Brazos River and Its Associated Bay and Estuary System *as of Aug 2023*

Instream flows, number of measurement points: The expert science team recommended flow levels at 19 measurement points in the Brazos River Basin and 1 measurement point in the San Bernard Basin. TCEQ adopted flow standards for the same number of measurement points, although a different measurement point was substituted for one of the science team recommendations. Unfortunately, TCEQ does not require the use of the protected flow regimes at those points to calculate protection levels to be applied at additional flow gages. As a result, even with numerous measurement points, compliance with flow protections for individual permits often is based on flow levels at very distant gages, sometimes on a different stream. That means a diversion that dries up a local stream may "comply" with flow standards if there is flow at the distant measurement point.

Instream flows, diversions down to subsistence levels: The expert science team recommended that diversions below baseflow levels—approaching subsistence levels—should only be allowed during the driest 25% of months. Because subsistence flows represent very low levels intended to be reached only rarely during droughts, aquatic species are at risk at those levels. The adopted flow standards allow diversions down to levels that may approach subsistence levels at any time flows at the relevant measurement point are below the baseflow level. If impoundment or diversion under older permits without flow protections causes flows to drop below baseflow level, flow protections applicable for new permits also drop, just when more protection under new permits is most needed. Consistent with science team recommendations, the flow standards apply a "50% rule" to limit how quickly flows drop to subsistence levels: the permit holder can divert, or impound, only half of the flow between the subsistence level and the applicable baseflow level. So, if flow at the measurement point is 100 cfs and the subsistence level is 50 cfs, in theory, the permit holder only gets 25 cfs. However, the 50% rule really can only work if there is a nearby measurement point, which is rare.

Instream flow, levels of baseflows: The expert science team recommended three different levels of baseflows, representing dry, average, and wet conditions because different species do better with different flow levels. The flow standards adopted by TCEQ match the science team recommendations.

Instream flows, levels of pulse flows: The expert science team recommended multiple levels (5-7 ranging from small to large, depending on location) of pulse flows for protection, with all levels applicable during all flow conditions. The adopted flow standards include only 3 levels of pulse flows and only one of those levels is applicable at any time based on whether flow conditions are dry, average, or wet.

Instream flows, strategy targets: Under the applicable statute (SB 3), flow standards, in addition to establishing criteria for new permits, are intended to establish target levels of river flows and freshwater inflows to bays and estuaries to be met through the implementation of voluntary proactive strategies,

such as purchases of water rights, to improve impaired flow levels. There are no strategy targets for instream flows, or freshwater inflows, in these flow standards.

Freshwater inflows, drought period criteria: There is no separate bay associated with the Brazos River, but there is an estuarine portion of the river. That is also true for the San Bernard River. The expert science team concluded levels protected by the instream flow standards may be adequate to protect the estuary and did not recommend separate freshwater inflow protections. Because there are no separate freshwater inflow standards, only the subsistence flow level for instream flow protections and the 50% rule apply to protect inflows to the estuary during drought periods. And, even that protection depends on whether there are large older permits not subject to instream flow protections downstream of the last measurement point and on how restrictions on new permits in that same reach are managed.

Freshwater inflows, reopener mechanism: Senate Bill 3 directs that permits issued after Sept. 1, 2007, can be reopened to increase protection by a limited amount if flow standards later are amended to be more protective. Although there are no separate inflow protections, increased protections for instream flows, if those flows were passed all the way to the estuary, would increase protections for inflows.

Freshwater inflows, strategy targets: There are no targets to guide voluntary proactive strategies, such as purchases of existing water rights, to increase instream flows or bay inflows.

Overall: match with science team recommendations: The expert science teams were charged with developing recommendations adequate to protect a sound ecological environment. There are some big differences between the adopted standards and the science team recommendations, especially for pulse flows and subsistence-level flows, resulting in less flow protection than the science team recommended.