March 31, 2022

via email

Mr. James Totten, General Manager
Lost Pines Groundwater Conservation District

Mr. Trey Job, Assistant City Manager for Community Development
City of Bastrop

RE: April 4, 2022, Public Hearing on City of Bastrop's Application to the Lost Pines Groundwater Conservation District for Operating Permits for three proposed wells to be located in Bastrop County, Texas.

Dear Messrs. Totten and Job,

Environmental Stewardship is submitting Mr. George Rice's report: Effects of City of Bastrop's Proposed Pumping On Discharge of Groundwater to the Main Stem of the Colorado River (attached), along with our comments below for your consideration.

Mr. Rice's report predicts that the proposed City of Bastrop pumping, along with other District pumping, will likely cause an incremental decrease in the discharge of groundwater to the Main Stem of the Colorado River from the aquifers in the District by 2070. This incremental decrease is predicted to reduce the discharge (outflow) of the aquifers to the Colorado River by an amount that will cause the relationship of the river to the aquifer to become a "losing" stream by as early as about 2060. The reversal from a "gaining" to a "losing" relationship between the river and the aquifers is recognized by many scientists to be an unreasonable effect on the river. Environmental Stewardship also considers this to be a potential unreasonable effect on the river.

Environmental Stewardship also recognizes that the Groundwater Availability Model (GAM) is the best science currently available to evaluate such impacts. Further, it is recognized that the GAM currently has limitations that are based on the need for additional field data to validate such predictions so that they can be relied upon in making technical and policy decisions. This, along with the recognition that the City of Bastrop is requesting that the three wells be permitted in order to provide the City and it residents with a stable and secure water source, and that the City intends to retire six (6) wells in the Colorado Alluvial Aquifer (CAA), provides an opportunity for the City and the District to work together to take necessary actions to avoid the potential unreasonable impacts on the river by establishing a well monitoring system for the CAA and improve the reliability of its permit decisions.

A well monitoring system to determine if a stream is gaining or losing has been described by Steven Young (Young et al)[1] in section 4.1 of the 2017 report to the Colorado Lavaca Basin and Bay Area Stakeholder Committee (CL-BBASC) (attached), and has been used in the lower Colorado River Basin.

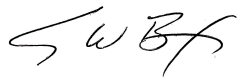
1 Steven Young, Toya Jones, Marius Jigmo. August 2017. Final Report: Field Studies and Updates to the Central Carrizo-Wilcox, Queen City, and Sparta GAM to Improve the Quantification of Surface Water-Groundwater Interaction in the Colorado River Basin

The proposed monitoring of the Colorado Alluvial Aquifer is based on the demonstrated methodology described in the above cited report as follows:

> ***4.1.4 Studies Including Stream Gages and Nearby Alluvium Water Wells***
> The most direct approach to determine whether a stream is gaining or losing is to compare the water elevation in the stream to the elevation of the water table in the aquifer or alluvial adjacent to the stream. This type of study was performed as part of the Lower Colorado River Authority-San Antonio Water System Water Project in the lower Colorado River Basin. This project included installing an alluvium well approximately 300 feet from the stream gage at the city of Wharton and at Bay City (URS and Baer Engineering, 2006; 2007). The alluvium wells were drilled with hollow stem augers and consisted of 4-inch diameter Schedule 40 Polyvinyl Chloride casing with 40-foot screens. (Emphasis added)

Environmental Stewardship appreciates the opportunity to provide this scientific input to the District and the Board as it considers the potential impacts of the City of Bastrop's request. We would consider implementation of a monitoring system such as described herein to be a major step forward in protecting the Colorado River and its tributaries, natural resources that are of great importance to the City, the District, and the residents of Bastrop and Lee Counties.

Respectfully,



Steve Box
Executive Director
Environmental Stewardship

cc: Ms. Sheril Smith, LPGCD Board President

Environmental Stewardship is a nonprofit organization whose purposes fall under the following categories: Public Policy - Aiming to protect, conserve, restore, and enhance the earth's natural resources in order to meet current and future needs of the environment and humans; Science & Ecology - Gathering and using scientific information to restore and sustain ecological services provided by environmental systems; and Outreach & Education - Providing environmental education and outreach that encourages public stewardship. We are a Texas nonprofit 501(c) (3) charitable organization. For more information visit our website at http://www.environmental-stewardship.org/.