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SB3 Permitting Guidelines

Introduction

In 2007, the 80th Legislature passed House Bill 3 (HB 3), relating to the management of the water resources of the state, including the protection of instream flows and freshwater inflows; and Senate Bill 3 (SB 3), relating to the development, management, and preservation of the water resources of the state. Both of these bills amended Texas Water Code (TWC) §11.1471 to require the Texas Commission on Environmental Quality (commission or TCEQ) to adopt rules related to environmental flow standards. On April 20, 2011, the commission adopted rules for the Sabine and Neches Rivers and Sabine Lake and the Trinity and San Jacinto Rivers and Galveston Bay. On August 8, 2012, the commission adopted rules for 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. On February 12, 2013, the commission adopted rules for the Nueces River and Corpus Christi and Baffin Bays, Brazos River and its associated bay and estuary system, and the Rio Grande, the Rio Grande estuary, and the Lower Laguna Madre.

Scope

Prior to HB 3/SB 3, the commission had authority to protect environmental interests as it permitted new appropriations of surface water or processed amendments to existing water rights. HB 3/SB 3 changed the process for new appropriations of water. For applications that do not request a new appropriation of water, the commission's Executive Director (ED) still intends to recommend permit special conditions, as appropriate, to protect environmental interests. The guidelines in this document are not intended to apply to applications that do not request a new appropriation of water. However, the numerical values in the adopted standards may be used in other permitting actions to provide consistency in water rights administration. Once environmental flow standards are adopted for a basin and bay system, the ED's objective or goal will be to protect the standards, along with the interests of senior water right holders, in the water rights permitting process for new appropriations and amendments that increase the amount of water to be taken, stored, or diverted. The guidelines in this document describe how the ED intends to formulate his recommendations for flow restriction special conditions for permits or amendments that request new appropriations of water and how the ED intends to address voluntary contributions and adjustments of permit conditions.

General Information About the Adopted Standards

The adopted environmental flow standards can be found in Chapter 298 of TCEQ's rules in Title 30 of the Texas Administrative Code (TAC). These rules include measurement points where the adopted standards apply, definitions, applicability, specific flow values for flow components, and freshwater inflow standards, where applicable. Table 1. below shows the specific subchapter for each river basin and bay system:

Table 1. Rules for specific basin and bay systems

Subchapter	Basin and Bay System
A	General Provisions
B	Trinity and San Jacinto Rivers and Galveston Bay
C	Sabine and Neches Rivers and Sabine Lake Bay
D	Colorado and Lavaca Rivers and Matagorda and Lavaca Bays
E	Guadalupe, San Antonio, Mission, and Aransas Rivers and Mission, Copano, Aransas, and San Antonio Bays
F	Nueces River and Corpus Christi and Baffin Bays
G	Brazos River and its associated bay and estuary system
H	Rio Grande, the Rio Grande estuary, and the Lower Laguna Madre

Water Availability

Staff evaluates applications for new appropriations of water using TCEQ's full authorization water availability model (WAM). In this model, all water rights are included at their full authorized amounts, reservoirs at their permitted capacities, and return flows are not included. The TCEQ WAMs will ultimately include all of the adopted environmental flow standards for rivers and streams for all of the measurement points in the rules. The adopted standards, including any pulse flow standards, will be added to the models as applications for new appropriations of water subject to those standards are processed. In some basin and bay systems, certain applications are exempt from high flow pulse requirements. Including the complete set of adopted instream standards (subsistence flows, base flows, and high flow pulses) in the WAM will protect high flow pulse standards from being permitted to smaller applicants for new appropriations. This ensures that the water availability analysis for a new permit will consider any downstream flow standards even though those downstream flow standards would not be included in the special conditions for that permit.

Under TCEQ's rules[1], the adopted standards will be included in the WAMs with a priority date that is the date on which the science team for that basin and bay system submitted its recommendations. This priority date has no other purpose. An application for a new appropriation will be assigned a modeled priority date junior to the adopted standards if the priority date of the new application is senior to the modeled priority date of the standards and the application is subject to the adopted standards. The modeled priority date does not change the actual priority date of the application.

Applicability of Measurement Points

Environmental flow standards at all measurement points in the adopted rules will be considered during the water availability analysis. The measurement points adopted in the rules are the only measurement points an applicant is required to include in its application. However, if the applicant requests, and the ED approves, special conditi0ns with more measurement points could be put in a permit. However, in any case, the permit special conditions would not require compliance with the standards at all downstream measurement points. For smaller applications with a single diversion point, the nearest measurement point is used in the flow restriction special condition in the permit. For example, if the measurement point was downstream of the proposed diversion location, the permit special condition would require that flows at the gage be maintained at or above the applicable standard when diversions occur. If the measurement point was upstream of the proposed diversion location, the permit special condition would add the proposed diversion rate to the values in the adopted standards for the measurement point.

For an application for a new appropriation of water in a coastal basin that does not include a measurement point, or in other limited circumstances, adopted standards may be translated from the nearest measurement point using the methods discussed below. In selecting a measurement point from which to translate adopted standards to a new location, staff could consider proximity, rainfall patterns, the number of measurement points in a basin, existing senior water rights, and hydrologic factors such as intervening tributary inflows.

[1] 30 TAC §§ 298.20, 298.215, 298.265, 298.315, 298.365, 298.415, 298.465, and 298.515

Translating Environmental Flow Standards

The goal of special conditions in a permit will be to protect the standards (30 TAC §298.15). If a different gage is used in order to take into account basin specific conditions and/or to facilitate and simplify water management and accounting for specific permits at the request of an applicant, staff would develop permit special conditions at a different gage(s). To the maximum extent reasonable and practicable, permit special conditions will be based on adopted standards at adopted measurement points.

Subsistence and Base Flows

If there is a need to pro-rate subsistence and base flow standards, these flow components will generally be pro-rated from standards at adopted measurement points using a drainage area ratio. However, there may be circumstances where staff would use a flow factor to translate subsistence and base flows. For example, TCEQ receives an application for a new appropriation located on a tributary stream (See Figure 1). In this example, the adopted standards for the basin include a measurement point at Gage A. Gage B is downstream but is not included as a measurement point in the adopted standards. First, staff would extract the naturalized flows for Gages A and B from the TCEQ WAM and calculate the total naturalized flow for the period of record for each season. Next, staff would calculate the difference between the total naturalized flows at Gages A and B for each season (incremental flow).

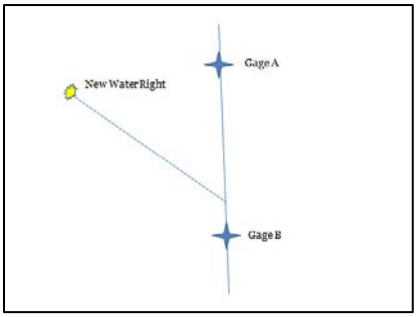

Figure 1. New water right located on a tributary stream

Staff would then calculate the total naturalized flows at the applicant's location for each season. Finally, for each season, staff would calculate the ratio of the seasonal naturalized flows at the applicant's location to the incremental flow (flow factor). The adopted subsistence and base flow standards at Gage A would then be multiplied by the flow factor to develop the permit condition for the new water right. At some locations in some basins there are months in the

period of record where naturalized flows at the upstream gage are greater than those at the downstream gage. This would result in negative incremental flows. In these cases, staff would consider the effect of negative incremental flows in developing the flow factor. If negative incremental flows are an issue at a particular location, staff could use a drainage area ratio to develop the flow factor.

Pulse flows

By rule, some smaller permits for new appropriations of water will not include pulse flow standards.[2] Pulse flow standards can be translated using the following method:

- Pulse flow requirements, i.e. *trigger flow*, *volume, and duration*, will be scaled to generate the values for these parameters at a different gage to develop a permit specific special condition.
- The *trigger flows* at the measurement point in the rule will be scaled using either the ratio of the naturalized mean annual flows of the corresponding stream reaches on the NHDPlus Version 2 dataset or the ratio of the mean annual naturalized flows from the TCEQ WAM for the applicable river basin.
- The *durations* at the measurement point will be scaled using a duration exponent obtained from a power law relationship between pulse volumes and trigger flows in a given basin.
- The *pulse volumes* will be related such that the pulse ratio, QD/V (where Q = the trigger level, D = duration, and V = volume), is the same at the measured and target locations.

Specific technical details regarding the pulse flow translation methodology are available at http://www.crwr.utexas.edu/reports/2013/rpt13-2.shtml

Bay and Estuary Evaluation

Consistent with the adopted rules, staff would not implement the freshwater inflow standards as special conditions in new water rights subject to the adopted standards. Staff will instead consider whether a new application impairs freshwater inflow standards as part of the water availability determination for new appropriations of water. Staff will evaluate whether a new application impairs freshwater inflow standards based on the WAM TCEQ uses for new appropriations. The TCEQ's permitting WAM includes all senior water rights at their full

[2] 30 TAC §§ 298.230, 298.285, 298.335, 298.385, 298.435, 298.485, 298.535

authorized amounts, reservoirs at their full permitted capacities, and does not include return flows. Staff will determine whether a new application impairs freshwater inflow standards based on the basin and bay specific criteria in the adopted rules.[3]

Staff processes permit applications for new appropriations in priority date order. If staff recommends that a permit be granted, the new permit will be included in the TCEQ WAM used to determine water availability for new appropriations and compliance with freshwater inflow standards for all subsequent permit applications. The WAM used to process applications will be available to applicants and others who request the model and will be posted on TCEQ's website. In addition, the spreadsheet calculators will be added to TCEQ's Water Availability Modeling website when TCEQ processes an application for a new appropriation of water for a river basin.

Galveston Bay

Staff will determine compliance with the volumes and frequencies in the rule.[4] Staff will run the WAM, with the proposed application included, during preliminary review of an application. If the model results indicate that the frequency requirements in the rule are met, staff will continue processing the application. If the model results indicate that the frequency requirements are not met, the applicant will be notified prior to administrative completeness and provided with an opportunity to modify the application. If the application does not meet the frequency requirements in the adopted standards, staff may recommend denial of the application. In the event that frequency requirements are not met prior to processing the first application for a new appropriation of water, staff will consider whether the application has the potential to worsen these existing conditions.

Matagorda, Lavaca, and San Antonio Bays

Consideration of freshwater inflow standards for these bay systems will generally follow the process outlined above for Galveston Bay. Impairment of the inflow regime will be determined using baseline values and modeled frequencies calculated using the TCEQ WAM in effect at the time the first application subject to the adopted standards is processed.[5] The adopted standards in these bay systems also provide for consideration of voluntary permitted strategies. Voluntary permitted strategies are those strategies that are implemented through a water right permit or

[3] 30 TAC §§ 298.225, 298.330, 298.380, and 298.430
[4] 30 TAC §298.225(a)
[5] 30 TAC §298.330(a) – (d) for Matagorda and Lavaca Bays and 30 TAC §298.380(a) – (b) for San Antonio and Mission Bays

amendment to help meet the freshwater inflow standards. In the event that an amendment is granted to help meet freshwater inflow standards, a subsequent water right application for a new appropriation of water cannot reduce the quantity or frequency of freshwater inflows below those that would occur in the TCEQ WAM with the permitted strategy or strategies in place.

Matagorda Bay

An application for a new appropriation in the Colorado River Basin cannot decrease the annual average freshwater inflow, at the most downstream point in the Colorado River Basin, below 60% of the long-term annual strategy quantity, decrease the modeled annual frequency of any inflow regime, or decrease the monthly inflow quantity to Matagorda Bay below 15,000 acre-feet per month.

Lavaca Bay

An application for a new appropriation in the Lavaca River Basin or Garcitas Creek cannot decrease the modeled annual frequency of any inflow regime level.

San Antonio Bay

An application for a new appropriation in the Guadalupe and San Antonio River Basins cannot impair the modeled permitting frequency of any inflow regime by more than the values set out in the adopted rule. Impairment will be calculated individually for each inflow regime level for which a specific frequency is identified in the adopted rule and will be calculated at the most downstream point in the water availability model. Impairment will be calculated by addition or subtraction of the specific values set out in the rule. For example, the modeled permitting frequencies for inflow regimes Spring 1, Spring 2, and Spring 2 and Spring 3 combined, and calculated as a percentage of total years, shall not be decreased by more than 5%.

Guidelines for §298.25: Process for Adjusting Environmental Flow Conditions in Certain Permits.

<u>Administrative Procedure for Adjustments</u>

Subsections (a) through (g) of §298.25 describe the administrative process for permit adjustments. The adjustment process would start on the petition of the ED. The adjustment would only apply to new appropriations and amendments that increased an appropriation that

are issued after September 1, 2007. All new appropriations of water issued after September 1, 2007 include a provision that allows for adjustment of environmental flow conditions, if appropriate, to achieve compliance with adopted environmental flow standards.

The ED's petition will be similar to an original application for a water right permit, but the title will indicate that it is for an adjustment to an environmental flow special condition. Notice for these petitions for adjustment of special conditions will be by first class mail to all water right holders and navigation districts in the basin, and the notice will be posted to the TCEQ's web site at least 30 days prior to action on the petition. The commission can act on the petition without holding a contested case hearing. The commission may hold a public meeting and will consider any public comment timely submitted. Subsections (e) and (f) provide that motions for reconsideration of the commission's action may be filed within 30 days by any of the following: the commission, the executive director, the water right holder, or the affected parties. If the commission grants a motion to reconsider, the commission can refer the matter to the State Office of Administrative Hearings.

After standards are adopted for the first three basin and bay systems, staff will review all permits and amendments subject to the standards, which were issued before the standards were adopted, and determine whether permit conditions should be adjusted. Staff will only adjust the permit conditions but would not necessarily include the standards in these permits. However, the permit conditions in these permits could be adjusted to include the standards if including the adopted standards in a new permit condition would result in an adjustment of less than 12.5% of the annualized amount of the existing permit condition.

Subsection (i) provides that any adjustments consider priority dates and diversion locations of other water rights in the same river basin that are subject to adjustment. Factors that may be considered in determining whether affected permits and amendments would be adjusted are the number and spatial locations of permits that are subject to the adopted standards in a river basin, the priority dates of these permits, and the extent to which existing special conditions in the permits subject to adjustment are consistent with and protective of the adopted standards for that basin.

Compliance with freshwater inflow standards is evaluated during the water availability determination for new permits, as discussed further in this document. Water availability was

already determined for permits granted after September 1, 2007 and before the standards were adopted. Staff does not intend to include special conditions for freshwater inflow standards in new permits; therefore, freshwater inflow special conditions will not added to these permits.

Technical Procedure for Adjustments

Subsection (h) of §298.25 implements the provision of TWC, §11.147 (e)(1) that the adjustment may not exceed 12.5% of the annualized total of the amount required to be adjusted. Any adjustments will only apply to new appropriations issued after September 1, 2007 and not to authorizations granted before this date. Subsection (h) requires that any new permit conditions be consistent with the adopted environmental flow standards to the maximum extent practicable. The 12.5% adjustment will be calculated as 12.5% of the original permit condition. Specifically, numeric conditions in a permit will be compared to the standards at the measurement point that would be applicable to that permit. In the case of locations that are not near a measurement point, an appropriate standard may be developed as described in the section below relating to Translating Environmental Flow Standards. This standard will be compared to the existing permit condition to determine an appropriate adjustment.

The 12.5% calculation for base flow environmental flow conditions expressed in cubic feet per second is calculated based on a simple 12.5% increase to the numerical value of the flow condition. As discussed above, staff will individually review permits requiring adjustment. The specific adjustment for an individual permit will be applied after appropriate consideration of both environmental and water supply needs. The adjustment, in combination with all previous adjustments, cannot increase the annualized flow requirement above the sum of the original annualized flow requirement plus the original 12.5% adjustment. A simple example is shown in below:

	Winter	Spring	Summer	Fall	Annualized Requirement	Annualized Requirement Plus 12.5%
Permit Condition (cfs)	178	275	100	300	853	960
Adopted Standard (cfs)	300	450	200	350		
Adjusted Condition (cfs)	200	309	112.5	337.5	960	

For environmental flow conditions for high flow pulses that may have a peak flow component expressed in cubic feet per second, a duration expressed in days, and a total volume expressed in acre-feet, the adopted rule uses a 12.5% increase of the total volume of the condition annualized

by totaling all the required pulses per year. Application of this adjustment will consider both environmental and water supply needs. The adjustment could be simply an increase to the existing pulse volumes. The 12.5% adjustment for pulse conditions would be calculated as follows:

Season	Pulse	12.5% Adjustment*	Potential New Permit Condition
Winter	1 per season Volume: 5,932 af	742 af	1 per season Volume: 6,674 af
Spring	2 per season Volume: 5,062 af	1266 af	2 per season Volume: 5,695 af
Summer	1 per season Volume: 671 af	84 af	1 per season Volume: 755 af
Fall	2 per season Volume: 2,189 af	547 af	2 per season Volume: 2,463 af
	Total Adjustment	2639 af	

- Note that there are two pulses per season in the Spring and Fall seasons in this example

Staff may consider alternatives to the simple adjustment of pulse conditions described above on a permit-specific basis.

Consideration of Voluntary Contributions

Section 298.25(j) implements the provisions of TWC, 11.147(e)(1) and (e)(2) that call for appropriate consideration of voluntary contributions to the Texas Water Trust, voluntary amendments to existing water rights to change the use or add a use for instream flows dedicated to environmental needs or bay and estuary inflows, and the appropriate credit for those contributions or amendments when determining adjustments to permits. The intent of this provision is to ensure that water dedicated to the environment that would receive full credit for the dedicated amount is available often enough to reliably provide protection to the environment. Water rights vary in reliability or the amount of time that water is actually present in the watercourse. A contribution of reliable water or amendment for instream uses and bay and estuary freshwater inflows should be entitled to higher consideration and credit than a similar contribution or amendment of less reliable water. More reliable water, defined as water where the total volume is available in at least 75% of the years, is entitled to full credit. Water that is available in less than 75% of the years is entitled to a 50% credit. Determination of

how often the water is available will be based on the full authorization version of the TCEQ's water availability models. These availability amounts do not represent how much water is physically present in the stream at a given time. They are intended to be used for purposes of performing a mathematical calculation of the amount of the credit.

The amount of water must be evenly distributed over the full year. For example, a water right holder seeking credit or consideration under the rule would not be able to specify that their 10,000 acre-foot donation should be considered as being made only in June, July, and August, unless the original water right only allowed diversions in those months. For water rights amended to add a use for instream flows dedicated to environmental needs or bay and estuary inflows, the water right holder retains the ability to use the water right for its original purposes. The rule gives the water right holder credit for 50% of the amount, so long as that amount is not used for its original purposes. The Executive Director can distribute the credit for a contribution of stored water to the Texas Water Trust in a different manner in order to provide maximum benefit to the environment. For example, stored water could be used to produce one or more pulse flows.