



MEMORANDUM

TO: Mayor and Council Members

FROM: Rosie Truelove, Capital Contracting Officer
Greg Meszaros, Director, Austin Water

DATE: January 26, 2016

SUBJECT: Additional information for January 28, 2016 Council Meeting agenda item

At the January 28, 2016 Council Meeting, the Capital Contracting Office will be requesting the Council's approval of an agenda item to authorize negotiation of a professional services agreement with CDM SMITH, INC. (staff recommendation) or one of the other qualified responders to Request For Qualifications Solicitation No. CLMP179, to provide consulting services for the Integrated Water Resource Plan in an amount not to exceed \$1,000,000.

The Capital Contracting Office and Austin Water staff worked closely with the Austin Integrated Water Resource Planning Community Task Force (Task Force) to ensure their input was captured in the scope of work during the solicitation process. The Task Force requested an opportunity to review the negotiated scope of work and fee in the agreement prior to seeking City Council approval. In consideration of the request, this Request for Council Action allows for negotiation of an agreement with the qualified responder that Council selects. Upon successful negotiation of an agreement, the Task Force will review the negotiated scope and fee; following the review, staff will present a Recommendation for Council Action for the execution of the agreement in May 2016.

In addition, in response to a request from the Task Force to review the experience of the staff recommend firm of CDM Smith, staff provided a summary of the project experience as noted in the Statement Of Qualification provided by CDM Smith and their respective Sub Consultants (TEAM) in response to Request For Qualifications Solicitation No. CLPM 179. We have enclosed this information for your review.

If you have any questions or need additional information please contact me.

Encl: Summary of CDM Smith, Inc. Team Experience

The below information provides a summary of the project experience as noted in the Statement Of Qualification provided by CDM Smith and their respective Sub Consultants (TEAM) in response to RFQ CLPM 179 Consulting Services for Integrated Water Resource Plan.

Evaluation Consideration Item 4: Project Manager's Experience

PROJECT #1: Long Range Water Resources Plan, San Diego Public Utilities Department

Firm Name Work Performed Under: CDM Smith Inc.

Completion Date: 2013

PROJECT #2: Water Integrated Resources Plan, Pasadena, California

Firm Name Work Performed Under: CDM Smith Inc.

Completion Date: 2011

PROJECT #3: Integrated Water Resources Plan, St. Johns County Utilities, Florida

Firm Name Work Performed Under: CDM Smith Inc.

Completion Date: 2015

Evaluation Consideration Item 4: Project Principal's Experience

PROJECT #1: Dallas Long Range Water Supply Plan, Dallas, Texas

Firm Name Work Performed Under: CDM Smith Inc.

Completion Date: June 2015

PROJECT #2: Raw Water Transmission Integration Study and Integrated Water Supply Plan, Tarrant Regional Water District, Fort Worth, Texas

Firm Name Work Performed Under: CDM Smith Inc.

Completion Date: Ongoing

PROJECT #3: Indirect Potable Permitting Study, Wichita Falls, Texas

Firm Name Work Performed Under: CDM Smith Inc.

Completion Date: December 2014

Evaluation Consideration Item 5: Prime Firm's Experience (CDM Smith, Inc.):

PROJECT #1: Los Angeles Integrated Resources Plan, City of Los Angeles

Completion Date: 2007

Project Description: Faced with droughts, rising costs of imported water, aging infrastructure, water quality and environmental challenges, the City of Los Angeles embarked on a new planning process called the Integrated Resources Plan (IRP). The City hired CDM Smith for the initial phase and the detailed plan (with CDM Smith serving as the lead firm of a joint venture). A stakeholder group of over 150 individuals participated in more than two dozen workshops to craft the vision and objectives for the IRP and brainstormed on potential strategies and options that were evaluated by the consultant team. A public outreach effort—involving community meetings, informational campaigns, website development, speaker's bureau, educational tours of facilities, and outreach materials—was also key in this project.

PROJECT #2: Water Supply Planning and Design, Santa Fe, New Mexico

Completion Date: September 2014

Project Description: CDM Smith was retained to conduct an integrated resource planning study of water supply options to meet Santa Fe's needs. Currently, Santa Fe obtains its water from three separate sources: the Santa Fe River, local groundwater wells, and contract water from the Rio Grande that is diverted using deep wells adjacent to the river. The city and county have contracted for 5,605 acre-feet per year of San Juan-Chama (SJC) water as part of an interbasin transfer of water from the San Juan River in Colorado. However, the existing deep wells are incapable of diverting the full contract water rights, so additional infrastructure is needed to divert and deliver Santa Fe's entire SJC allocation.

PROJECT #3: Cascade Water Alliance Transmission and Supply Plan, Washington

Completion Date: 2012

Project Description: Cascade Water Alliance (CWA) is a regional agency of eight member cities. As part of CWA's Transmission and Supply Plan, CDM Smith was selected to forecast water demands and evaluate water supply alternatives.

Evaluation Consideration Item 6: Team's Project Experience for Major Scopes of Work:

FIRM NAME: CDM Smith Inc.

PROJECT #1: Conservation Market Study for Commercial Businesses in Southern California

Completion Date: December 2012

Project Description: The Metropolitan Water District of Southern California (MWD) was seeking information about commercial businesses and their water use within its service area. Specifically, MWD wanted to identify the types and quantities of businesses in the service area, understand how these businesses use water, and identify ways in which water use efficiency can be improved. The specific goal of this water use market study was to identify and prioritize the next level of water efficiency opportunities within the commercial sector. Five target business types were identified for analysis, a literature review of end uses and potential water savings was conducted and then verified with 75 site

visits. Results of the site visit data were used to refine the potential saving reduction and market saturation assumptions from the literature review, as well as the recommendations for targeted business type and end use efficiency efforts.

Services Provided: CDM Smith designed the study, directed sub-consultants, conducted field surveys, analyzed site visit data, prepared final analysis, documentation, and presentations.

PROJECT #2: New York City Water Supply Dependability Study Assessment of Additional Water Conservation Potential

Completion Date: July 2006

Project Description: CDM Smith conducted a comprehensive review of demand management measures that could be implemented by the DEP. The comprehensive assessment evaluated both current and potential water conservation measures. The measures with the most favorable cost-effectiveness and acceptability ratings were recommended for implementation to achieve permanent savings.

Services Provided: CDM Smith evaluated conservation potential and conducted benefit-cost on various conservation measures.

PROJECT #3: Statewide Water Conservation and Efficiency Program Study, Wisconsin

Completion Date: October 2011

Project Description: Water conservation and efficiency practices have the potential to reduce the need for additional demand as well as the potential to save money. With the help of CDM Smith, the Public Service Commission of Wisconsin is undertaking a statewide water conservation and efficiency program that assessed the applicability of viable water efficiency measures and estimate their potential cost effectiveness. Measures included demand reducing options such as low volume toilets and water audits to reduce non-revenue water. It was intended that the results can be used by utilities and municipalities to estimate potential system wide reductions in water demand and associated cost avoidance, as well as potential savings from reduced leakage and reduced nonrevenue water.

Services Provided: CDM Smith provided a statewide analysis of water conservation programs for potential water savings, cost effectiveness and customer satisfaction.

PROJECT #4: Climate Change Handbook for Integrated Water Management Plans

Completion Date: November 2011

Project Description: CDM Smith developed a handbook to integrate climate change adaptation and mitigation into California's integrated regional water management (IRWM) planning process. Since IRWM plans integrate water management strategies to solve multiple priority challenges, they provide an ideal foundation to initiate planning efforts that consider potential climate change impacts. In addition, the guidelines require that IRWM Plan practitioners complete a climate change assessment and develop a strategy for addressing climate change vulnerabilities by 2012.

Services Provided: CDM Smith worked with the project partners to develop a handbook focused on incorporating climate change into the IRWM process.

PROJECT #5: Urban Integrated Systems Model, Singapore

Completion Date: Ongoing

Project Description: CDM Smith has developed an Urban Systems Model (USM) to simulate the performance of a city's water, energy, transportation, solid waste, urban form, and natural environment sectors; the relationship between sectors; and the impacts related to land resources, greenhouse gas emissions, and financial analysis. The USM is unique in its ability not only to simulate water resources system but whole urban environments. For example, it simulates how water uses energy, how energy results in greenhouse gases that impact health and the environment, how captured stormwater reduces pollutants in receiving waters and how distributed greywater produces localized water supply. The model was used to simulate alternatives under different planning scenarios in order to develop robust water supply portfolios and develop a clear picture on strategies such as conservation, reuse and storm water capture.

Services Provided: CDM Smith developed the USM and is applying the model to develop an integrated water resources plan.

PROJECT #6: USEPA Water Reuse Guidelines, United States

Completion Date: February 2013

Project Description: US EPA selected CDM Smith to prepare comprehensive guidelines in 1980, 1992, 2004, and again in 2012. This planning document, Guidelines for Water Reuse, highlights the principal steps of planning for a reclaimed water program. It addresses technical matters, siting economics, legal and institutional issues, health issues, and public involvement. The CDM Smith 2012 Guidelines revision is intended to utilize the knowledge base that has already been established and supplement this technical and policy information with recent experience and references to updated regulations. Most importantly, this revised document will serve as a manual to help planners and decision-makers consider water reuse as part of the integrated water resources planning process. Total water management is a new paradigm in water resources planning that breaks down the dividing lines between wastewater, stormwater, raw water, and reclaimed water, allowing these resources to be managed holistically to maximize their beneficial use.

Services Provided: CDM Smith led the development of this report and authored all sections.

PROJECT #7: Financial Plan for Los Angeles IRP, Los Angeles California

Completion Date: 2006

Project Description: CDM Smith prepared a detailed financial plan as part of the Los Angeles Integrated Resources Plan project. The financial plan assessed costs and projected revenues for the water, wastewater and stormwater systems. It also analyzed affordability, conducted utility benchmarks, and identified outside sources of funding. A financial/rate model was prepared as well.

Services Provided: CDM Smith prepared a rate model, conducted all technical evaluations and benchmarking, and prepared the report.

PROJECT #8: Integrated Systems Model and Financial Analysis Tools, Jacksonville, Florida

Completion Date: 2013

Project Description: CDM Smith developed an integrated resource planning systems model to evaluate reliability, water quality and cost of various supply and conservation options. A detailed financial tool was part of this effort that put all options on a common “apples to apple” economic comparison using leveled unit cost.

Services Provided: CDM Smith programmed the systems model and developed the financial tool. CDM Smith provided training to JEA staff on how to use the model/tool.

PROJECT #9: Benchmarking and Conservation Water Rate Study; City of New York, New York

Completion Date: 2009

Project Description: CDM Smith participated on a team of consultants that conducted a benchmarking survey of large water and wastewater providers as part of a comprehensive evaluation of utility rates and financial practices for the New York Department of Environmental Services. CDM Smith evaluated the rate structure and then examined alternative water rate structures such as conservation tiers and base/excess capacity charges for non-residential accounts. The alternatives rates and rate structures were presented to the Water Board. The selected rate structure will be implemented once the meter update/change out is complete and a new CIS is installed.

Services Provided: CDM Smith’s prime responsibility was evaluating rate structures and proposing alternatives.

PROJECT #10: SAWS Water Supply Planning, San Antonio, Texas

Completion Date: 2006

Project Description: SAWS contracted with CDM Smith to conduct an independent evaluation of the Regional Carrizo Project, a series of projects intended to develop a new wellfield supply and transport and integrate this new supply into the distribution system. The wellfields were located approximately 60 miles from the ASR Twin Oaks Water Treatment Plant (ASR WTP). CDM Smith led SAWS in a decision modeling process to review alternative scenarios and determine the most advantageous delivery point(s) to SAWS’ distribution system from the existing wellfield sites and identify the preferred delivery point. The decision model process offered a transparent decision making process that facilitated “buy-in” of stakeholders at multiple levels. While focusing on the economic factors that would impact the various delivery points, the decision process simultaneously included non-economic factors, such as minimizing operational complexity of the system.

Services Provided: CDM Smith provided planning, analysis, and decision support service for SAWS.

PROJECT #11: Water Treatment No. Plant 4 Project Advisor, Austin, Texas

Completion Date: May 2014

Project Description: CDM Smith is serving as the project advisor to the City of Austin on the Water Treatment Plant No. 4 (WTP4) project and associated raw water intake, raw water and distribution system transmission mains, and tunnels. The total project budget is \$508 million for the engineering and construction. The project design was performed by two principal design teams: 1) WTP4 and raw water intake structures (13 subconsultants), and Jollyville Transmission Main and tunnel (17 subconsultants). The environmental commissioning of the design team projects is being led by a third prime firm (8 subconsultants). The entire project is being delivered through a negotiated Construction Manager-at-Risk (CMAR) delivery method with a single Construction Manager (CM) performing construction of all pumping conveyance and treatment facilities (21 subconsultants).

Services Provided: As the city's Project Advisor, CDM Smith's initial role was to perform an overall assessment of the project structure, scope and schedule (including risk assessment). CDM Smith monitored the many design activities and construction activities while advising the city's Executive Team in support of the City's goals.

PROJECT #12: Kay Bailey Hutchinson Desalination Facility, El Paso, Texas

Completion Date: 2007

Project Description: In the arid southwest where drinking water supplies are scarce, El Paso Water Utilities and Fort Bliss partnered to implement North American's largest inland desalination project. Using RO membranes, the 27.5 mgd Kay Bailey Hutchison desalination facilities project taps brackish groundwater beneath the desert floor, converting it into a new and sustainable drinking water supply for the city of El Paso and Fort Bliss. This flagship project demonstrates an innovative approach to managing limited resources and will serve as a model and center of learning for other communities looking for options to meet their long-term water needs.

Services Provided: CDM Smith provided planning, pilot investigations design, and construction phase services for the project. Our responsibilities focused on the treatment and injection facilities, from research through design, construction, startup and commissioning.

FIRM NAME: Amy Vickers & Associates, Inc. (Sub Consultant to CDM Smith)

PROJECT #1: Water Conservation Plan, Waukesha Water Utility, Waukesha, Wisconsin

Completion Date: 2012

Project Description: This work involved the development of a comprehensive water conservation plan.

Services Provided: Ms. Vickers completed multiple project tasks, including: customer water use data analysis and percentile and rank evaluation of residential, business, institutional, and industrial customer groups and related water use metrics; water efficiency measure benefit and cost evaluation; water conservation ordinance recommendations, and program approach and strategy.

PROJECT #2: Camp Atterbury, Water Conservation Demonstration Project, Camp Atterbury, Indiana

Completion Date: 2013

Project Description: This work involved the demonstration of potential water savings associated with water-efficient fixtures and water use monitoring devices at a U.S. Army training base, Camp Atterbury.

Services Provided: Ms. Vickers led the demonstration project site design, site monitoring, and evaluation of experimental water efficient plumbing fixtures and water metering technology to identify water savings and related cost and energy efficiency benefits.

PROJECT #3: Review of Utility Residential Water Demand Forecasts and Recommended Adjustments Due to Impacts of National Water Efficiency Standards

Completion Date: Ongoing

Project Description: This project involved a review of residential water demand forecasts and the impact of national water efficiency standards for a large urban water supplier.

Services Provided: Ms. Vickers is providing an expert-level review of water demand forecasts and recommendations as they pertain to future residential water use, particularly over the next 5 years (2015-2020). Tasks include identifying factors that may be changing residential water use in the future, e.g., the impact of national mandatory as well as voluntary water efficiency standards for plumbing fixtures. Ms. Vickers will also identify examples of standards and benchmarks for residential water use that are indicative of average use as well as the potential for future residential use, particularly as they are affected by federal, state, and local water efficiency requirements.

FIRM NAME: Susan Roth Consulting, LLC (Sub Consultant to CDM Smith)

PROJECT #1: Water Conservation & Drought Contingency Plans, Hill Country & SE Regions

Completion Date: January 2015

Project Description: Corix Utilities, Inc. purchased the Hill Country Region and Southeast Region water systems from the Lower Colorado River Authority (LCRA) last year. The Hill Country Region is comprised of eight water systems, and the Southeast Region is made up of two water systems, utilizing either surface water or groundwater as a supply source. The Hill Country Region serves customers living from Lometa to the upper reaches of Lake Travis. Following the acquisition, Corix was required by LCRA and TWDB to develop a Water Conservation & Drought Contingency Plan for these water systems.

Services Provided: Ms. Roth developed a Water Conservation & Drought Contingency Plan for Corix that covered the Hill Country Region and Southeast Region. The Hill Country Region includes the following public water systems: Buchanan Lake, Lometa, Paradise Point, Quail Creek, Ridge Harbor, Sandy Harbor, Smithwick Mills and Spicewood Beach. Many of the utility systems within the Hill Country Region System serve rural communities consisting of weekend homes and single family homes.

PROJECT #2: Water Conservation & Drought Contingency Plans, Horseshoe Bay

Completion Date: April 2010

Project Description: Since the City of Horseshoe Bay purchases raw water from the LCRA, they are required to adopt a Water Conservation and Drought Contingency Plan for the customers of their water service area.

Services Provided: Ms. Roth developed a Water Conservation and Drought Contingency Plan for the City of Horseshoe Bay.

PROJECT #3: Water Cedar Park Water IQ - Public Awareness & Education Campaign, Cedar Park

Completion Date: September 2009

Project Description: The City of Cedar Park initiated a water awareness and conservation campaign introducing “Water IQ: Know Your Water” to residents of Cedar Park.

Services Provided: Ms. Roth conducted corporate partnership engagements and outreach events, including stakeholder breakfast for key water-dependent businesses; consulted on technical aspects, including Cedar Park’s watering schedule and peak-day water conservation strategies; identified federal and state grant opportunities for water conservation efforts; provided technical assistance with interpreting the City’s Water Conservation Plan/Drought Contingency Plan Ordinances and effectively communicating the information to the public; provided insight into existing public education programs and materials from the City of Austin and the LCRA; she was a member of the EnviroMedia team.

FIRM NAME: GHD (Sub Consultant to CDM Smith)

PROJECT #1: City of Sydney Decentralized Water Master Plan, Sydney, New South Wales, Australia

Completion Date: July 2012

Project Description: GHD prepared a decentralized water master plan that identifies how the council, the Sydney community and all stakeholders can work to reduce water pollution increase water efficiency and improve water security across the city to meet the challenges of climate change, aging infrastructure and current and future development.

Services Provided: The decentralized water master plan assessed over 300 opportunities to improve water efficiency and diversify water supply through decentralized water systems. The deliverables included water use efficiency plan which involved analyzing current water use across sectors and considering water efficiency initiatives used nationwide. This plan identified a range of potential decentralized water sources and matched them to appropriate water demands to develop decentralized water opportunities.

PROJECT #2: Western Regional Water Balance, Melbourne, Victoria, Australia

Completion Date: July 2015

Project Description: The aim of the project was to develop an understanding of the future and current water balance encompassing the urban, rural and environmental water cycle of the Western region at defined time slices between now and 2050, at varying spatial scales, taking into account impacts of population growth and climate change.

Services Provided: The scenarios analyzed were holistic IWCM servicing strategies including recycled water, precinct scale stormwater harvesting, ASR, and treatment and reuse; stringent planning controls to manage the quality and quantity of stormwater runoff; and substitution of agricultural entitlements

with alternative water to provide environmental flows. The spatial nature of this project, both the analysis and the outcomes, were seen as a particularly innovative and effective way of exploring and communicating scenarios at varying geographical scales.

PROJECT #3: Development of an Alternative Water Atlas, Melbourne, Victoria, Australia

Completion Date: October 2011

Project Description: The aim of the Development of an Alternative Water Atlas project was to explore, cost and quantify the opportunities for alternative water sources across Melbourne in a strategic and systematic way, taking into account the spatial variability inherent in these opportunities. The study scored and ranked the alternative water for a range of social and environmental factors.

Services Provided: The alternative water atlas analyzed four alternative water sources – Centralized Wastewater Recycling, Decentralized Wastewater Recycling, Stormwater Harvesting and Rainwater Harvesting. The project began by considering the water demands that these different sources could supply across the Melbourne region, by quantifying and mapping the locations of substitutable demands out to 2060. Spatial analysis was then performed to identify potential opportunities for each alternative water source, and a water supply and demand balance undertaken to quantify the yield of the alternative water opportunities. These opportunities were then costed and assessed via the Rapid Assessment Method (RAM) which was developed through a stakeholder workshop. The deliverables of the project were a series of maps, and spatial datasets that allow the comparison of the opportunities for different alternative water options at a locality scale, including information about potential yields, reliabilities, costs and RAM scores.

FIRM NAME: Crespo Consulting Services, Inc. (Sub Consultant to CDM Smith)

PROJECT #1: Austin Energy Chiller Plant Water Rights Feasibility Study, Austin, Texas

Completion Date: September 2011

Project Description: Water Rights/Availability Evaluation; Forced Evaporation Estimating

Services Provided: Crespo provided environmental and water resources consulting to Austin Energy to determine water availability for a proposed Chiller Plant in downtown Austin. A thorough evaluation of applicable City of Austin water rights was conducted to determine if the necessary water permit was available for the project. Crespo estimated forced evaporation volumes from return flows to estimate any consumptive use of water for the proposed project. Consumptive use calculations were estimated using different methods (Harbeck Diagram, Energy Balance Method) and variations on lake water temperatures. Lastly, Crespo produced a technical memorandum conveying the study's results and findings.

PROJECT #2: City of Austin Water Resource Planning Study, Austin, Texas

Completion Date: October 2007

Project Description: Water Availability Modeling; Water Rights Permitting Analysis; GIS mappings.

Services Provided: Crespo provided engineering services to identify and evaluate surface water supply alternatives for inclusion into the Integrated Water Resources Plan. Crespo performed a water availability modeling (WAM) analysis using the WRAP model and a water rights permitting analysis to develop technically sound and environmentally feasible surface water alternatives for the City. Analysis included the use of existing and future surface water reservoirs and modeling of potential impacts. Hydrologic data and WAM models for the Colorado River and adjacent River Basins were gathered along with information on State water supply planning for Region K in order to evaluate further alternatives. Finally, Crespo produced maps using GIS to illustrate the geographic location of the facilities needed to implement the alternatives.

PROJECT #3: City of Huntsville Water System Capacity Study, Huntsville, Texas

Completion Date: February 2011

Project Description: Water Supply; Water Treatment Capacity; Groundwater Yield; Equivalent Connection

Services Provided: Crespo performed a water system capacity study for the City of Huntsville. Surface water supply and water treatment capacity were evaluated, including an assessment of existing water raw intakes and lake water levels during historically dry years. Crespo also completed an evaluation of the groundwater supply and the short-term safe yield of the existing city wells. Equivalent Connection calculations were completed to determine realistic estimates of water connections for the City. Crespo evaluated the maximum and firm capacities of the water treatment plant along with the groundwater yields to determine if the City's water supply capacity was adequate to meet maximum daily demands.

PROJECT #4: LCRA Industrial Water Conservation Plans, Central, Texas

Completion Date: November 2005

Project Description: Research/Data Compilation to write Water Conservation Plans

Services Provided: Crespo researched and compiled water use data for three LCRA power plants: Fayette Power Project (La Grange), Thomas C. Ferguson Power Plant (Marble Falls) and Lost Pines Power Park (Bastrop). Crespo evaluated the data and made recommendations pertaining to 5-year and 10-year water conservation target goals and water use reductions.

FIRM NAME: LBG-Guyton Associates (Sub Consultant to CDM Smith)

PROJECT #1: Evaluation, Design and Construction of Eight Brackish Groundwater Wells in Wilcox Aquifer, Southern Bexar County, Texas

Completion Date: 2009

Project Description: LBG-Guyton Associates completed an evaluation of the brackish groundwater resources of the Wilcox Formation in southern Bexar, Atascosa, and Wilson Counties in 2009. Based on evaluation of available logs, structural mapping of top and base of the Wilcox, mapping of net fresh and brackish sand thickness, and numerical groundwater modeling of the Wilcox and Carrizo aquifers, it was determined that the water wells were feasible. Three test wells and two monitor wells were also

constructed and tested in the Wilcox aquifer. The wells were completed to depths ranging from approximately 1,700 to 2,600 feet and tested at average rates ranging from 850 to 1,050 gpm. Based on the findings of the evaluation, SAWS installed eight large-capacity brackish wells located in southern Bexar County.

Services Provided: LBG-Guyton provided environmental study, preliminary design, design and construction phase services for those water wells.

PROJECT #2: Feasibility Study for Aquifer Storage and Recovery for Truckee Meadows Water Authority, Reno, Nevada

Completion Date: September 2009

Project Description: LBG-Guyton Associates conducted a study for Truckee Meadows Water Authority of Reno, Nevada to determine the feasibility of using treated surface water to augment the supply of groundwater. LBG-Guyton Associates evaluated the feasibility of converting four public-supply wells to injection and recovery wells for recharge of treated water. The capacity of the wells ranged from 700 to 1,200 gallons per minute. A direct pilot recharge test was performed using cycles of injection with treated surface water and recovery by pumping the wells. The ASR system has expanded to twelve injection and recovery wells that have been operating for ten plus years.

Services Provided: LBG-Guyton provided project permitting, pumping tests and analyses, well design and modifications, pilot recharge study and well ASR testing, and alluvial aquifer.

PROJECT #3: Conceptual ASR Development, Austin, Texas

Completion Date: Ongoing

Project Description: LBG-Guyton developed a conceptual level Aquifer Storage and Recovery project using a brackish portion of the northern segment of the Edwards Aquifer for Aquifer Storage and Recovery (ASR) with treated municipal effluent as the source water. The source water would be treated to drinking water standards and piped to an ASR wellfield in eastern Williamson County where it would be stored in a brackish section of the Edwards Aquifer. The stored water would be recovered in the peak demand season and piped to a water treatment plant for any necessary treatment prior to entering the distribution system.

Services Provided: LBG-Guyton led the project, providing evaluation and engineering services to develop a conceptual plan.