmental Flows Advisory Group, to date, have not made the appointments required by Senate Bill 3
 - Environmental Flows Science Advisory Committee (EFSAC)
 - Bay and Basin Area Stakeholder Committee (BBASC)
- In turn the BBASC has not made its appointments as required by Senate Bill 3
 - Basin and Bay Expert Science Team (BBEST)
- The September 1, 2009 deadline for the BBASC to recommend an environmental flow regime has not changed

Current Related Activities

- The State has developed a methodology for modeling bay and estuary flows.
- Dallas along with other major water rights holders in the Trinity River Basin have evaluated the State methodology and are working on improving the methodology.

State Methodology

- The State Methodology is a mathematical procedure for calculating “necessary” inflows to an estuary, including:
 - statistical relationships (linear regressions) relating annual commercial harvest data for several key estuarine species to total monthly inflow to an estuary, and of bay salinity data on inflow,
 - optimization solutions for monthly inflow given a set of optimization *targets* ("management goals") and a set of *constraints* the solution must satisfy, resulting in:
 - a computed pattern of monthly inflows that is "optimal" for one of two specified management goals:
 - MinQ – minimization of inflow while preserving 80% of the average historical harvest, or
 - MaxH – maximizing the commercial harvest.
 - TPWD’s selected the “MaxH” flows as the “beneficial inflows” for Galveston Bay,

State Methodology Results for Galveston Bay

- A total environmental flow need of 5.2 million acre-feet of water per year, with a large portion originating from the Trinity River Basin.
- The four Dallas water supply lakes within the Trinity River Basin (Ray Roberts, Lewisville, Grapevine and Ray Hubbard) only impound a total of 1.8 million acre-feet of water.

Evaluation of State Methodology

- Interlocal Agreement between City of Dallas, Trinity River Authority (TRA), North Texas Municipal Water District, Tarrant Regional Water District and City of Houston through TRA (5 Party Group)
- Contracted with Espy Consulting, Inc. to conduct a technical review study of the water availability in the Trinity River Basin
- Technical Review has shown when tested against an independent data set, the State Methodology failed to verify the data relationships it originally produced.

Conclusions of Work Performed to Date

- Although the methodology used by the State to develop the ecosystem model of Galveston Bay is the first step towards determining the freshwater inflows necessary for the health of the Galveston Bay:
- It is not apparent how the beneficial inflows, as presently set out, can be readily applied in practical water management practices;
- The response of the ecosystem to freshwater inflows has not been adequately captured by the statistical methods employed by the TWDB and the TPWD
 - Analysis of the commercial harvest data's correlation with TPWD Coastal Fisheries data indicates that commercial harvest does not represent a meaningful proxy measure of abundance in the bay. Commercial harvest does not correlate with abundance (i.e. the number of a species of finfish or shellfish in Galveston Bay can not be accurately determined by the number of fish caught in Galveston Bay);
- The methodology used by the State develop the ecosystem model of Galveston Bay should be further developed
 - To improve its application under extreme (drought and flood) conditions
 - Adequately represent the response of the ecosystem to freshwater inflows
- Continue to attempt to influence the work of the TWDB and TPWD on the State Methodology

Continuation of Work

- Continues to work toward improving knowledge as to the extent freshwater inflow influences species abundance in Galveston Bay.
- Utilizing improved representations of:
 - Abundance – TPWD Coastal Fisheries Data scientifically sampled by multiple gear over the entire bay
 - Inflow – Rather than calendar periods, the hydrology of watersheds is characterized by identifying the components of flow to which it is believed the organisms respond: the seasonal freshets, i.e. the spring and fall pulses of flow.
- Investigating various statistical methods (linear, non-linear) to attempt to find better relations between species abundance and inflow.
- Ultimately, the study Espy is conducting will attempt to employ new relations of inflow and abundance to develop a statistical flow distribution. Rather than meeting a single minimum flow number, this study's ultimate objective is to develop an acceptable statistical flow distribution to *maintain* Galveston Bay's ecological health wherein the relations between freshwater inflow and organism abundance can give insight.
- Evaluate Instream flow needs throughout the Trinity River Basin to assist members of the Bay and Basin Area Stakeholder Committee in determining applicable and acceptable environmental flow regimes.

Future Actions

- Agenda Item 64 on the City Council May 14, 2008 Meeting Agenda is a request for authorization to enter into an Interlocal Agreement with the Trinity River Authority, North Texas Municipal Water District, and the Tarrant Regional Water District to continue the evaluation of inflows into Galveston Bay and the impacts of Trinity River Basin instream flow requirements on Trinity River Basin water rights

Appendix

Environmental Flows Advisory Group (EFAG)

- Nine Members
 - Appointed: 3 from Governor (one each from TCEQ, TWDB and TPWD), 3 from Lt. Governor and 3 from Speaker of the House
- The EFAG shall conduct public hearings and study public policy implications for balancing the demands on the water resources of the state resulting from a growing population with the requirements of the riverine, bay, and estuary systems including granting permits for instream flows dedicated to environmental needs or bay and estuary inflows, use of the Texas Water Trust, and any other issues that the advisory group determines have importance and relevance to the protection of environmental flows
- The EFAG shall specifically address:
 - ways that the ecological soundness of those systems will be ensured in the water rights administration and enforcement and water allocation processes; and
 - appropriate methods to encourage persons voluntarily to convert reasonable amounts of existing water rights to use for environmental flow protection temporarily or permanently.
- Appoint an Environmental Flows Science Advisory Committee (EFSAC)
- Appoint Bay and Basin Area Stakeholder Committee (BBASC) for each river basin and bay system
- Review the environmental flow analyses and environmental flow regime recommendations submitted by each Basin and Bay Expert Science Team (BBEST). If appropriate, the EFAG shall submit comments on the analyses and recommendations to the TCEQ for use by TCEQ
- By December 1, 2008, and every two years thereafter, the EFAG shall issue and deliver to the Governor, Lt. Governor, and Speaker of the House copies of a report summarizing:
 - any hearings conducted by EFAG;
 - any studies conducted by EFAG;
 - any legislation proposed by EFAG;
 - progress made in implementing Sections 11.02361 and 11.02362; and
 - any other findings and recommendations of EFAG.

Environmental Flows Advisory Group (EFAG)

○ Members

- Sen. Kip Averitt (Co-chair) – District 22, Waco, Chair of the Senate Natural Resources Committee
- Sen. Kim Brimer – District 10, Fort Worth, Member Senate Natural Resources Committee
- Sen. Glenn Hegar District 18, Katy, Member Senate Natural Resources Committee
- Rep. Mike Hamilton (Co-chair) District 19, Hardin, Newton, Orange (part) Counties, Chair House Natural Resources Committee
- Rep. Dan Gatti, District 20, Milam, Williamson (part) Counties, Member House Natural Resources Committee
- Rep. Jodie Laubenberg – District 89, Collin and Rockwall Counties, Member House Natural Resources Committee
- Joe Crutcher – Texas Water Development Board, Palestine, term expires December 31, 2013
- Karen Hixon - Texas Parks and Wildlife Commission San Antonio, term which will expire on February 1, 2013
- Bryan Shaw – Texas Commission on Environmental Quality, City of Bryan, term will expire on Aug. 31, 2013

Environmental Flows Science Advisory Committee (EFSAC)

- 5 to 9 members appointed by the EFAG
- To provide an objective perspective and diverse technical expertise, including expertise in hydrology, hydraulics, water resources, aquatic and terrestrial biology, geomorphology, geology, water quality, computer modeling, and other technical areas pertinent to the evaluation of environmental flows
- The EFSAC shall:
 - 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; and
 - develop recommendations to help provide overall direction, coordination, and consistency relating to:
 - environmental flow methodologies for bay and estuary studies and instream flow studies;
 - environmental flow programs at the TCEQ, TPWD, and TWDB; and
 - the work of the BBEST
 - By November 1, 2007, shall define the geographical extent of each river basin and bay system in this state for the sole purpose of developing environmental flow regime
- To assist the EFAG in assessing the extent to which the recommendations of the BBASC are considered and implemented

Deadlines for Developing Environmental Flow Regime Recommendations and Adopting Environmental Flow Standards

- Trinity and San Jacinto Rivers and Galveston Bay and Sabine and Neches Rivers and Sabine Lake Bay;
 - November 1, 2007 - Environmental Flows Advisory Group to appoint the Basin and Bay Area Stakeholders Committee;
 - March 1, 2008 - Basin and Bay Area Stakeholders Committee to appoint a Basin and Bay Expert Science Team;
 - March 1, 2009 - Basin and Bay Expert Science Team to finalize and submit environmental flow regime recommendations to Basin and Bay Area Stakeholders Committee, Environmental Flow Advisory Group, and TCEQ (can be delayed with good cause)
 - September 1, 2009 - Basin and Bay Area Stakeholders Committee to submit to the TCEQ comments on and recommendations regarding the Basin and Bay Expert Science Team's recommended environmental flow regime; and
 - September 1, 2010 - TCEQ to adopt the environmental flow standards

Deadlines for Developing Environmental Flow Regime Recommendations and Adopting Environmental Flow Standards

- Colorado and Lavaca Rivers and Matagorda and Lavaca Bays and Guadalupe, San Antonio, Mission, and Aransas Rivers and Mission, Copano, Aransas, and San Antonio Bays;
 - September 1, 2008 - Environmental Flows Advisory Group to appoint the Basin and Bay Area Stakeholders Committees;
 - Remaining Schedule to be determined by the Environmental Flows Advisory Group
- Nueces River and Corpus Christi and Baffin Bays; Rio Grande, the Rio Grande estuary, the Lower Laguna Madre, and Brazos River and its associated bay and estuary system.
 - September 1, 2009 - Environmental Flows Advisory Group to appoint the Basin and Bay Area Stakeholders Committees
 - Remaining Schedule to be determined by the Environmental Flows Advisory Group

Bay and Basin Area Stakeholder Committee (BBASC)

- Appointed by Environmental Flows Advisory Group
- 17 member minimum
- Representation from:
 - agricultural water users, including representatives of each of the following sectors:
 - agricultural irrigation;
 - free-range livestock; and
 - concentrated animal feeding operation;
 - recreational water users, including
 - coastal recreational anglers
 - businesses supporting water recreation;
 - municipalities;
 - soil and water conservation districts;
 - industrial water users, including representatives of each of the following sectors:
 - refining;
 - chemical manufacturing;
 - electricity generation; and
 - production of paper products or timber;
 - commercial fishermen;
 - public interest groups;
 - regional water planning groups;
 - groundwater conservation districts;
 - river authorities and other conservation and reclamation districts with jurisdiction over surface water; and
 - environmental interests.
- Members serve 5 year staggered terms

Bay and Basin Area Stakeholder Committee (BBASC)

- Establish a (BBEST)
 - To be established within 6 months of the establishment of the BBASC
- Review the environmental flow analyses and environmental flow regime recommendations submitted by the committee's basin and bay expert science team and shall consider them in conjunction with other factors, including the present and future needs for water for other uses related to water supply planning in the pertinent river basin and bay system
- Develop recommendations regarding environmental flow standards and strategies to meet the environmental flow standards and submit those recommendations to the commission and to the advisory group
- In developing its recommendations, the BBASC shall operate on a consensus basis to the maximum extent possible.

Bay and Basin Area Stakeholder Committee (Continued)

- In recognition of the importance of adaptive management, after submitting its recommendations regarding environmental flow standards and strategies to meet the environmental flow standards to the commission, each basin and bay area stakeholders committee, with the assistance of the pertinent basin and bay expert science team, shall prepare and submit for approval by the advisory group a work plan. The work plan must:
 - establish a periodic review of the basin and bay environmental flow analyses and environmental flow regime recommendations, environmental flow standards, and strategies, to occur at least once every 10 years;
 - prescribe specific monitoring, studies, and activities; and
 - establish a schedule for continuing the validation or refinement of the basin and bay environmental flow analyses and environmental flow regime recommendations, the environmental flow standards adopted by the commission, and the strategies to achieve those standards.

Basin and Bay Expert Science Team (BBEST)

- composed of technical experts with special expertise regarding the river basin and bay system or the development of environmental flow regimes
- 5 year terms
- Each BBEST shall develop environmental flow analyses and a recommended environmental flow regime for the river basin and bay system for which the team is established through a collaborative process designed to achieve a consensus. In developing the analyses and recommendations, the science team must consider all reasonably available science, without regard to the need for the water for other uses, and the BBEST's recommendations must be based solely on the best science available