

Edwards Aquifer Habitat Conservation Program

Preliminary Technical Evaluation of Potential ASR Leases and VISPO Forbearance Agreements East of Cibolo Creek

DRAFT Scope of Work HDR Engineering, Inc. / Todd Engineers June 30, 2014

The approved Edwards Aquifer Habitat Conservation Plan (EAHCP) includes four flow protection minimization and mitigation measures focused on maintenance of discharges from Comal and San Marcos Springs. These flow protection measures are identified as Voluntary Irrigation Suspension Program Option (VISPO), Regional Water Conservation Program, SAWS ASR Trade-Off, and Emergency Stage V Critical Period Management Reductions. Technical evaluation of these flow protection measures is summarized in an October 2011 report prepared by HDR Engineering, Inc. (HDR) and Todd Engineers which is included as Appendix K of the EAHCP. Pursuant to the requests of the EAHCP Stakeholder Committee ASR and VISPO Sub-Work Groups and the Program Manager, HDR proposes this Scope of Work to establish the benefits of ASR leases and VISPO forbearance agreements obtained east of Cibolo Creek. Specific tasks to be performed are summarized as follows:

1) Availability for ASR Leases or VISPO Forbearance Agreements

- a) Review and summarize Edwards Aquifer withdrawal permit amounts and recent historical uses east and west of Cibolo Creek.
- b) Obtain direction from the Program Manager regarding amounts and county assignment of potential ASR leases and/or VISPO forbearance agreements east or west of Cibolo Creek to be evaluated using the Edwards Aquifer Model.

2) Applications of Edwards Aquifer Model

- a) Obtain Program Manager approval of technical assumptions for application of the Edwards Aquifer Model to simulate the effects of potential ASR leases and/or VISPO forbearance agreements obtained east or west of Cibolo Creek on Comal and San Marcos Springs discharges focusing on the drought of record.
- b) Apply the Edwards Aquifer (MODFLOW) Model used for simulation of the EAHCP integrating approved technical assumptions, ASR lease amounts, and VISPO forbearance agreement amounts from Task 2(a).
- c) Modeling steps and technical assumptions are expected to include the following:
 - i. ASR lease and VISPO forbearance amounts east or west of Cibolo Creek (combined) will be modeled between the SAWS ASR Trade-Off (#3) and Emergency Stage V Critical Period Management Reductions (#4) flow protection measures and will be identified as Layer #3A. No structural changes to the 2011

- simulation of flow protection measures are to be included. Hence, model pumpage for Layers #1, #2, and #3 is the background pumping for Layer #3A.
- ii. A verification run will be performed to establish an “HCP Baseline” set of water levels at index wells and springflows.
 - iii. One level (e.g., 16,000 acft/yr) of ASR lease and VISPO forbearance obtained east of Cibolo Creek will be simulated. For comparison purposes, the same level of ASR lease and VISPO forbearance obtained west of Cibolo Creek will be simulated. In each of these simulations, IRP pumping reductions will be prorated by county based on Program Manager direction per Task 1(b) and among industrial, municipal, and irrigation use types in accordance with IRPs in these counties.
 - iv. Pumping of ASR leases obtained east or west of Cibolo Creek for ASR storage will be in the vicinity of SAWS Artesia and Stahl Pump Stations and will be triggered by discharge of 200 cfs from Comal Springs. When the flow is 200 cfs or greater, these ASR leases will be pumped, but the pumping rates will be subject to CPM restrictions. When the flow is less than 200 cfs, these ASR leases will not be pumped. The pumping schedule will be based on Comal Springs discharge from the HCP Baseline simulation [Task 2(c)(ii)]. Previous simulations suggest that Comal Springs discharge will exceed 200 cfs about 50 percent of the time.
 - v. Benefits to Comal and San Marcos Springs will be based on the difference in springflow between the HCP Baseline and the east and west of Cibolo Creek scenarios. Because these ASR lease and VISPO forbearance amounts will reduce pumping, CPM restrictions may be slightly relaxed by incrementally higher water levels. Hence, not all of the benefit of ASR leases and VISPO forbearance agreements will accrue to the springs.

3) Deliverables, Meeting, & Schedule

- a) Develop presentation materials summarizing pertinent results of applications of the Edwards Aquifer Model. Submit summary presentation materials to the Program Manager on or before _____, 2014 assuming direction regarding technical assumptions is received on or before _____, 2014.
- b) Prepare for and participate in one (1) meeting of the ASR or VISPO Sub-Work Group to present results of preliminary technical evaluation.

Estimated Budget = \$21,300