

**Presented:**  
Texas Water Law Institute

December 9-11, 2009  
Austin, Texas

## **The Environmental Flows Allocation Process**

**Colette Barron Bradsby**

Colette Barron Bradsby  
Texas Parks & Wildlife Department  
4200 Smith School Road  
Austin, Texas 78744

[Colette.barron@tpwd.state.tx.us](mailto:Colette.barron@tpwd.state.tx.us)  
512-389-8899

## I. Introduction: Environmental Flow Protection in Transition

Almost every water development permitting or planning process calls for the consideration and protection of environmental flows. The term “environmental flows” encompasses both instream flows, the water flowing within rivers, streams and lakes, and the freshwater inflows that make their way into coastal bays and estuaries. Environmental flows represent the volume and distribution of water necessary to sustain a broad range of ecologic needs. River and bay systems require flowing water to maintain their functions, uses, and benefits to people and fish and wildlife; assessing and addressing the impacts of water projects on the needs of these natural systems is an increasingly complex undertaking. International Union for Conservation of Nature and Natural Resources, *FLOW. THE ESSENTIALS OF ENVIRONMENTAL FLOWS 1* (Megan Dyson, Ger Bergkamp, and John Scanlon, eds., 2003). This article explores the layers and complexities of the newly developed regulatory scheme for environmental flow protection in Texas surface water rights as enacted by Article 1 of Senate Bill 3 of the 80<sup>th</sup> Texas Legislature.<sup>1</sup>

Environmental flow protection through water rights permitting is in transition. In 2007, Senate Bill 3 enacted a new regulatory scheme that enlarges the field of participants in the evaluation of and the decision making related to environmental flow protection. The bill relies upon a combination of grass roots participation, statewide oversight, and state agency action for full implementation of environmental flow protection. The new process requires active participation from stakeholders with divergent interests in defined river basin and bay systems. The scale of the inquiry regarding the health of river and bay resources has been expanded from a one point in time examination of the instream uses at a location associated with a particular water right to a full river basin and bay system examination. While environmental flow protection will continue to be implemented through specific water right permits, the environmental needs will be identified through public proceedings, and the regulatory standards to protect those needs will be promulgated through notice and comment rulemaking. Additionally, the concept of adaptive management and the ability to adjust environmental flow protection requirements within defined limits has been inserted into water rights permitting. *See* TEX. WATER CODE §§110236, 1102361, 11.02362, 11.147, and 11.1471 (Vernon 2008).

A critical aspect of Senate Bill 3 is that it is prospective; water right permits in existence prior to the effective date of September 1, 2007 are not impacted. *Id.* at §11.147(e-1). Only new water rights and water right amendments that increase the amount of water appropriated fall under the new regulatory scheme. *Id.* at §§11.147(e-1) and (e-3) and 11.1471(d) (Vernon 2008).

The passage of Senate Bill 3 represents a multi-year, multi-legislative session effort by legislators, state and local agencies, and numerous stakeholders to tackle refinement of environmental flow protection in water rights administration. A variety of issues compelled diverse stakeholders to collaborate with each other and seek a new legislative direction.

---

<sup>1</sup> The 80th Texas Legislature saw the passage of two environmental flows allocation articles in House Bill 3 and Senate Bill 3. Although both bills passed and were enacted, for ease of reference, all further citations in this article will be to Senate Bill 3; the language of the bills is virtually identical. All Article 1 Senate Bill 3 changes were enacted as amendments to Chapters 1 and 11 of the Texas Water Code.

Litigation concerning the authority of the state to provide water for environmental needs was ongoing. There was a desire for certainty rather than negotiated outcomes in crafting environmental flow special conditions and the acknowledgment that a more comprehensive look at a complete river and bay system would be useful in determining factors that influence environmental flows. Also, while special permit conditions have provided some defined level of environmental protection, many parties understood that instream uses have relied upon a passive support system in the form of water passed to meet downstream senior rights, unused water rights, and return flows. Many parties recognized that the law had not kept up with advances in the sciences, methodologies, data collection, and technical tools associated with evaluating instream flows and freshwater inflows. In turn, many also acknowledged the need to adapt to changing information and conditions, and the need to re-examine the perpetuity of special permit conditions. A call was heard for greater participation in environmental flow protection decisions. Stakeholders also came to a common understanding that water development and water rights permitting decisions could not wait for perfect science and data, and that prompt action was necessary to begin the process for defining protection levels for the state's basin and bay systems.<sup>2</sup>

## **II. Summary of Legal Framework Applicable During Transition to Senate Bill 3 Process**

### **A. Environmental Flow Protection Through Special Permit Conditions**

As the Senate Bill 3 process will take years to develop and be fully implemented, water rights practitioners need to be versed both in the new law and the requirements and procedures that remain in place during the transition period. The historical practices of the Texas Commission on Environmental Quality (TCEQ or commission) will continue until the environmental flows allocation process is implemented.

The TCEQ uses special permit conditions to implement the Texas Water Code provisions that require consideration of instream uses, freshwater inflows, water quality, and fish and wildlife habitat. The Texas Constitution provides that the preservation and conservation of all natural resources of the state, including the waters of its rivers and streams, are public rights and duties and that the legislature shall pass such laws as may be appropriate to effect such preservation and conservation. TEX. CONST. ART. XVI, §59; *City of Corpus Christi v. City of Pleasanton*, 276 S.W. 2d 798, 803 (Tex. 1995) (providing that it is the legislature's duty to protect and preserve natural resources). While constitutional authority to preserve water resources dates to 1917, Texas water law did not address impacts to instream flows and freshwater inflows from water right projects until 1985, when a suite of environmental flow protection provisions was enacted. Texas Water Code Section 11.147 was amended to give the commission authority to include in permits within 200 river miles of the coast conditions considered necessary to maintain beneficial inflows to any affected bay and estuary system. Section 11.147(d) was added to require the commission to consider the effect, if any, of the issuance of a water right permit on the existing instream uses and water quality of the stream or river to which the application applied. Section 11.147(e) requires the commission to consider the effect of the issuance of the permit on fish and wildlife habitats. Section 11.150 added that the

---

<sup>2</sup> For a complete history of the road to Senate Bill 3, see Hope Wells and Colette Barron Bradsby, *Environmental Flows*, in *ESSENTIALS OF TEXAS WATER RESOURCES* at 188 (Mary K. Sahs ed., 2009).

commission must assess the impacts of permit issuance upon the state's water quality. Section 11.152 of the Texas Water Code requires reasonable actions to mitigate adverse impacts on fish and wildlife habitats for permits in excess of 5000 acre-feet.

The commission translated its responsibility to "consider effects" on instream resources into promulgating special permit conditions to minimize impacts and to provide protection to maintain existing instream uses. In 2003, the authority for the long standing commission practice was clarified with amendments to Section 11.147 that added specific direction for permits to include, to the extent practicable when considering all public interests, conditions to maintain existing instream uses and water quality, and fish and wildlife habitats. TEX. WATER CODE § 11.147(d) & (e) (Vernon 2008).

## **B. Technical Review and Determination of Environmental Flow Protection**

When processing an application for a permit to store, take, or divert water, the commission performs a technical review of the proposed project and assesses its environmental impacts. The technical inquiry and analysis may rely upon existing data and literature or may require site-specific studies. Where applicable and available, freshwater inflow studies, instream flow studies, and water quality assessments must be considered during this technical review. TEX. WATER CODE § 11.147(b) & (d) (Vernon 2008). Using the best available science and information from the technical review, the commission determines the level of required protection of instream resources and imposes a permit condition consistent with that needed protection. A typical special permit condition limits diversion of water by requiring that a certain quantity of water or rate of flow must to pass a reference or diversion point before the permittee may divert water. This is called a streamflow restriction. Texas Natural Resource Conservation Commission, A REGULATORY GUIDANCE DOCUMENT FOR APPLICATIONS TO DIVERT, STORE OR USE STATE WATER (RG-141) 41-42, (June 1995). Factors that lead to a streamflow restriction may include the perennial nature of the stream, aquatic life uses and biological integrity, water quality, threatened or endangered species, and existing recreational use. *Id* at 40.

Applications supported by site-specific studies are rare, and therefore the majority of environmental flow protection permit conditions are developed through the use of desktop methodologies. The "Lyons Method" is the desktop methodology most commonly used; the method modified by the commission determines instream flow values based upon 40 to 60 percent of the monthly median flows. *Id.* See also Robert L. Bounds and Barry Lyons, *Existing Reservoir and Stream Management Recommendations Statewide Minimum Streamflow Recommendation*, Texas Parks and Wildlife Department, Oct. 16, 1979. The commission employs a modified Lyons Method to implement a schedule of minimum monthly flows that must be maintained before diversion is allowed.

Special permit conditions are customized to address the specific impacts of a particular water project. Tailored conditions may include a requirement for protective intake screens to limit fish injuries, a mitigation plan for habitat or species loss, removal of exotic species, and seasonal limits on diversion rates. Conditions to protect water quality are quite common. The assessment of water quality impacts requires the commission to consider the maintenance of applicable State of Texas Surface Water Quality Standards and the need for all existing instream flows to be passed up to that amount necessary to maintain the water quality standards for the

affected stream. 30 TEX. ADMIN. CODE § 297.54; *See also* 30 TEX. ADMIN. CODE §§ 307.1-307.10.

As discussed below, Senate Bill 3 requires changes to the current technical review practice. The new law drills deeper into the specific components of quantity, distribution, geographic scope, and seasonal variation of environmental flows and thus calls for a more comprehensive look at impacts to instream flows and freshwater inflows and more complex permit provisions to protect those resources. *See* TEX. WATER CODE §§ 11.002 (15)-(16), 11.0235(d-5), and 11.1471(c) (Vernon 2008). It is hoped that the new environmental flow evaluation process will provide the commission a better illustration of the ecology and needs of a complete basin and bay system.

### **C. Primary Changes to Current Practice and Law Regarding Environmental Flow Protection**

Under current commission practice and pre-Senate Bill 3 law, participation in the development of special conditions to protect environmental flows is very limited. For uncontested matters, the applicant and the commission are the participants. The commission is required to consider the recommendations of Texas Parks and Wildlife Department while making its decisions regarding water rights, and TPWD has the right to be named a party to water right proceedings, but the agency has no decision making authority. TEX. WATER CODE §11.147(f) (Vernon 2008). For contested water right applications, parties admitted to a contested case hearing (those persons who can show a justiciable interest in the matter) and the applicant and commission may participate in producing and evaluating information relevant to environmental flow protection. *See* 30 TEX. ADMIN. CODE §§55.29, 55.203, and 80.109. As discussed in depth below, Senate Bill 3 greatly expands the scope of participants in environmental flow protection decisions, adding in diverse stakeholders, local experts, advisory groups, and the public.

Another change is that environmental flow standards shall be applied to determine special conditions rather than the assessments currently employed by the commission. The Code provides that:

Notwithstanding Subsections (b)-(e), for the purpose of determining the environmental flow conditions necessary to maintain freshwater inflows to an affected bay and estuary system, existing instream uses and water quality of a stream or river, or fish and aquatic wildlife habitats, the commission shall apply any applicable environmental flow standard, including any environmental flow set-aside, adopted under Section 11.1471 instead of considering the factors specified by those subsections.

TEX. WATER CODE §11.147(e-3) (Vernon 2008).

Finally, under pre-Senate Bill 3 law, special permit conditions for environmental flow protection were enacted in perpetuity, with no authority of the commission or others (absent a voluntary amendment by the applicant) to alter or refine the permit conditions in the future. While water rights will still be issued in perpetuity, Senate Bill 3 imposes a re-opener provision on new permits in order to allow for the implementation of new regulatory environmental flow

standards and limited adjustments of the requirements imposed to protect environmental flows. *Id.* at §11.147(e).

### **III. The Senate Bill 3 Environmental Flow Allocation Process**

#### **A. The Basics**

Senate Bill 3 establishes a new regulatory system that depends upon a division of labor amongst different entities and a sequence of recommendations that ultimately lead to the adoption by rule of environmental flow standards and environmental flow set-asides by TCEQ. A combination of regional public participation, statewide oversight, and state agency action provide the inner workings of the process. The new scheme is driven by a consensus based process where local stakeholders and technical experts make recommendations regarding the appropriate environmental flow regime for a defined full river basin and bay system.

As discussed in more detail below, the sequence of the new environmental flows allocation begins with the establishment of a statewide Environmental Flows Advisory Group (Advisory Group or EFAG) to investigate public policy implications of options to provide environmental flows and to oversee appointment of regional stakeholders to participate in determining the environmental flow needs of specific river basin and bay systems. The EFAG appoints a Texas Environmental Flows Science Advisory Committee (SAC) to provide objective technical assistance to the EFAG and direction to regional scientists and state agencies regarding environmental flow methodologies, studies, and analyses. The EFAG appoints, in the order of priority basins laid out in statute, persons to serve on Basin and Bay Area Stakeholders Committees (BBASC or stakeholder committee). The BBASC appoints a Bay and Basin Expert Science Team (BBEST) that performs environmental flow analyses and develops an environmental flow regime recommendation based solely upon the best available science. Each stakeholder committee provides TCEQ with comments and recommendations regarding the BBEST recommendations and appropriate environmental flow standards for its basin along with strategies to meet standards. Each BBASC also creates a work plan that establishes periodic review of environmental flow analyses, regime recommendations, flow standards, and strategies to meet standards. The TCEQ considers the recommendations and comments of the EFAG, the SAC, the BBEST, the BBASC, the state agencies, and the public in a rulemaking process and then promulgates rules that set out environmental flow standards. New permits will be specially conditioned to be consistent with the rules. *See* TEX. WATER CODE §§110236, 1102361, 11.02362, 11.147, and 11.1471 (Vernon 2008).

Finally, the state gains authority to “set aside” unappropriated water, if available, to satisfy the environmental flow standards to the maximum extent reasonable when considering human water needs. *Id.* at §§11.1471(a)(2) and 11.1471(e). A set-aside, except one in the middle and lower Rio Grande basins, will be assigned a priority date corresponding to the date the commission receives the environmental flow regime recommendations from the applicable Basin and Bay Expert Science Team. *Id.* Each set-aside shall be included in the appropriate commission water availability model. New permits cannot be issued if they would impair an environmental flow set-aside. *Id.* at §11.1471(d).

Environmental flow standards and set-asides may be altered by the commission in a rulemaking process undertaken in accordance with a schedule established by the commission.

The schedule may not provide for the rulemaking process to occur more frequently than once every 10 years unless a stakeholder committee work plan provides for a periodic review to occur more frequently. *Id.* at §11.1471(e).

## **B. The Policy Statements**

The legislature noted that the great pressures and demands placed on Texas water resources made it of paramount importance to ensure that priorities are effectively addressed by detailing how environmental flow standards are to be developed using environmental studies. TEX. WATER CODE §11.0235(e) (Vernon 2008). In establishing the Environmental Flows Advisory Group, the legislature recognized “the importance that the ecological soundness of our riverine, bay, and estuary systems and riparian lands has on the economy, health and well-being of the state.” *Id.* at §11.0236(a). A primary direction from Senate Bill 3 was a finding that recommendations for state action to protect instream flows and freshwater inflows should be developed through a consensus-based, regional approach involving balanced representation of stakeholders. *Id.* at §11.0235(d-6). Amended Texas Water Code Section 11.0235(c) requires the commission to consider and “to the extent practicable” provide for freshwater inflows and instream flows necessary to maintain the viability of the state’s streams, rivers and bay and estuary systems in the commission’s regular granting of permits for the use of state waters. However, the statute also provides that, as an essential part of the state’s environmental flow policy, all permit conditions relating to freshwater inflows to bays and estuaries and instream flow needs must be subject to temporary suspension if necessary for water to be applied to essential beneficial uses during emergencies. *Id.* at §11.0235(c).

Numerous policy directives were added, including a statement of the need for specific timeframes and prompt action to protect environmental flows, the need for additional enforcement and more effective water rights administration, and the need for improved science and technical tools and adaptive management. *Id.* at §§ 11.0235(d-1)(d-2)(d-4)(d-5)(d-6) and (f). The legislature acknowledged the need for continuing evaluation of environmental flow needs along with other water needs. Texas Water Code §11.0235(d-5) provides:

The legislature finds that the management of water to meet instream flow and freshwater inflow needs should be evaluated on a regular basis and adapted to reflect both improvements in science related to environmental flows and future changes in projected human needs for water. In addition, the development of management strategies for addressing environmental flow needs should be an ongoing, adaptive process that considers and addresses local issues.

The legislature also encouraged voluntary water and land stewardship to benefit the water in the state. *Id.* at §11.0235(b). Indeed, there is a legislative recognition that voluntary management may be the only method for environmental flow protection in some parts of the state. Texas Water Code §11.0235(d-3) states:

(d-3) The legislature finds that:

(1) in those basins in which water is available for appropriation, the commission should establish an environmental set-aside below which water should not be available for appropriation; and

(2) in those basins in which the unappropriated water that will be set aside for instream flow and freshwater inflow protection is not sufficient to fully satisfy the environmental flow standards established by the commission, a variety of market approaches, both public and private, for filling the gap must be explored and pursued.

These last policy statements reveal what many parties interested in the environmental flows allocation process may not realize; while environmental flow standards may set out desired conditions for instream flows and freshwater inflows, the standards are not a mechanism to actually provide water to meet those flow conditions. Whether water is unappropriated or otherwise available to meet environmental flow needs is a different inquiry. The actual implementation to provide water can come in the form of an environmental flow set-aside. Voluntary donations of water or voluntary management of water rights are also tools to provide water for environmental flow needs. In most areas, protection of the flow settings laid out in environmental flow standards will be implemented via special restrictive conditions in new permits.

### **C. The New Language of Environmental Flow Protection**

The Senate Bill 3 process introduces new and complex concepts related to the protection of rivers and bays and estuaries. Environmental flow protection is measured against a standard of adequate to support a sound ecological environment. Statutory definitions illustrate the integration of the quantity of flow, the geographic uniqueness, the distribution and seasonality of flows, and habitat needs of natural systems. For example, an environmental flow regime is defined as:

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.

TEX. WATER CODE §11.002 (16) (Vernon 2008).

The task of expert science teams to develop environmental flow regime recommendations requires an environmental flow analysis defined as, “the application of a scientifically derived process for predicting the response of an ecosystem to changes in instream flows or freshwater inflows.” *Id.* at §11.002 (15).

Environmental flow standards adopted by the commission must be “adequate to support a sound ecological environment, to the maximum extent reasonable considering other public interests and other relevant factors.” *Id.* at §11.1471(a)(1). The standards must consist of “a schedule of flow quantities, reflecting seasonal and yearly fluctuations that may vary geographically by specific location in a river basin and bay system.” *Id.* at §11.1471(c).

These definitions point out that these are not your father’s old environmental flow provisions. The new regulatory setting requires a multi-faceted and comprehensive approach to defining environmental needs. Inter-disciplinary teams of experts must work together to meet

the challenges and expectations of these new requirements. The Lyons Method is unlikely to be seen again when addressing environmental flow impacts in water rights permitting.

#### **D. Priority of Basin and Bay Systems and Associated Timelines**

Senate Bill 3 lays out a time priority order for the development of environmental flow regime recommendations and adoption of environmental flow standards by the commission. In descending time order, the priority is as follows:

**Group 1:** The river basins and bay systems of the Trinity and San Jacinto Rivers and Galveston Bay, and the Sabine and Neches Rivers and Sabine Lake Bay.

**Group 2:** The river basins and bay systems of the Colorado and Lavaca Rivers and Matagorda and Lavaca Bays, and the Guadalupe, San Antonio, Mission, and Aransas Rivers and Mission, Copano, Aransas, and San Antonio Bays.

**Group 3:** The river basins and bay systems of the Nueces River and Corpus Christi and Baffin Bays; the Rio Grande, the Rio Grande estuary and the Lower Laguna Madre; and the Brazos River and its associated bay and estuary system.

TEX. WATER CODE §11.02362(b) (Vernon 2008).

While the statute contains deadlines for the appointments and tasks of the Group 1 basins, late appointments to the EFAG resulted in missed deadlines. Group 1 basins were to have all appointments and tasks completed in a timeframe whereby the commission could adopt environmental flow standards no later than September 1, 2010. *Id.* at §§11.02362(c). When the EFAG met on July 24, 2008, it adopted a revised schedule for the Group 1 basins and a preliminary schedule for the additional priority basins. *See* Attachment A. Under the revised schedule, environmental flow standards for the Trinity/San Jacinto and the Sabine/Neches basins should be adopted by December 1, 2010.

There are also statutory deadlines for the appointment of stakeholder groups in basin and bay systems named in Groups 2 and 3. TEX. WATER CODE §§11.02362(c)(4)-(5) (Vernon 2008). However, again, because of delays in the stakeholder appointment process, those statutory deadlines were not met for Group 2 and likely cannot be met for Group 3. The deadlines for the recently appointed Group 2 basins are a little uncertain. Time frames for the naming of the local science teams, recommendations for environmental flow regimes by those teams, and adoption of flow standards by the commission is left to the discretion of the advisory group, which must establish a schedule resulting in the adoption of flow standards as soon as is reasonably possible. *Id.* at §11.02362(d). The July 24, 2008 schedule was not re-visited by the EFAG when it met on September 30, 2009 to appoint the stakeholder committees for Group 2 basins. The delayed Group 2 appointments resulted in missed deadlines set out in the EFAG revised schedule. It is thought that the Group 2 schedules will be revised at the next EFAG meeting with time periods consistent with those that were set for Group 1 basins in the adopted schedule. The EFAG shall consider recommendations by the stakeholder committees and science teams in Groups 2 and 3, along with recommendations by TCEQ, TPWD and the Texas Water Development Board when establishing an appropriate schedule for each basin and bay system. *Id.*

The Advisory Group is charged to establish a schedule for the development of environmental flow regime recommendations and the adoption of flow standards for river basins and bay systems not listed within the priority groups described above. *Id.* at §11.02362(e). This requirement for scheduling action by the Advisory Group does not prohibit “an effort to develop information on environmental flow needs and ways in which those needs can be met by a voluntary consensus-building process” in the non-priority basins. *Id.* The take home message from that provision is that stakeholders and others who wish to get a head start on Senate Bill 3 activities before the EFAG establishes an official schedule are free to do so.

Finally, Senate Bill 3 also considered an alternative avenue to establish a stakeholder committee. The Texas Water Code provides that if the commission, by permit or order, has established an estuary advisory council with specific duties related to implementing permit conditions for environmental flows, such a council may continue and must act as the stakeholder committee, subject to the same operational and membership requirements as other stakeholder committees. *Id.* at §11.02362(r). The Nueces Estuary Advisory Council (NEAC) is the only estuary advisory council in the state. It was created in 1992 by an Agreed Order issued by the Texas Water Commission (now the Texas Commission on Environmental Quality). The NEAC is charged with assessing the effectiveness of water management strategies, including freshwater inflow requirements, related to Choke Canyon Reservoir, Lake Corpus Christi, and associated estuary systems. While the Nueces basin and bay system is listed as part of the Group 3 priority basins, the NEAC has already engaged in preliminary efforts to address environmental flow protection as set out by Senate Bill 3.

### **III. From Start to Finish: the Stages and Players of Senate Bill 3**

#### **A. Framework and Sequence**

There are five distinct stages, each with its own set of participants, to the structure of the Senate Bill 3 regulatory scheme:

1. Establishment of statewide Environmental Flows Advisory Group (EFAG or Advisory Group); EFAG appoints a Texas Environmental Flows Science Advisory Committee (SAC) and Basin and Bay Area Stakeholders Committee (BBASC) for defined river basin and bay systems.
2. Environmental flow analysis and environmental flow regime recommendations developed by a Bay and Basin Expert Science Team (BBEST or science team); guidance to BBEST provided by SAC.
3. Basin and Bay Area Stakeholders Committee (BBASC) provides TCEQ with comments and recommendations regarding the BBEST environmental flow regime along with recommendations regarding environmental flow standards and strategies to meet standards;

BBASC also creates work plan that establishes periodic review of environmental flow analyses, regime recommendations, flow standards, and strategies to meet standards, to occur at least once every 10 years; plan prescribes specific monitoring, studies, and activities and establishes schedule for continuing

validation or refinement of environmental flow analyses, regime recommendations, flow standards, and strategies to meet standards.

4. TCEQ environmental flow standards developed and adopted through notice and comment rulemaking procedures.

5. TCEQ implements environmental flow standards through conditions in new permits and through establishment of environmental flow set-asides.

TEX. WATER CODE §§11.0236(a)-(l), §1102361(e)(1), 11.02362(c)(3)-(4), 11.02362 (m)-(p), 11.147(e-1)-(e-3) and §11.1471 (Vernon 2008).

### **1. Environmental Flows Advisory Group and Environmental Flows Science Advisory Committee**

The Environmental Flows Advisory Group performs an oversight function for the process of developing environmental flow standards. The EFAG is composed of nine members; three of which are members of the House of Representatives appointed by the speaker; three are members of the Senate appointed by the lieutenant governor; and three are appointed by the governor. Of the members appointed by the governor, one must come from the Parks and Wildlife Commission, one from the Texas Water Development Board (board), and one from the commission. TEX. WATER CODE § 11.0236(b) (Vernon 2008).

The Advisory Group provides a continuing inquiry into how the state should address environmental flow protection:

The advisory group 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. In evaluating the options for providing adequate environmental flows, the advisory group shall take notice of the strong public policy imperative that exists in this state recognizing that environmental flows are important to the biological health of our public and private lands, streams and rivers, and bay and estuary systems and are high priorities in the water management process.

*Id.* at § 11.0236(i).

The EFAG must address ways the ecological soundness of rivers and bays and estuaries will be ensured in the water rights administration, enforcement, and water allocation process, and must address appropriate methods of encouraging voluntary conversions of existing water rights for environmental flow protection.<sup>3</sup> *Id.* The Advisory Group must submit a report to the

---

<sup>3</sup> The practice of amending water rights to convert the use to or add a use of instream flows dedicated to environmental needs or bay and estuary inflows was confirmed by Senate Bill 3. However, the bill expressly

governor and legislature not later than December 1, 2008 and every two years thereafter summarizing its hearings and studies, legislative recommendations, and progress on development of flow recommendations. *Id.* at §11.0236(1).

To support the EFAG, Senate Bill 3 establishes a Texas Environmental Flows Science Advisory Committee (SAC), composed of between five and nine members appointed by the EFAG. SAC members must be “persons who will 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.” *Id.* at §11.0236(1)(b). The SAC has wide-ranging functions:

(e) The science advisory committee 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; and

(2) develop recommendations to help provide overall direction, coordination, and consistency relating to:

(A) environmental flow methodologies for bay and estuary studies and instream flow studies;

(B) environmental flow programs at the commission, the Parks and Wildlife Department, and the board; and

(C) the work of the basin and bay expert science teams described in Section 11.02362.

*Id.* at §11.02361(e).

The nine member SAC was appointed July 24, 2008 and has maintained a monthly meeting schedule since its inception. A wealth of literature, data, studies, presentations, technical analyses, and technical tools related to the science of environmental flows and the development of environmental flow regimes can be found on the SAC website, along with numerous SAC authored guidance documents intended to assist other Senate Bill 3 participants. [http://www.tceq.state.tx.us/permitting/water\\_supply/water\\_rights/eflows/txenvironmentalflowssa.html](http://www.tceq.state.tx.us/permitting/water_supply/water_rights/eflows/txenvironmentalflowssa.html) Anyone interested in the intricacy, complexity, uncertainties, hurdles, and general hard work associated with meeting the challenge to identify appropriate environmental flow regimes should take a close look at the SAC website contents.

The EFAG was also charged with defining the geographical extent of each river basin and bay system in the state for the sole purpose of developing environmental flow regime recommendations under Texas Water Code Section 11.02362 and the adoption of environmental flow standards under Section 11.1471.

For each river basin and bay system identified as priority groups in Texas Water Code §11.02362(b), the EFAG is required to appoint a Basin and Bay Area Stakeholders Committee,

---

prohibits the commission from issuing a *new* permit for instream flows dedicated to environmental needs or bay and estuary inflows. TEX. WATER CODE §11.0237 (Vernon 2008).

(BBASC or stakeholders committee). TEX. WATER CODE §11.02362 (Vernon 2008). A stakeholders committee consists of at least 17 members and the membership of each committee must reflect a fair and equitable balance of interest groups concerned with the particular river basin and bay system for which the committee is established. *Id.* at §11.02362(f).

A final task of the EFAG is to review, and at its option, weigh in on proposed environmental flow regimes. The statute provides:

(q) In accordance with the applicable schedule specified by or established under Subsection (c), (d), or (e), the advisory group, with input from the science advisory committee, 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.

*Id.* at §11.02362(q).

## **2. Environmental flow analysis and environmental flow regime recommendations developed by a Bay and Basin Expert Science Team**

A Basin and Bay Area Stakeholders Committee must establish a Bay and Basin Expert Science Team (BBEST or science team) within six months of the establishment of the committee. TEX WATER CODE §11.02362(i) (Vernon 2008). Each science team must be composed of technical experts with special expertise regarding the river basin and bay system or regarding the development of environmental flow regimes; a person may serve as a member of more than one basin and bay expert science team at the same time. *Id.*

Each BBEST is required to develop environmental flow analyses, defined as “the application of a scientifically derived process for predicting the response of an ecosystem to changes in instream flows or freshwater inflows.” *Id.* at §§11.002(15) and 11.02362(m). Each science team shall develop a recommended environmental flow regime for the river basin and bay system for which the team is established. *Id.* at §11.02362(m). The science team must work through “a collaborative process designed to achieve consensus.” *Id.* The BBEST exercise has distinct boundaries; in developing the analyses and recommendations, the science team “must consider all reasonably available science, without regard to the need for water for other uses, and the science team’s recommendations must be based solely on the best science available.” *Id.*

Each science team is required to submit its analyses and flow regime recommendations to the stakeholders committee, the EFAG, and the commission. The stakeholders committee and the EFAG are prohibited from changing the analyses or recommendations of the science team. *Id.* at §11.02362(n).

With regard to the Rio Grande basin and bay system, in developing flow regime recommendations, the applicable science team must exclude any uses attributable to Mexican water flows for the Rio Grande below Fort Quitman and may not recommend any flow regime that would result in a violation of a treaty or court decision. *Id.* at §§11.02362(n) and (o). In

developing its recommendations, the Rio Grande stakeholder committee must also consider the water accounting requirements of any international water sharing treaty, minutes and agreements applicable to the Rio Grande, and the effects of allocation of water on the Rio Grande watermaster in the middle and lower Rio Grande. *Id.*

### **3. Basin and Bay Area Stakeholders Committee Recommendations, Strategies, and Work Plan**

For each river basin and bay system identified as priority groups in Texas Water Code §11.02362(b) the EFAG is required to appoint a Basin and Bay Area Stakeholders Committee, (BBASC or stakeholders committee). TEX. WATER CODE §11.02362(f) (Vernon 2008). The stakeholders committee must consist of at least 17 members and must reflect a fair and equitable balance of interest groups concerned with the particular river basin and bay system. *Id.* The membership must:

- (2) be representative of appropriate stakeholders, including the following if they have a presence in the particular river basin and bay system for which the committee is established:
  - (A) agricultural water users, including representatives of each of the following sectors:
    - (i) agricultural irrigation;
    - (ii) free-range livestock; and
    - (iii) concentrated animal feeding operation;
  - (B) recreational water users, including coastal recreational anglers and businesses supporting water recreation;
  - (C) municipalities;
  - (D) soil and water conservation districts;
  - (E) industrial water users, including representatives of each of the following sectors:
    - (i) refining;
    - (ii) chemical manufacturing;
    - (iii) electricity generation; and
    - (iv) production of paper products or timber;
  - (F) commercial fishermen;
  - (G) public interest groups;
  - (H) regional water planning groups;
  - (I) groundwater conservation districts;
  - (J) river authorities and other conservation and reclamation districts with jurisdiction over surface water; and
  - (K) environmental interests.

*Id.*

As noted above, the stakeholders committee is prohibited from changing the analyses or recommendations of the science team. *Id.* at §11.02362(n). While the stakeholders committee is required to review the BBEST analyses and recommendations, it is charged with also considering other factors such as present and future needs for water for other uses related to water supply planning in the pertinent river basin and bay system. *Id.* at §11.02362(o). Possible

benefits of this arrangement are the protection of science from policy within the science team's work and the avoidance of protracted debates about the science by the stakeholders. The stakeholders simply take the science team's recommendations and begin to evaluate them in light of other relevant factors. It is hoped that stakeholders with a vested interest in their basin and bay system will bring to the table all the relevant history, desires, knowledge of future projects and water demands and local perspectives necessary to customize an appropriate environmental flow regime. The Senate Bill 3 process is consensus based; stakeholders committees have an arduous task to bring diverse interests together and operate on a consensus basis to the maximum extent possible. *Id.* at §§11.0235(d-6) and 11.02362(o).

Regardless of the fact that the BBEST and the BBASC are assigned separate and independent tasks, nothing in Senate Bill 3 prohibits the two groups from interacting. For practical purposes, it may be best that the two groups stay in close contact and benefit from the knowledge of the members in each group. Because of tight deadlines, it may be advantageous for a stakeholders committee to keep abreast of the ongoing work of its science team and to foster good working relationships with the scientists. Stakeholders can ask questions along the way rather than be faced with starting from square one the day the science team submits its recommendations. Again, this new process involves the integration of several scientific disciplines, the review of best available science and information, and most likely, a significant amount of expert opinion and best professional judgment. With an understanding of the foundation and the specifics of the environmental flow regime recommendations upon receipt from the science team, stakeholders can immediately layer in policy considerations and begin to craft their own recommendations about an environmental flow regime. Additionally, stakeholders need not delay working on their own tasks until after the science team is finished; they can begin gathering and developing the information on the factors they need to consider as soon as they are established. It may be possible that information collected by the stakeholders is useful to the science team as it works through its tasks.

Each stakeholders committee shall submit to the commission its comments on and recommendations regarding the basin and bay expert science team's recommended environmental flow regime. *Id.* at §11.02362(c)(4). The stakeholders must also 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 accordance with the applicable schedule. *Id.* at §11.02362(o).

The Senate Bill 3 process recognizes the need for continuing action regarding environmental flow protection. Time is needed to fill gaps in data and science. Time is needed to monitor and assess earlier recommendations and to consider changing conditions. Time is needed to root out means for providing water to support a sound ecological environment. To that end, stakeholders are given the task of planning for the future. The Water Code provides that, after submitting the required environmental flow standard and regime recommendations to the commission and EFAG, each stakeholders committee, with assistance from its science team, must prepare a work plan for approval by the EFAG. *Id.* at §11.02362(p). The work plan must:

- (1) 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;
- (2) prescribe specific monitoring, studies, and activities; and

(3) 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.

*Id*

#### **4. Adoption of Environmental Flow Standards and Set-Asides by the Commission**

The TCEQ, by rule, is to adopt environmental flow standards for each river basin and bay system in this state “that are adequate to support a sound ecological environment, to the maximum extent reasonable considering other public interests and other relevant factors.” TEX. WATER CODE §11.1471(a)(1) (Vernon 2008). In adopting flow standards, the commission must consider:

- (1) the definition of the geographical extent of the river basin and bay system adopted by the advisory group under Section 11.02362(a) and the definition and designation of the river basin by the board under Section 16.051(c);
- (2) the schedule established by the advisory group under Section 11.02362(d) or (e) for the adoption of environmental flow standards for the river basin and bay system, if applicable;
- (3) the environmental flow analyses and the recommended environmental flow regime developed by the applicable basin and bay expert science team under Section 11.02362(m);
- (4) the recommendations developed by the applicable basin and bay area stakeholders committee under Section 11.02362(o) regarding environmental flow standards and strategies to meet the flow standards;
- (5) any comments submitted by the advisory group to the commission under Section 11.02362(q);
- (6) the specific characteristics of the river basin and bay system;
- (7) economic factors;
- (8) the human and other competing water needs in the river basin and bay system;
- (9) all reasonably available scientific information, including any scientific information provided by the science advisory committee; and
- (10) any other appropriate information.

*Id.* at §11.1471(b).

Environmental flow standards adopted by the commission must consist of “a schedule of flow quantities, reflecting seasonal and yearly fluctuations that may vary geographically by specific location in a river basin and bay system.” *Id.* at §11.1471(c).

Texas Water Code Section 11.1471(a) requires the commission “to establish an amount of unappropriated water, if available, to be set aside to satisfy the environmental flow standards to the maximum extent reasonable when considering human water needs.” A set-aside, except one in the middle and lower Rio Grande basins, will be assigned a priority date corresponding to the date the commission receives the environmental flow regime recommendations from the

applicable Basin and Bay Expert Science Team. *Id.* at §11.1471(e). Each set-aside shall be included in the appropriate commission water availability model. A set-aside may be made available temporarily for other essential beneficial uses if the commission finds that an emergency exists that cannot practically be resolved in another way. *Id.* at §11.148.

## **5. Implementation of Environmental Flow Standards and Set-Asides and Revision of Standards**

The TCEQ is required to create procedures for implementing adjustments of permit conditions established before the adoption of standards or set-asides. TEX. WATER CODE §11.1471(a)(3) (Vernon 2008).

Various water rights permitting provisions in the Texas Water Code were amended to integrate requirements relating to environmental flow standards and set-asides. Section §11.023(a) provides that state water may be appropriated for certain enumerated purposes but only to the extent that such water has not been set aside by the commission to meet environmental flow needs. Section §11.134, relating to conditions for the issuance of a permit, requires the commission to consider any applicable environmental flow standards. *Id.* at §11.134(b)(3)(D). Section 11.147, relating to effect of permit on bays and estuaries and instream uses, requires the commission to apply any applicable environmental flow standards, including any set-asides, for the purpose of determining the environmental flow conditions necessary to maintain freshwater inflows, existing instream uses and water quality, or fish and aquatic wildlife in the permitting process. *Id.* at §11.147(e-3).

The commission may not issue a permit for a new appropriation or an amendment to an existing water right that increases the amount of water authorized to be stored, taken or diverted, if the permit or amendment would impair any flow set-aside established by the commission. New permits or amendments to existing water rights that increase the amount of water authorized to be stored, taken or diverted issued after adoption of flow set-asides must contain provisions to ensure protection of the set-aside. *Id.* at §11.1471(d).

Any permit for a new appropriation or an amendment to an existing water right that increases the amount of water authorized to be stored, taken or diverted must include a provision allowing the commission to adjust the conditions included in the permit or amended water right to provide for protection of instream flows or freshwater inflows. *Id.* at §11.147(e-1). With respect to an amended water right, the adjustment applies only to the increase in amount of water to be stored, taken or diverted. *Id.*

For permits issued on or after September 1, 2007, the commission must determine if adjustment is appropriate through an expedited public comment period. *Id.* The adjustment:

- (1) in combination with any previous adjustments made under this subsection may not increase the amount of the pass-through or release requirement for the protection of instream flows or freshwater inflows by more than 12.5 percent of the annualized total of that requirement contained in the permit as issued or of that requirement contained in the amended water right and applicable only to the increase in the amount of water authorized to be stored, taken, or diverted under the amended water right;

(2) must be based on appropriate consideration of the priority dates and diversion locations of any other water rights granted in the same river basin that are subject to adjustment under this subsection; and

(3) must be based on appropriate consideration of any voluntary contributions to the Texas Water Trust, and of any voluntary amendments to existing water rights to change the use of a specified quantity of water to or add a use of a specified quantity of water for instream flows dedicated to environmental needs or bay and estuary inflows as authorized by Section 11.0237(a), that actually contribute toward meeting the applicable environmental flow standards.

*Id.*

Additionally, a water right holder who makes a contribution or amends a water right for environmental flows is entitled to appropriate credit for the benefits of the contribution or amendment against any required adjustment of the holder's water right. *Id.* at §§11.147(e-2) and (e-3).

The commission is allowed to alter an environmental flow standard or set-aside in a rulemaking process undertaken in accordance with a schedule established by the commission and involving stakeholder participants from the particular basin. In establishing a schedule, the commission must consider the applicable stakeholders committee work plan. As noted above, in recognition of the importance of adaptive management, each stakeholders committee, in consultation with its science team, submits a work plan for approval by the EFAG. *Id.* at §11.02362(p). The work plan: establishes a periodic review of environmental flow analyses, regime recommendations, and flow standards to occur at least once every 10 years; recommends specific monitoring and studies; and establishes a schedule for validation and refinement of flow standards and strategies to achieve those standards. *Id.* at §11.02362(p)(1) – (3). The commission schedule may not provide for the rulemaking process to occur more frequently than once every ten years, unless the approved stakeholder work plan provides for periodic review to occur more frequently. In that instance, the commission “may provide for the rulemaking process to be undertaken in conjunction with the periodic review if the commission determines that schedule to be appropriate. A rulemaking process undertaken under this subsection must provide for the participation of stakeholders having interests in the particular river basin and bay system for which the process is undertaken.” *Id.* at §11.1471(f).

## **B. Abolishment of Senate Bill 3 Appointed Advisory Groups, Committees and Teams**

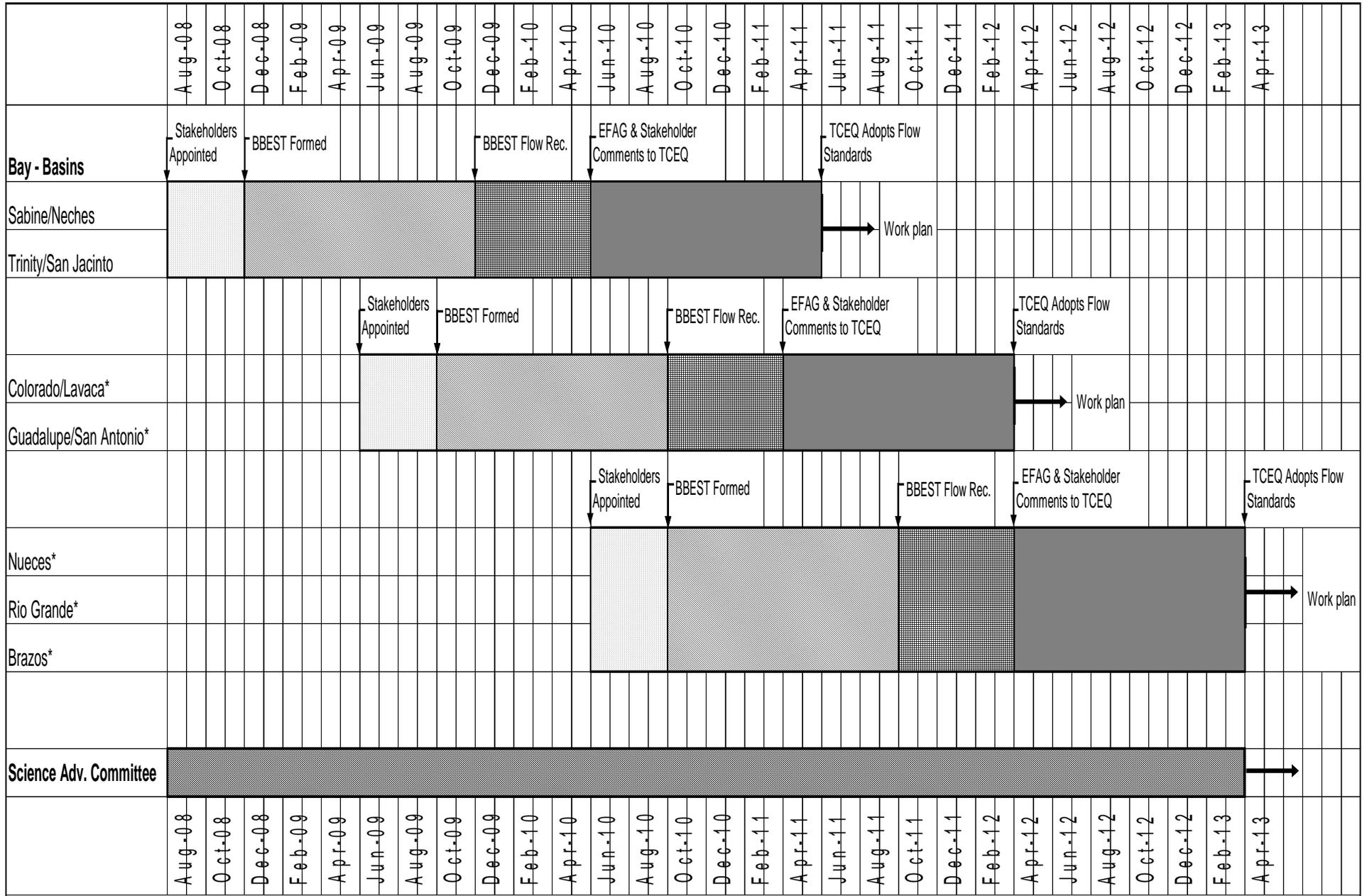
At the conclusion of the development of flow standards by the commission for all of the river basin and bay systems in the state, the Environmental Flows Advisory Group, the Science Advisory Committee, and all stakeholders committees and science teams are abolished. TEX. WATER CODE §§11.0236(m), 11.02361(g), and 11.02362(s) (Vernon 2008).

## **IV. Conclusion**

A full understanding of environmental flow protection in water rights administration today requires knowledge of existing commission practices and of the adjustments of special conditions that may be imposed upon new permits and certain amended permits. Both the fields of technical inquiry and public participation in environmental flow protection decisions have

been greatly expanded under Senate Bill 3. The new environmental flows allocation process, with its local public participation, statewide oversight, and state agency action, represents a turn toward collaborative decision making in environmental protection issues. Additionally, the change from a limited technical examination of impacts to instream flows and freshwater inflows from one particular permit to a comprehensive look at a full basin and bay systems' environmental needs will greatly assist Texas in its efforts to understand and protect the state's valued and valuable natural resources.

# SB3/HB3 Revised Schedule



\* Note: Exact schedule for these bay-basins to be determined by the Environmental Flows Advisory Group.