

**CITY OF SUGAR LAND  
STANDARD CONTRACT FOR  
GENERAL SERVICES**

Over \$50K  
(Rev. 1-4-16)

**I. Signatures.** By signing below, the parties agree to the terms of this Contract:

**CITY OF SUGAR LAND**

**CONTRACTOR:**

*Amber M. Batson*

**By:**

**By:** Amber M. Batson, P.E.

**Date:**

**Date:** August 22, 2018

**Title:**

**Title:** Principal Engineer

**Company:** CDM Smith Inc.

APPROVED AS TO FORM:

*J. L. Day*

**II. General Information and Terms.**

Contractor's Name and Address: CDM Smith  
11490 Westheimer Road, Suite 700  
Houston, TX 77077

Description of Services: Integrated Water Resources Plan

Maximum Contract Amount: \$489,000.00

Effective Date: On the latest date of the dates executed by both parties.

Termination Date: See Section III C.

Contract Parts: This Contract consists of the following parts:

- I. General Information and Terms
- II. Signatures
- III. Standard Contractual Provisions
- IV. Additional Terms or Conditions
- V. Additional Contract Documents

### **III. Standard Contractual Provisions.**

A. Contractor's Services. The Contractor will provide to the City the services described in this Contract under the terms and conditions of this Contract.

B. Billing and Payment. The Contractor will bill the City for the services provided at intervals of at least 30 days, except for the final billing. The City will pay the Contractor for the services provided for in this Contract with current revenues available to the City, but all the City's payments to the Contractor, including the time of payment and the payment of interest on overdue amounts, are subject to the provisions of Chapter 2251 of the Government Code. The City is not liable to the Contractor for any taxes which the City is not liable by law, including state and local sales and use taxes (Section 151.309 and Title 3, Texas Tax Code) and federal excise tax (Subtitle D of the Internal Revenue Code). Accordingly, those taxes may not be added to any bill.

C. Termination Provisions.

(1) Unless terminated earlier as allowed by this Contract, this Contract terminates:

(a) On the termination date, if any, specified in the General Information in Part 1, but the obligation of a party to complete a contract requirement pending on the date of termination survives termination; or

(b) If there is no termination date specified in the General Information in Part 1, the Contract terminates when both parties have completed all their respective obligations under the Contract.

(2) The City's city manager may terminate this Contract during its term at any time for any reason by giving written notice to the Contractor not less than five business days prior to the termination date, but the City will pay the Contractor for all services rendered in compliance with this Contract to the date of termination.

(3) If the City's city council does not appropriate funds to make any payment for a fiscal year after the City's fiscal year in which the Contract becomes effective and there are no proceeds available for payment from the sale of bonds or other debt instruments, then the Contract automatically terminates at the beginning of the first day of the successive fiscal year. (Section 5, Article XI, Texas Constitution)

D. Liability and Indemnity. A provision of the Contract is void and unenforceable if it: (1) limits or releases either party from liability that would exist by law in the absence of the provision; (2) creates liability for either party that would not exist by law in the absence of the provision; or (3) waives or limits either party's rights, defenses, remedies, or immunities that would exist by law in the absence of the provision.

E. Assignment. The Contractor may not assign this Contract without the City's prior written consent.

F. Law Governing and Venue. This Contract is governed by the law of the State of Texas and a lawsuit may only be prosecuted on this Contract in a court of competent jurisdiction located in or having jurisdiction in Fort Bend County, Texas.

G. Entire Contract. This Contract represents the entire Contract between the City and the Contractor and supersedes all prior negotiations, representations, or contracts, either written or oral. This Contract may be amended only by written instrument signed by both parties.

H. Independent Contractor. The Contractor will perform the work under this Contract as an independent contractor and not as an employee of the City. The City has no right to supervise, direct, or control the Contractor or Contractor's officers or employees in the means, methods, or details of the work to be performed by Contractor.

I. Dispute Resolution Procedures. If either party disputes any matter relating to this Contract, the parties agree to try in good faith, before bringing any legal action, to settle the dispute by submitting the matter to mediation before a third party who will be selected by agreement of the parties. The parties will each pay one-half of the mediator's fees.

J. Attorney's Fees. Should a party to this Contract bring suit against the other party for any matter relating to this Contract, neither party will seek or be entitled to an award of attorney's fees or other costs relating to the suit.

K. Severability. If a court finds or rules that any part of this Contract is invalid or unlawful, the remainder of the Contract continues to be binding on the parties.

L. Contractual Limitations Period. Any provision of the Contract that establishes a limitations period that does not run against the City by law or that is shorter than two years is void. (Sections 16.061 and 16.070, Texas Civil Practice and Remedies Code)

M. Conflicting Provisions. If there is a conflict between a provision in the Contractor's Additional Contract Documents and a provision in the remainder of this Contract, the latter controls.

N. Copyright. Any original work (the Work), including any picture, video, music, brochure, writing, trademark, logo or other work created by the Contractor for the use of the City under this Contract is a "work made for hire," as defined by federal copyright law. If the Work is not by law a "work made for hire," the Contractor by execution of this Contract assigns to the City all of its rights to the Work, including the copyright. The City, as the author and owner of the copyright to the Work, may alter, reproduce, distribute, or make any other use of the Work as it deems appropriate.

O. Standard of Care for Architects and Engineers. Services must be performed with the professional skill and care ordinarily provided by competent licensed engineers or registered architects practicing in the same or similar locality and under the same or similar circumstances and professional license.

P. Disclosure of Interested Persons for Council-Approved Contracts. Contracts that require City Council approval, such as contracts that exceed \$50,000, are subject to the requirements of Section 2252.908, Tex Gov't Code. Under the provisions of this statute:

(1) The City may not enter into a contract with a business entity that requires Council approval unless the business entity submits a disclosure of interested persons at the time the business entity submits a signed contract to the City;

(2) A disclosure of interested parties must be submitted on a form prescribed by the Texas Ethics Commission (Commission) that includes:

- (a) A list of each interested party for the contract of which the contractor business entity is aware, an interested party being a person who has a controlling interest in the business entity or who actively participates in facilitating or negotiating the terms of the contract, including a broker, intermediary, adviser, or attorney for the business entity; and
- (b) The signature of the authorized agent of the contracting business entity, acknowledging that the disclosure is made under oath and under penalty of perjury.

The Commission has approved a Certificate of Interested Persons form, which must be filled out, signed and notarized by the Contractor and submitted to the City at the time of execution of this Contract, along with the certification of filing generated from the Commission's website at <https://www.ethics.state.tx.us/tec/1295-Info.htm> . The Certificate of Interested Persons form is available on the Commission's website and the Contractor must follow the Commission's filing process adopted pursuant to the statute.

Q. Compliance with Laws. The Contractor must comply with the federal, state, and local laws, rules and regulations applicable to the Project and its services under this Contract

**IV. Additional Terms or Conditions.** None.

**V. Additional Contract Documents.** The following documents attached to this Contract are part of this Contract:

Exhibit A. Contractor's Additional Contract Documents:

- A-1. Certificate of Interested Persons with Certification of Filing
- A-2. CDM Smith's Response to RFQ 2017-14 (77 pages)

Exhibit B. City's Additional Contract Documents:

- B-1. Requirements for all Insurance Documents (2 pages)
- B-2 Request for Qualifications, RFQ 2017-14 (30 pages)

**CERTIFICATE OF INTERESTED PARTIES****FORM 1295**

Complete Nos. 1 - 4 and 6 if there are interested parties.  
 Complete Nos. 1, 2, 3, 5, and 6 if there are no interested parties.

**OFFICE USE ONLY**

**1** Name of business entity filing form, and the city, state and country of the business entity's place of business.

**2** Name of governmental entity or state agency that is a party to the contract for which the form is being filed.

**3** Provide the identification number used by the governmental entity or state agency to track or identify the contract, and provide a description of the goods or services to be provided under the contract.

| 4<br>Name of Interested Party | City, State, Country<br>(place of business) | Nature of Interest (check applicable) |              |
|-------------------------------|---------------------------------------------|---------------------------------------|--------------|
|                               |                                             | Controlling                           | Intermediary |
|                               |                                             |                                       |              |
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**5** Check only if there is NO Interested Party.

☐
**6 AFFIDAVIT**

I swear, or affirm, under penalty of perjury, that the above disclosure is true and correct.

\_\_\_\_\_  
 Signature of authorized agent of contracting business entity

AFFIX NOTARY STAMP / SEAL ABOVE

Sworn to and subscribed before me, by the said \_\_\_\_\_, this the \_\_\_\_\_ day  
 of \_\_\_\_\_, 20\_\_\_\_\_, to certify which, witness my hand and seal of office.

\_\_\_\_\_  
 Signature of officer administering oath

\_\_\_\_\_  
 Printed name of officer administering oath

\_\_\_\_\_  
 Title of officer administering oath

**ADD ADDITIONAL PAGES AS NECESSARY**

**ORIGINAL**

City of Sugar Land

QUALIFICATIONS FOR

# INTEGRATED WATER RESOURCE PLAN

**RFQ 2017-14**

July 6, 2017



**CDM  
Smith**

IN ASSOCIATION WITH:  
KIT Professionals, Inc.

City of Sugar Land  
City Secretary Office  
2700 Town Center Boulevard North  
Sugar Land, TX 77479

July 6, 2017

**RE. Request for Qualifications – Integrated Water Resources Plan (RFQ 2017-14)**

Dear Review Committee Members,

CDM Smith is pleased to submit our technical response for the City of Sugar Land's (City) Integrated Water Resources Plan (IWRP) Request for Qualifications (RFQ). We understand the City's desire to develop its IWRP to establish a clear vision and strategic direction to meet upcoming Fort Bend Subsidence District (FBSD) conversion deadlines, while also planning the best use of its invaluable water resources. We are excited about the opportunity to partner with the City on this critical project, and bring a vested and unsurpassed passion to provide exceptional service and value in developing your IWRP.

We are proud to offer the following key discriminators:

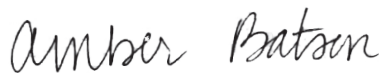
- **Proven World-Class Integrated Water Resource Planning:** CDM Smith is a worldwide leader in integrated water resource planning. Our well-established processes, including the use of STELLA as a decision support tool to examine potential alternatives performance, has led to award winning plans that are widely supported by the public resulting in the seamless implementation of hundreds of innovative projects to improve supply reliability, protect and enhance the environment, and address regulatory constraints.
- **Directly Relevant Experience, Bringing Lessons Learned from Key Projects:** CDM Smith has relevant Integrated Water Resources Planning experience in locations such as Austin, TX; Franklin, TN; St Johns County, FL; and Pasadena, CA. We will apply our multifaceted experience and bring lessons learned from assisting these agencies to provide the City with a world-class and reliable IWRP.
- **Local Experience & Project Manager:** The CDM Smith Team has significant experience working throughout Fort Bend County, as well as an in-depth understanding of local and regional water supplies and Texas water regulations. Project Manager Dr. Tina Petersen is located in our Houston office and has successfully managed IWRPs for several clients in Texas. She will also draw on the project team – *a combination of local and national experts* – to provide a powerful combination of resource planning and engineering. Supporting Tina and bringing the most substantial integrated water resources planning expertise in the nation is Dan Rodrigo, who has more than 25 years of water resources planning experience and has managed more than 25 IWRPs in the United States and abroad.

On behalf of the entire CDM Smith Team, we are extremely excited about this opportunity to work with the City of Sugar Land on this IWRP. Please do not hesitate to contact me at (713) 423-7300 / [PetersenCM@cdmsmith.com](mailto:PetersenCM@cdmsmith.com) should you have any questions regarding the enclosed proposal.

Sincerely,

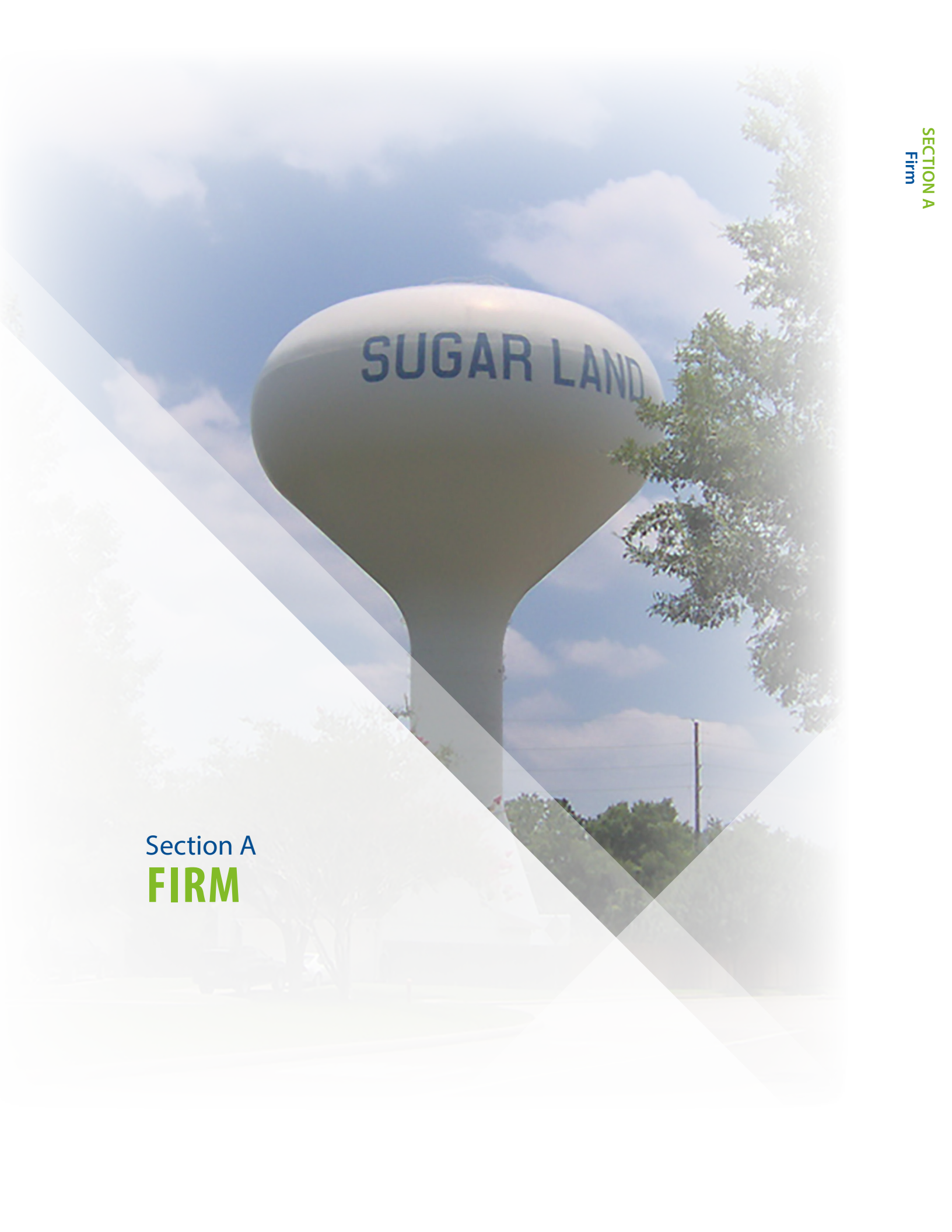


Tina Petersen, PhD, PE  
Project Manager  
CDM Smith Inc.



Amber Batson, PE  
Principal-in-Charge  
CDM Smith Inc.

Section A  
**FIRM**



# Executive Summary

The City of Sugar Land (City) would like to develop a clear vision and strategic direction for its water supply planning efforts. To accomplish these goals, the City has initiated an Integrated Water Resources Planning (IWRP) process.

While every IWRP is unique, CDM Smith has developed a proven process that is easily adapted to local regulatory structures, existing conditions, and the unique features of communities. As a result, CDM Smith has successfully applied this approach to develop more than 40 IWRPs across the nation. We look forward to leveraging lessons learned, along with the experience gained from other key projects with the City and throughout Texas. Our experience implementing this process means that we will hit the ground running, which will be critical to meeting the City's aggressive schedule.

*CDM Smith offers the City with a team of professionals with demonstrated experience in successfully developing IWRPs. Project Manager Dr. Tina Petersen is based in Houston and will ensure the successful execution and delivery of a high-quality IWRP. She will work closely with Dan Rodrigo, CDM Smith's National Practice Leader for integrated resources planning. This in-depth understanding is further augmented by our teammate, KIT Professionals, Inc. (KIT), a Houston-based multi-disciplined consulting engineering firm that specializes in all aspects of drinking water and wastewater infrastructure engineering.*

The City has outlined a detailed scope of services that aligns well with CDM Smith's proven approach to developing IWRPs. The following highlights our approach for this project:

- **Develop Potable & Non-Potable Water Demand Projections** – As part of Task 3, we propose to use statistical regression to estimate indoor versus outdoor water use for the residential sector (and other sectors if data is available). This will allow us to more accurately assess the potential for reclaimed water and other potential options that target non-potable water use.
- **Refine Objectives** – We propose to work closely with the City to review and refine the IWRP objectives and performance criteria, including assigning relative weights of importance. It is critical that these aspects are properly established upfront and throughout the project. In addition, this step provides an opportunity to engage the Citizen and Council Task Forces to obtain feedback, which will allow them to begin taking ownership of the plan as well.
- **Develop Decision Support Model (DSM)** – During Task 5, our team of experienced STELLA modelers will develop a DSM that not only represents the physical system, but will also include results of hydrologic analysis from the City's WAM and groundwater modeling. Our DSM will also incorporate new supply options so they can also be evaluated in terms of yield and cost.
- **Apply Multi-Criteria Decision Analysis** – As part of Task 6, CDM Smith proposes to use multi-criteria decision analysis software to rank the alternatives for each pass. In addition to the results from the DSM, the decision analysis software will incorporate other metrics such as implementation issues, environmental, and resiliency. The use of decision analysis will also provide the City and its stakeholders with IWRP results that are well understood and transparent.

In conclusion, leveraging our team, methodology, and best practices for the City of Sugar Land will result in a IWRP that serves as a strategic roadmap for continuing to deliver a highly reliable and safe water supply for generations to come.

## CDM Smith Contact Information

### COMPANY NAME & ADDRESS

CDM Smith  
11490 Westheimer Road, Suite 700  
Houston, TX 77077

### PRIMARY CONTACT PERSON

Tina Petersen, PhD, PE (Project Manager)  
(713) 423-7300  
[PetersenCM@cdmsmith.com](mailto:PetersenCM@cdmsmith.com)

### AUTHORIZED PERSON TO CONTRACTUALLY BIND THE FIRM

Amber Batson, PE (Principal-in-Charge)  
(713) 423-7300  
[BatsonAM@cdmsmith.com](mailto:BatsonAM@cdmsmith.com)

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## Appendix A – Resumes

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|                                                      |  |
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| Form – Bidder Certification & Addenda Acknowledgment |  |
| Form – Bidder / Respondent Information               |  |

# Client Reference Form

## REFERENCE #1

**Company Name:** Austin Water – Integrated Water Resources Plan

**Address:** 625 E 10th Street, Austin, TX 78701

**Phone No:** (512) 972-0179

**Contact Name:** Teresa Lutes, PE (Managing Engineer)

**Email Address:** [Teresa.Lutes@austintexas.gov](mailto:Teresa.Lutes@austintexas.gov)

**Project Description:** CDM Smith is working with Austin Water to develop an integrated water resources plan that involves demand forecasting, alternative water supply evaluation, decision support, stakeholder involvement, and climate variability.

## REFERENCE #2

**Company Name:** St. Johns County Utilities – Integrated Water Resources Plan

**Address:** PO Box 3006, Saint Augustine, FL 32085

**Phone No:** (904) 209-2700

**Contact Name:** Bill Young (Utilities Director)

**Email Address:** [BYoung@sjcfl.us](mailto:BYoung@sjcfl.us)

**Project Description:** CDM Smith, in partnership with Jones Edmunds Associates, developed an integrated water resources plan examining water supply, water reuse, and stormwater capture.

## REFERENCE #3

**Company Name:** City of Pasadena Water & Power – Water Integrated Resources Plan

**Address:** 150 S. Los Robles Avenue, Pasadena CA 91101

**Phone No:** (626) 744-7011

**Contact Name:** Natalie Ouwersloot (Engineer)

**Email Address:** [NOuwersloot@cityofpasadena.net](mailto:NOuwersloot@cityofpasadena.net)

**Project Description:** CDM Smith developed a water integrated resources plan, which resulted in a long-term water resources strategy through the 2035 planning year that reflects community values and adapts to changing conditions.

## REFERENCE #4

**Company Name:** Tarrant Regional Water District – Integrated Water Supply Plan

**Address:** 800 E Northside Drive, Fort Worth, TX 76102

**Phone No:** (817) 335-2491

**Contact Name:** Dan Buhman, PE (Assistant General Manager)

**Email Address:** [Dan.Buhman@trwd.com](mailto:Dan.Buhman@trwd.com)

**Project Description:** CDM Smith developed a STELLA-based operations model to represent TRWD's water supply system. The model was used to evaluate options and develop the IWSP.



Section B  
**GENERAL**

# Schedule & Compliance

The City of Sugar Land has already started work on its IWRP and has laid a strong foundation for the plan's ultimate success. The City initiated a process in December 2016 to select a Citizen Task Force to assist with plan development, with Council approval of the Citizen Task Force members in March 2017.

*Given the significant upfront work the City has completed, the CDM Smith Team understands the City's desire for an accelerated schedule and corresponding need to move quickly. The City's scope of work aligns well with our proven approach, which will ensure that our team will hit the ground running on the project and are committed to partnering with the City to make immediate progress.*

*We also understand the real-world complexities associated with developing an IWRP and the potential roadblocks that can occur when a Task Force is involved in a planning process. Simply put, we will work with the City to avoid potential pitfalls before they occur, thus avoiding costly project delays.*

In short, the CDM Smith Team is committed to meeting the City's schedule expectations. Our entire project team not only has the availability, commitment, and the firm's support to meet the City's project schedule, but we also have the seasoned expertise to do so while maintaining our high standard of quality compliance.

Lastly, should the need arise, CDM Smith has a staff of nearly 100 located in Houston and over 5,000 across the firm. We can draw upon our vast resources to support the timely execution of this project to ensure the City's objectives are met.

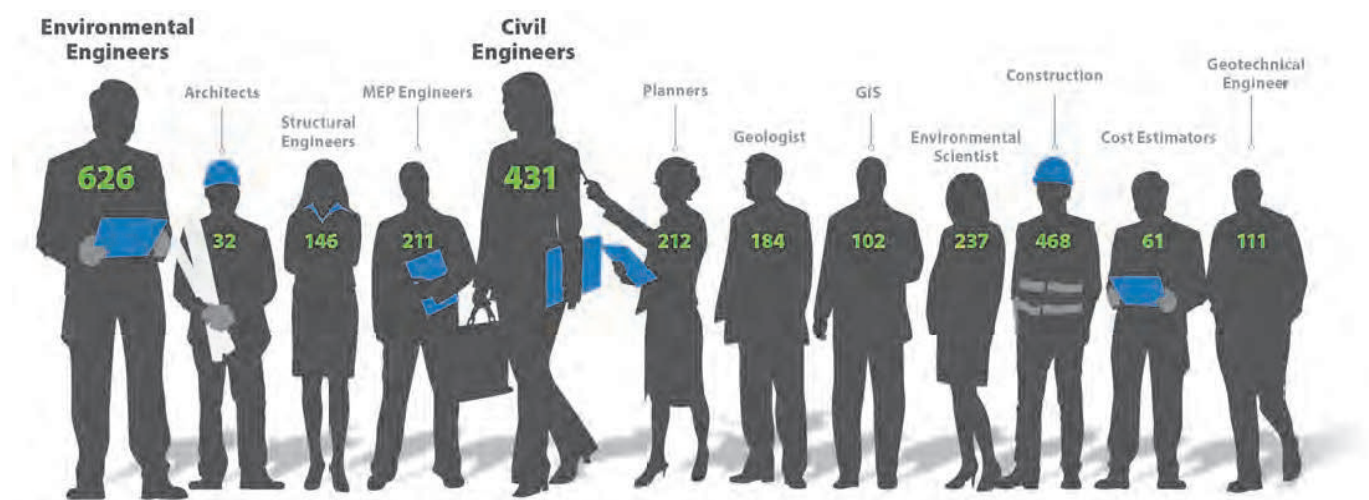


FIGURE B-1: CDM Smith Resource Breakdown

# Contract Negotiations

The City has already provided a detailed, multi-phase scope of work complete with all tasks and deliverables required for the successful completion of its IWRP. This upfront work provides a solid basis for initiating scope discussions and will help to ensure a rapid project kickoff – with the ultimate goal of meeting an accelerated schedule.

*Given the proposed scope is similar to those of many other IWRP projects completed by CDM Smith, we have a thorough understanding of the level of effort that will be required to identify a combination of capital projects, management strategies, and policies to meet the City's future water needs. However, despite having this baseline from which to commence negotiations, we recognize that each water plan developed by CDM Smith is ultimately tailored to the City for which it is being developed.*

As such, we would like an opportunity to have a conversation with City staff to ensure we are in alignment in regard to the “drivers” and “desired outcomes” for this unique project.

Based on that conversation and our expertise, contract and scope negotiations would ideally focus on:

- Opportunities to clarify assumptions and overall understanding of the City's system
- Opportunities to refine the scope of work to better meet the City's goals
- Opportunities to streamline scope and schedule to meet the City's need for an accelerated schedule
- The type of information and level of detail available to inform the IWRP (such as existing models, feasibility studies on water supply strategies, etc.)

CDM Smith does not have any material objections to the proposed contract language and would review detailed contract documents as part of the process to move forward with executing the contract. We have no issues meeting the proposed minimum insurance requirements and will be able to provide insurance documentation within 10 business days after contract award and prior to starting any work.

A large, white, teardrop-shaped water tower stands prominently against a blue sky with scattered white clouds. The words "SUGAR LAND" are painted in bold, blue, sans-serif capital letters across the upper portion of the tower. The tower is supported by a dark, slender column. In the background, there are green trees and a utility pole with wires. The foreground shows a paved area, possibly a parking lot or road, with some blurred greenery.

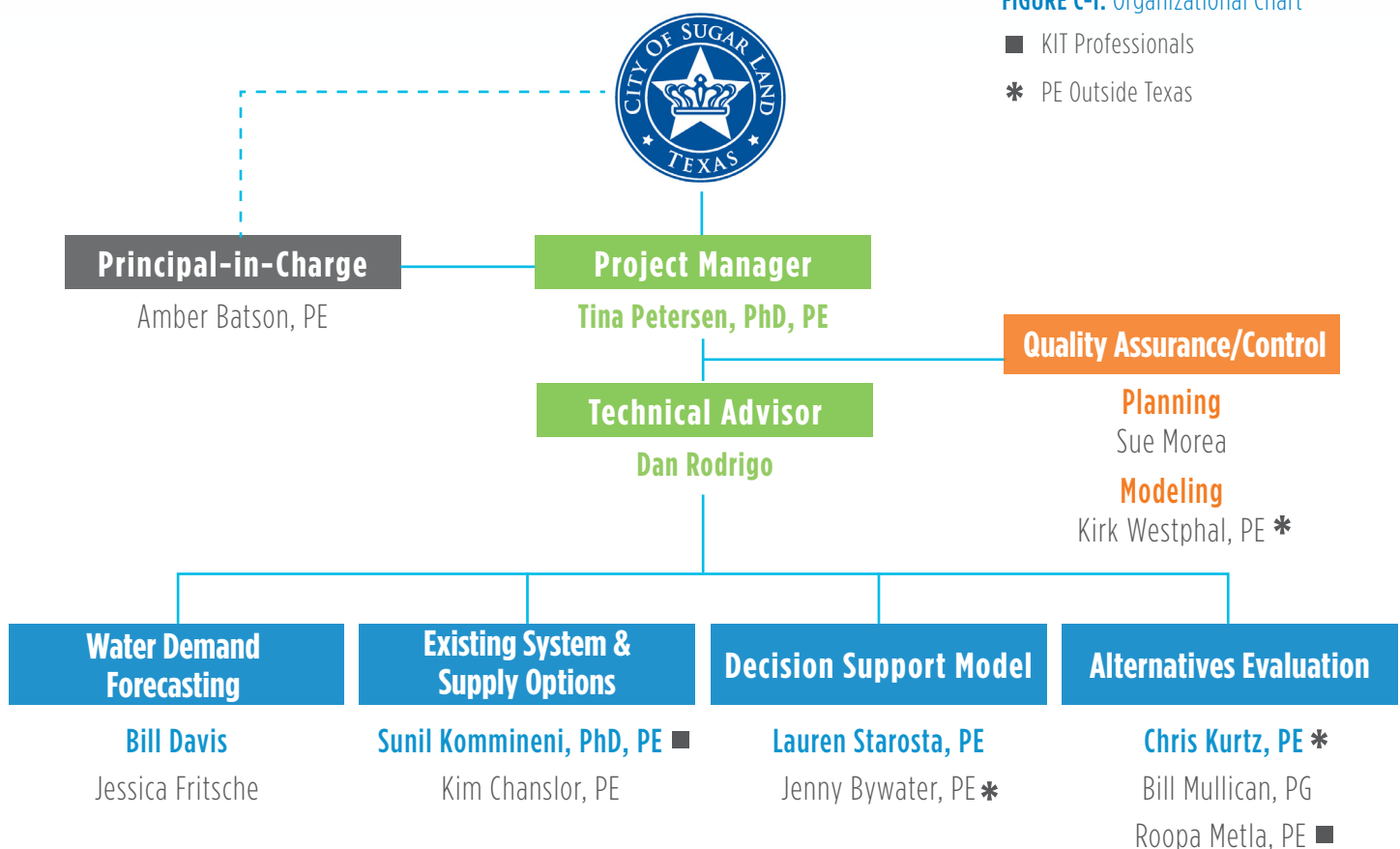
## Section C **WORK CATEGORIES**

# Organizational Structure & Team Members

The CDM Smith Team offers the City a team of professionals with demonstrated experience developing spatially variable disaggregated indoor and outdoor usage patterns; decision support modeling using STELLA; supply option conceptualizations; resiliency planning; and engineering expertise in water, wastewater, and reuse infrastructure.

*Led by Project Manager Dr. Tina Petersen, the personnel highlighted in this section will ensure the successful execution and delivery of a high-quality IWRP that identifies cost-effective and sustainable combinations of capital projects, management strategies, and policies – with the ultimate goal of responsibly meeting the City’s future water needs.* Tina will be supported by a handpicked team of experts and specialists, including subcontractor, KIT Professionals, Inc. (KIT), a Houston-based multi-disciplined consulting engineering firm that specializes in all aspects of drinking water and wastewater infrastructure engineering

Together, our team offers invaluable local and national experience that includes working with the City on a wide variety of water projects such as the award-winning 9-mgd Surface Water Treatment Plant and the Riverstone Groundwater Plant Improvements. The following organizational chart (**Figure C-1**) illustrates our streamlined team structure and is followed by brief biographies highlighting the roles and requisite qualifications of the project task leads and quality assurance/control. More detailed resumes for the key project leaders and the supporting team members have been included in Appendix A – Resumes.



**FIGURE C-1:** Organizational Chart

■ KIT Professionals

\* PE Outside Texas

## Key Members



### **Tina Petersen, PhD, PE | Project Manager**

*Tina is a water supply planning engineer and project manager based in Houston, Texas with more than 15 years of experience. She has led numerous high profile water supply planning projects in Texas. She is also familiar with local regulatory environment having developed several Groundwater Reduction Plans to assist clients in meeting Fort Bend Subsidence District requirements.*

*She is considered a leader in integrated water resource planning for Texas, having worked with key water supply agencies such as City of Dallas, Tarrant Regional Water District and City of Austin on their integrated planning efforts. Beyond water supply planning, she works with clients to meet complex and stringent local, state and federal regulatory requirements related to stormwater, water reuse and water quality planning, as well as compliance with MS4, TMDLs, NPDES requirements.*

*As our team's project manager, Tina will work closely with the City of Sugar Land to coordinate between the project team, the City's reliability consultant and City staff to track project scope, schedule and budget – and ensure that the project team is working to find the best solutions for the City's complex system of groundwater, surface water and regulatory compliance requirements using our proven approach to integrated water resources planning.*

Key project experience includes the following. More details can be found in Appendix A – Resumes.

- **Project Manager**, Austin Integrated Water Resources Plan, Austin Water Utilities (TX)
- **Task Leader / Project Engineer**, Tarrant Regional Integrated Water Supply Plan, Tarrant Regional Water District (TX)
- **Project Manager**, Tarrant Regional Additional Water Supply Analyses, Tarrant Regional Water District (TX)
- **Project Manager**, Ellis and Johnson Counties Regional Supply Study, Tarrant County (TX)
- **Project Manager**, Dallas Long-Range Water Supply Plan, Dallas Water Utilities (TX)
- **Project Manager**, Water Reuse Feasibility Study, Permitting and Water Quality Evaluation, Wichita Falls (TX)



### **Dan Rodrigo | Technical Advisor**

*Dan is a senior water resources planner with 25 years of expertise in integrated water resources management, water supply planning, and alternatives development and analysis. As the firm's leading expert in decision science and national practice lead for integrated resources planning, he has successfully used facilitation, results from systems models, and multi-criteria decision analysis to build support for dozens of water resources plans and capital improvement programs across the globe.*

*As technical advisor, Dan will use the results from the alternatives evaluation to clearly show trade-offs and help guide Sugar Land in its selection of the preferred strategy. Dan will also be responsible for suggesting uncertainties and potential risks to test the alternatives against using "what-if" analysis.*

Key project experience includes the following. More details can be found in Appendix A – Resumes.

- **Technical Director**, Austin Integrated Water Resources Plan, Austin Water Utilities (TX)
- **Project Manager**, San Diego Long-Range Water Resources Plan, San Diego Public Utilities (CA)
- **Technical Advisor & Stakeholder Facilitator**, St. Johns Integrated Water Resources Plan, St. Johns County (FL)
- **Technical Advisor & Stakeholder Facilitator**, Franklin Integrated Water Resources Plan, City of Franklin (TN)
- **Project Manager**, Pasadena Water Integrated Resources Plan, City of Pasadena Water and Power (CA)



## Sue Morea | Quality Assurance / Control – Planning

*Sue brings more than 25 years of international water supply planning expertise to Sugar Land in her role as QA/QC - Planning Lead. Sue has successfully led many integrated water supply planning projects across the United States, and numerous water quality studies that support water supply plans, and compliance with federal, state and local regulations. For the City of Sugar Land as QA/QC - Planning lead, Sue will provide technical review related to all planning aspects of the project, including water supply options development; overall systems modeling; and the alternatives evaluation process.*

Key project experience includes the following. More details can be found in Appendix A – Resumes.

- **Project Advisor**, Austin Integrated Water Resources Plan, Austin Water Utilities (TX)
- **Project Director**, San Andreas Integrated Water Resources Plan (Colombia)
- **Project Director**, Oklahoma Comprehensive Water Plan, State of Oklahoma (OK)
- **Program Manager**, Colorado Statewide Water Supply Initiative, Colorado Water Conservation Board (CO)



## Kirk Westphal, PE | Quality Assurance / Control – Modeling

*Kirk has 25 years of experience as an engineer and water supply planner. He has directed projects across the United States and abroad involving water supply planning, management, and modeling; river basin planning; reservoir system management; water quality; risk-based drought management; and integrated resource planning.*

*Kirk has experience using the following decision-support modeling packages: STELLA, GoldSim, Premium Solver Platform, OASIS, RiverWare, Criterion Decision Plus (CDP), EVAMIX. As QA/QC - Modeling lead, Kirk will be responsible for reviewing the Sugar Land decision support model. As QA/QC Modeling lead, Kirk will provide an independent review of the Sugar Land decision support model and all relevant programming.*

Key project experience includes the following. More details can be found in Appendix A – Resumes.

- **Decision Support/Modeling Task Lead**, Raw Water Integration Study, Tarrant Regional Water District (TX)
- **Task Lead for Alternatives Evaluation/Modeling**, Integrated Water Resources Plan, City of Franklin (TN)
- **Model Reviewer**, Integrated Resources Plan, St. Johns County (FL)
- **Systems Modeling Lead**, Dallas Long Range Water Supply Plan, Dallas Water Utilities (TX)



## Bill Davis | Task Leader – Demand Forecasting

*Bill specializes in the analysis of local water use patterns and characteristics, water demand modeling and forecasting, and evaluating the effectiveness of conservation programs. He has developed databases, conducted statistical analyses of water use and socioeconomic data, and prepared water demand forecasts for dozens of water agencies in North America.*

*As task leader for demand forecasting, Bill will guide the team in conducting the water demand analyses, with specific focus on developing a scalable process to establish a breakdown of indoor versus outdoor use to establish non-potable demand potential.*

Key project experience includes the following. More details can be found in Appendix A – Resumes.

- **Technical Reviewer**, Demand Models, Austin Integrated Water Resources Plan, Austin (TX)
- **Project Manager**, Water Demand Forecast Model for Spokane County (WA)
- **Project Manager**, Demand Forecasting Project, San Diego (CA)



## **Sunil Kommineni, PhD, PE, BCEE | Task Leader – Existing System & Supply Options**

*Sunil has more than 20 years of experience in water distribution system modeling, master planning, water quality and regulatory assessments. He has led the development of dynamic water and wastewater models and master plans for numerous Texas cities, including Houston, Dallas, Phoenix, The Woodlands, Baytown, Pearland and Richmond. Having served as a key technical resource on several surface water and groundwater projects for the City of Sugar Land, Sunil will be able to apply his understanding of Sugar Land's infrastructure to deliver innovative solutions as task leader for existing system and supply options.*

Key project experience includes the following. More details can be found in Appendix A – Resumes.

- **Project Manager**, Water, Wastewater and Reclaimed Water Master Planning and Rate Analysis, City of Richmond (TX)
- **Project Manager**, System-wide Water Quality Management Plan, City of Houston (TX)
- **Technical Lead**, Surface Water Treatment Plant Re-rating Study, City of Sugar Land (TX)



## **Lauren Starosta, PE | Task Leader – Decision Support Model**

*Lauren is a water resources engineer specializing in systems modeling, water resources planning/studies, and hydrologic/hydraulic modeling. She has worked throughout Texas and the Southwest Region to develop models and tools to assist with problem solving and visualization, and has worked on many decision support tools for water resources ranging from water supply planning to wastewater collection system planning to flood mitigation.*

*Lauren's technical specialties include systems modeling (including water and energy), water distribution, water-demand analysis, and cost analysis. Her computer and modeling skills include STELLA, InfoWorks CS, InfoSWMM, PowerSim, InfoWater/H2Omap, Bentley SewerGEMS and WaterGEMS, HEC-RAS, HouStorm, ArcGIS, ArcHydro, and EPA SSOAP Toolbox. As the Task Lead for developing the decision support model, Lauren will draw upon her background to develop input response functions that describe the City's water supply system.*

Key project experience includes the following. More details can be found in Appendix A – Resumes.

- **Project Engineer**, Dallas Long-Range Water Supply Plan, City of Dallas (TX)
- **Modeling Engineer**, Tarrant Regional Integrated Water Supply Plan, Tarrant Regional Water District (TX)
- **Project Manager & Modeler**, Santa Fe Basin Study (IWRP w/ Climate Change), City of Santa Fe (NM)



## **Chris Kurtz, PE, PMP | Task Leader – Alternatives Evaluation**

*Chris specializes in integrated water resources planning and hydrologic/systems modeling, and evaluation of supply options and alternatives. He is proficient in a number of database and modeling software platforms including STELLA, PowerSim, InfoWater, WaterGEMS, InfoWorks CS, ArcGIS, MS Access, and MS Excel. As the task leader for alternatives evaluation, Chris will use the information from the conceptualization of supply options and results from STELLA modeling in order to evaluate alternatives.*

Key project experience includes the following. More details can be found in Appendix A – Resumes.

- **Alternatives Evaluation Task Lead**, Austin Integrated Water Resources Plan, Austin Water Utilities (TX)
- **Technical Lead/Project Engineer**, Evaluation and Documentation of the State of Texas Water Availability Model and Water Rights Analysis Package, USACE Ft. Worth District (TX)
- **Task Manager/Lead Modeler**, San Gabriel Valley Municipal Upper District Integrated Resource Plan, Azusa, (CA)
- **Technical Lead/Project Engineer**, Statewide Water Supply Initiative (CO)

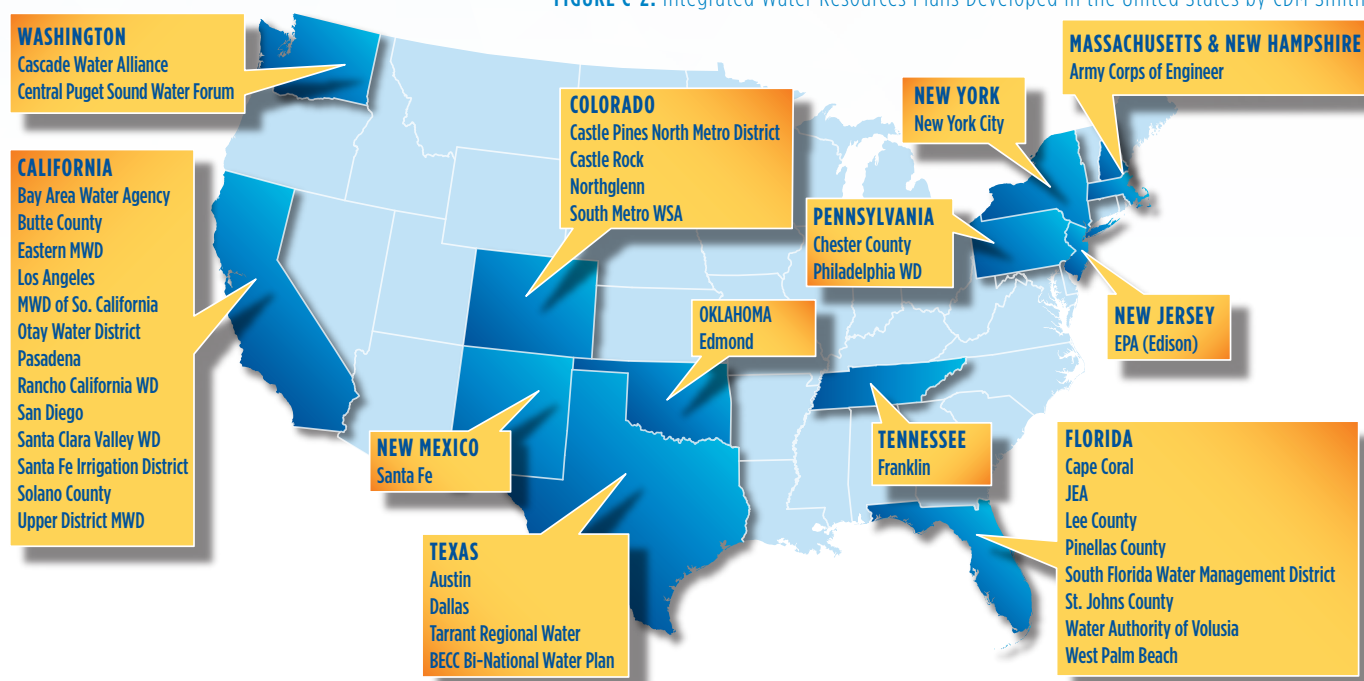
# Project Experience

For more than 65 years, CDM Smith has provided innovative solutions that integrates responsive and unwavering professional service to our clients. With annual revenues of more than \$1.2B, and more than 5,000 professionals in over 125 offices worldwide, CDM Smith is able to maintain the size, stability, and resources to take on a wide range of projects successfully.

*More specifically, CDM Smith has developed more than 40 IWRPs throughout the United States (see Figure C-2) and have used outside-the-box thinking to develop creative solutions. For example, for the City of San Diego, CDM Smith developed a new CIP-prioritization process that serves as a framework to define how best to consider economic, social and environmental impacts, and risk for the City's fully IWRP. The project resulted in increased awareness of water supply issues. We provide a description of our team's water supply planning experience and history working on projects later in this section.*

While every integrated water resources plan is unique, CDM Smith has developed a proven process that has been adaptive to accounting for the local environment, existing conditions, and unique attributes of water service areas around the world.

FIGURE C-2: Integrated Water Resources Plans Developed in the United States by CDM Smith



## Leaders in Texas Water Supply Planning

In Texas, CDM Smith staff have been working on water supply issues for many years and have gained valuable insights to benefit the City of Sugar Land. *Our team offers a deep bench of Texas-focused water planning experts who understand the State's regulatory and regional water planning frameworks and can anticipate challenges and issues that will arise when developing an IWRP.* For example, CDM Smith led the initiative to revise existing Aquifer Storage and Recovery (ASR) regulations to address issues limiting the use of ASR as a water supply strategy – which will ultimately facilitate the City's use of existing surface water rights for future ASR projects.

In addition, we understand the importance of ensuring the recommended strategies from the City's IWRP are integrated into the Region H Water Plan, which ensures eligibility for funding from the State Water Implementation Fund for Texas (SWIFT). Furthermore, CDM Smith has a significant and proven track record of successfully working with clients to obtain funding from SWIFT, as well as the open market, public private partnerships, and alternative delivery approaches.

## Sugar Land Experience

CDM Smith has been working in partnership with the City of Sugar Land for many years, having successfully supported a wide variety of water, wastewater, and reclaimed water programs, such as the award-winning 9-mgd Surface Water Treatment Plant (2015 Texas ACEC Engineering Excellence Award – Water Resources) and the Riverstone Groundwater Plant Improvements to help address the City's long-term water supply and infrastructure needs.

*Through our long-term relationship working with the City, we have gained in-depth knowledge and experience working with the water issues and initiatives that are important to community and the City's future. CDM Smith, along with our partner KIT, will continue to build on our vast understanding of the City's water resources in order to develop innovative, integrated, and inclusive solutions through the City's anticipated build-out condition in 2040...and beyond.*



## Austin Integrated Water Resources Plan

### Austin Water (TX)

The City of Austin's water supply from the Colorado River is vulnerable to droughts and long-term climate change. As the City continues to grow, the stresses placed on its water resources and infrastructure are compounded. CDM Smith is currently working with the City to develop its first Integrated Water Resource Plan.

*To date, CDM Smith has worked closely with the City to complete the following tasks:*

#### Key Features / Relevancy

- Demand Forecasting
  - Spatially Disaggregated Reclaimed Water Evaluation
  - Water Supply Alternative Evaluations Using Decision-Support Tools
  - Public Stakeholder Process
- *Developed an IWRP methodology for use by the City of Austin, which reflects the CDM Smith approach of using multi-criteria decision analysis to evaluate portfolio options with regard to objectives and performance measures established by the City and its Citizen Task Force*
  - *Refined the City's demand model and developed a statistical model that can be used to evaluate impacts of precipitation and temperature on the City's demands. This includes developing spatially disaggregated potable and non-potable demands across the City.*
  - *Selected demand management (i.e., conservation) strategies for the IWRP*
  - *Worked closely with the City and their Water Availability Modeling (WAM) consultant to conduct a needs assessment for each of the critical time horizons*

#### Project Status

Ongoing (est. June 2018)

#### Project Value

Plan Fee: \$1M

CDM Smith is currently working with the City to identify water supply options. These options are going through a screening process, which will be used to select the preferred options which will be presented at upcoming Citizen Task Force meeting. After the options are selected, both the demand management and water supply options will be characterized to develop more detail about each option for use in the portfolio development process.

One unique aspect of the Austin IWRP is the consideration of decentralized reuse opportunities. CDM Smith and our subconsultants are using the spatially disaggregated demand model to evaluate opportunities for decentralized reuse, stormwater harvesting and rain water harvesting facilities across the City. Next steps for the project after the options evaluation will be to develop portfolio themes, prepare a portfolio tool to aggregate the various options identified for the plan and conduct the portfolio development and screening process. Once the portfolios have been evaluated, CDM Smith will prepare a plan report for the City's review and eventual adoption by City Council.

The result of the IWRP will be a 100-year plan for the City of Austin that reflects community values and provides the City with the ability to adapt to changing conditions.



## St. Johns County Integrated Water Resources Plan

### St. Johns County Utilities (FL)

As a subconsultant to Jones Edmunds, CDM Smith provided St. Johns County with an IWRP that focused on improving water supply reliability while also addressing stormwater, wastewater, and environmental issues. The IWRP includes a broad stakeholder-based process with CDM Smith providing the workshop facilitation including stakeholders from the County Public Works Department, as well as several Florida cities within the County including Palm Coast, St. Augustine, Hastings, and the City of St. Augustine.

*Water supply options included conjunctive use of groundwater, expanding water conservation and water reuse, stormwater harvesting, desalination, regional surface water plus treatment, and agricultural water efficiencies. Additionally, a systems model and decision support tool was also developed to evaluate the supply options in an integrated fashion, showing impacts on supply reliability, wastewater and stormwater systems.*

Variations in demand patterns are considered by allowing the County to run high, medium, and low demand forecast scenarios. Additionally, the impact of climate is considered by allowing the user to run dry, normal, and wet scenarios. The demand response to varying climate conditions was developed based on more than 50 years of historical demand patterns coupled with meteorological data.

#### Key Features / Relevancy

- STELLA Modeling
- Water Supply & Reuse Alternatives Evaluation
- Stakeholder Facilitation & Communication

#### Project Status

Complete (2015)

#### Project Value

**Total:** \$488K (Overall)

**CDM Smith Fee:** \$208K



## Pasadena Water Integrated Resources Plan

### City of Pasadena Water & Power Department (CA)

CDM Smith was hired by the City of Pasadena Water and Power Department (PWP) to develop a Water Integrated Resources Plan (WIRP). The WIRP process included:

- Establishing WIRP objectives and performance measures
- Projecting water demands and potential conservation
- Identifying and characterizing over fifty water supply options
- Conducting technical analysis and ranking supply portfolios using decision support software
- Developing an adaptive implementation strategy for each recommended option, based on future decision triggers

For each option, CDM Smith prepared planning-level technical analysis to characterize option yields, variability in supply, capital and operation and maintenance costs, water quality attributes, environmental impacts, and implementation issues. *CDM Smith collaborated with PWP staff and stakeholders to combine the options into portfolios, and developed a decision model to rank the portfolios accounting for multiple planning objectives. The ranking results provided valuable information for making project recommendations, and sensitivity analyses were performed to test robustness of the results to uncertain planning factors such as growth in demands or financial constraints.*

An implementation strategy was developed that identified projects and actions to move forward with in the near-term, and decision triggers that influence future actions and implementation decisions. The result of the WIRP is long-term water resources strategy through the 2035 planning year that reflects community values and adapts to changing conditions.

#### Key Features / Relevancy

- Demand Forecasting
- Water Supply Alternatives Evaluation
- Decision Support Modeling

#### Project Status

Complete (2011)

#### Project Value

\$500K



## Franklin Integrated Water Resources Plan

### City of Franklin (TN)

In response to rapid growth and the corresponding pressure on all City services, CDM Smith was hired to develop a comprehensive, implementable, and affordable IWRP, focusing on stakeholder-derived objectives as the central measure of success. The project was driven by the ever-tightening regulatory atmosphere, specifically in regard to the Harpeth River for use as an additional water supply source for the City's WTP, and as an effluent-dominated receiving stream for the WTP.

*The project's success could be attributed to CDM Smith's specialized insights in two key areas of water planning:*

- *River basin modeling using unimpaired flows that accounts for multi-sectorial water uses, the environmental needs of the river, and impacts during high and low flow periods.*
- *Facilitating a series of stakeholder workshops and public forums that defined overall objectives, performance measures, and alternatives, and which also helped interpret complex technical results to decision makers.*

The models were scientifically defensible based on numerous workshops and technical forums hosted by CDM Smith and were critical to the overall planning process. Ultimately, decisions derived from model result interpretations formed the basis of a consensus recommendation for expanding water and wastewater facilities, and develop programs for reclaimed water usage and stormwater management. The plan was approved and subsequently funded. Since, the models have also been used to support permit applications/negotiations with Tennessee Department of Environment & Conservation.

#### Key Features / Relevancy

- STELLA Modeling
- Conceptualized & Evaluated Alternatives
- Stakeholder Facilitation & Communication

#### Project Status

Complete (2012)

#### Project Value

\$1.7M



## Tarrant Regional Integrated Water Supply Plan

### Tarrant Regional Water District (TX)

TRWD provides raw water to more than 1.7M people in the North Central Texas, serving more than 30 wholesale customers including the cities of Fort Worth, Arlington, Mansfield, and the Trinity River Authority. *The Integrated Water Supply Plan (IWSP) began as an evaluation of TRWD's raw water transmission system. During the preliminary phase, the project team developed a system operations model using STELLA to represent infrastructure operations of the integrated transmission system for TRWD and Dallas Water Utilities. The IWSP expanded this effort to identify new water supplies with the greatest potential benefit for water supply reliability.*

The IWSP expanded the modeling platform developed for the raw water transmission system and added the ability to evaluate ongoing options/scenarios – allowing the water supply plan to evolve.

*Phase 1 (complete) provided an implementation plan for the next 50 years that is adaptive and maximizes reliability while minimizing the effect on customer rates. TWRD staff training was also included in Phase 1, which focused on the STELLA model and how they could apply the tool for their own use. Phase 2 assessed additional innovative water resource supply strategies such as increased potable reuse of wastewater, and changes to water demand characteristics in the future.* Phase 2 also includes an aquifer storage and recovery (ASR) feasibility study at eight potential Tarrant County sites.

#### Key Features / Relevancy

- Scenario Planning
- STELLA Modeling
- Conceptualized & Evaluated Alternatives

#### Project Status

Phase 1: Complete

Phase 2: Complete

#### Project Value

Total: \$1.1M (Overall)

CDM Smith Fee: \$850K



## San Diego Long-Range Water Resources Plan

### San Diego Public Utilities (CA)

In 2002, CDM Smith prepared the City of San Diego's first Long-Range Water Resources Plan (LRWRP). This plan won high praise by stakeholders and City Council in being comprehensive, well-written and highly strategic. In 2013, CDM Smith completed a comprehensive update, called the 2012 LRWRP, which won the grand prize in planning from the American Academy of Environmental Engineers and Scientists in 2014. The LRWRP was also selected by the International Water Association for its 2014 grand prize winner for planning.

*This plan incorporated a more robust decision-making approach; involved public stakeholders over the course of two years and five stakeholder advisory workshops; incorporated climate change impacts on water demands and water supplies; and evaluated comprehensive water supply portfolios to develop a long-term strategy for meeting multiple City objectives.*

The 2012 LRWRP was highly engaging and included visually appealing graphics and maps that evolved as stakeholder needs and desired evolved. The plan's recommendations included expanding the City's already effective water conservation program, developing local groundwater resources by a combination of brackish desalination and conjunctive use, and implementing potable reuse by purifying wastewater at the City's reclamation plants for storage in the City's surface reservoirs. The plan also calls for the Public Utilities Department to work in partnership with the City's Public Works Department to develop cost-effective rainwater harvesting.

#### Key Features / Relevancy

- Demand Forecasting
- Conceptualized Water Supply Alternatives
- STELLA Modeling

#### Project Status

Complete (2013)

#### Project Value

2002 (Plan Fee): \$500K

2012 (Plan Fee): \$410K



## Riverstone Groundwater Plant Improvements

### City of Sugar Land (TX)

KIT designed improvements that include the flow control and metering of incoming surface water, mixing of surface water and groundwater, and increasing the capacity of the booster pump station. Improvements include a 1.5 MG pre-stressed concrete ground storage tank, addition of mechanical

mixing equipment at two ground storage tanks, chemical feed modifications, computer modeling of the distribution system and addition of two distribution system booster pumps. Presently, KIT is overseeing the construction of the improvements and conducting a water quality blending study.



## Water, Wastewater & Reclaimed Water Master Plan & Rate Analysis

### City of Richmond (TX)

The City of Richmond (City) provides water and wastewater services to its residents within the service area. The City has approximately 6,800 customers that include residential, commercial and industrial customers. The City retained KIT Professionals, Inc. (KIT) to prepare an integrated water, wastewater and reclaimed water utility master and financial plan. The City would like the utility master and financial plan to cover a planning period of 10 years.

As part of this project, the City would like KIT to develop the capital improvement program (CIP) for 1 to 5 and 6 to 10 year planning periods for water, wastewater and reclaimed water systems. The City also wants a comprehensive rate and impact fee analysis for water, wastewater, surface water conversion and reclaimed water. The project also involves updating the Groundwater Reduction Plan (GRP) based on anticipated growth, which will maximize the credits from reclaimed water use.

# Project Understanding & Coordination

The City of Sugar Land is a vibrant community located in Fort Bend County. The City and the surrounding communities are rapidly growing, and have established a diverse water supply portfolio comprised of groundwater, surface water and reclaimed water sources to meet the anticipated needs. The City has taken the lead in the development and implementation of a regional Groundwater Reduction Plan, partnering with 17 other water providers to devise a strategy to comply with Fort Bend Subsidence District deadlines to reduce groundwater use by 30% in 2014 and by 60% in 2025. The City successfully met the 2014 conversion deadline through a combination of strategies, including construction of the award-winning 9-mgd surface water treatment plant that was proudly designed by CDM Smith.

The City is now looking toward the future, and would like to develop a clear vision and strategic direction to meet the 2025 GRP deadline while also improving system reliability; refining the timing of major infrastructure improvements; and planning the best use of the City's water resources – especially reclaimed and raw water sources, as well as further defining the City's role as a regional water supplier. To accomplish these goals, the City has initiated an IWRP process.

## Services

We understand that the City is requesting services to assist with developing a reliable IWRP. CDM Smith has developed a proven IWRP approach (Figure C-3) that aligns with the City's scope of services.

*Our approach includes working with City staff, the Citizen Task Force and Council Task Force to establish "How" the plan will be implemented (through options and alternatives for solving the problem) in context with "Why" a decision is ultimately made (based on objectives and performance measures). This approach incorporates input from stakeholders to ensure the plan receives broad support from the community.*

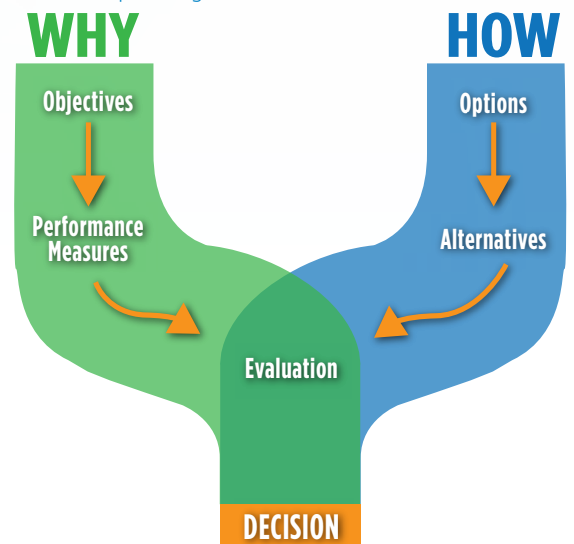
Services our team anticipates providing for the City include the following:

- Assist City with refining their evaluation framework for the IWRP;
- Develop disaggregated potable/ non-potable water demand projections;
- Conduct a gap analysis to characterize the limitations and potential opportunities for serving the City's existing and future water demands;
- Develop a decision support model using STELLA software that, in conjunction with a multi-criteria decision analysis tool, will be used to evaluate alternatives;
- Assist staff with communicating IWRP results through workshops and presentations; and
- Prepare final IWRP strategy and report.

## Coordination

Recognizing that communication is a critical element to the success any project, CDM Smith is committed to effectively collaborating with City staff, the Citizen Task Force, and other City consultants. Project meetings will be held regularly and notes from those discussions will be distributed to document key decisions and corresponding scheduling. Information sharing will be facilitated through the SharePoint website, which will be established for the project. The SharePoint portal will also be used to track status of data requests and source of information when received. Using these streamlined techniques on previous projects with similar scopes, we have successfully partnered with clients to develop award-winning IWRPs.

**FIGURE C-3:** CDM Smith's dual-track approach to water resource planning.



*By first focusing on defining objectives and performance measures, then identifying options and alternatives to be evaluated, CDM Smith's approach moves away from "interest-based" decisions to "performance-driven" solutions*

# Quality Control & Assurance

To deliver all of CDM Smith's projects with the utmost attention to quality, we have fully integrated Quality Assurance/Quality Control (QA/QC) as a core process in our project delivery. We emphasize quality throughout all of our projects with implementation of both detailed guidance documents and a firm-wide cultural commitment to exceeding our clients' expectations for quality.

To formalize our commitment to quality, CDM Smith has developed a Quality Management System (QMS), which provides guidelines to address different facets of quality throughout the organization, including a specific quality program for construction. To aid in the implementation of best-practices during execution of all the services provided by CDM Smith, we have developed a series of comprehensive Quality Management Plans (QMPs).

These documents provide value to our clients by setting out the objectives and philosophies that guide a quality-centric approach to projects before they begin. CDM Smith teams automatically implement these plans upon project startup. To ensure no bias in these quality reviews, we utilize senior staff that are not directly involved in the day-to-day activities of a projects.

For projects involving modeling, our QA/QC process provides reviews on:

- Model concept and schematic;
- Model calibration and goodness to fit;
- Mass-balance checks; and
- Reasonableness of model results.

*The QA/QC process include CDM Smith's senior QA/QC model reviewer, Kirk Westphal, brings more than 25 years of experience with systems models using STELLA software, and will not be involved during model development. The QA/QC process will also involve reviews from a seasoned water supply planning professional, Sue Morea, who also has more than 25 years of experience focused on planning process, conceptualization of supply options (cost and yield), environmental/regulatory issues, and evaluation of alternatives.*

FIGURE C-4: CDM Smith Quality Control & Assurance



*At CDM Smith, QA/QC is not an occasional action item; it is a continuous, self-reinforcing process that guides our actions through every phase of our projects.*

# Project Approach

The City of Sugar Land's scope of work for its IWRP is closely aligned with CDM Smith's proven methodology for developing similar plans across the United States. **Figure C-5** presents our approach for developing the City's IWRP, showing the City's scope of work task numbers (in parenthesis).

## Project Initiation | Tasks 1-2

CDM Smith will review all relevant reports, data and studies conducted by the City to assess current conditions and constraints. We will also review all modeling tools and the results of supply reliability evaluations, and identify any other needs to complete the IWRP.

## Prepare Gap Analysis | Tasks 2-4

Using the City's 2012 Water Master Plan and metered data, CDM Smith will refine water, wastewater and reclaimed water forecasts. These forecasts will be spatially developed, and forecast over time based on population growth projections provided by the City.

We will use available data to split water demands into total system indoor versus outdoor uses and, to the extent possible, indoor versus outdoor uses for residential and all other sectors. We will use proven statistical regression analysis, which can indicate how monthly water use varies due to weather, demographics and household characteristics.

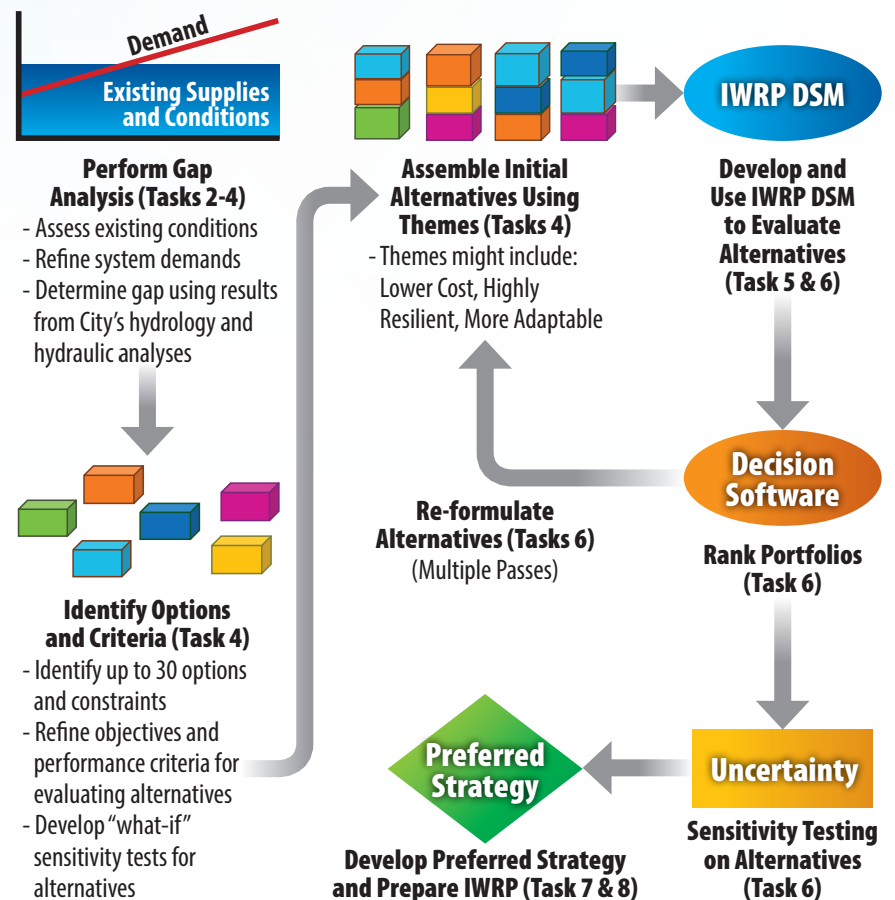
CDM Smith will incorporate work currently being done by the City to estimate the reliability of its existing water supplies using WAM modeling of the Brazos River and Oyster Creek, and groundwater modeling of City's wells.

We will work with the City to determine what period of record and drought conditions should be used for estimating reliability. We will also incorporate any major existing infrastructure constraints (i.e., treatment plant, supply conveyance, and well capacities) in order to show both a "supply" and "system" gap over time.

The gap analyses will be presented for years 2018, 2025 and 2040. The gap for each time horizon will be programmed into our IWRP DSM, so that alternatives can be evaluated in terms of their ability to reduce the gap.

## Develop Options, Alternatives and Criteria | Task 4

In addition, the CDM Smith team will work with the City to identify innovative options and maximize opportunities for alternative water supplies as allowed by the FBSD including the identification and development of over-conversion credits. One such opportunity may be the use of aquifer storage and recovery currently being evaluated by the FBSD and the Harris Galveston Subsidence District, which may provide an opportunity for gaining FBSD over-conversion credits in future regulatory plans.



**FIGURE C-5:** CDM Smith's Approach for Developing City of Sugar Land IWRP.

Understanding that it is likely no single option will be able to meet all the needs of the City, options will be combined into integrated alternatives. Initially we will prepare up to 10 initial alternatives to be evaluated. For ease of communication, we will recommend ways for City to engage Citizen Task Force on developing alternatives (see **Figure C-6** for example).

We will work closely with the City in reviewing and refining the IWRP objectives and performance criteria and assist with assigning relative weights of importance for the criteria. The performance criteria and weights will be used to evaluate and show trade-offs between the alternatives. CDM Smith will help guide the process to ensure that the criteria are: (1) distinctive and non-redundant; (2) measurable; and (3) concise in numbers.

## Develop IWRP DSM and Use to Evaluate Alternatives | Tasks 5-6

CDM Smith will use the commercial systems software STELLA (by isee systems) to construct the IWRP DSM. Systems models differ from detailed hydrology and hydraulic models in that they represent integrated systems (water, wastewater, stormwater, receiving waters) that can approximate the interactions between these systems.

We have successfully developed over a dozen STELLA models for water plans, starting with a conceptual schematic of the system (see **Figure C-7** for example). We will use the IWRP DSM to evaluate water, wastewater, and reuse flows, estimate high-level capital, fixed and variable operational and maintenance costs, and impacts on major infrastructure timing.

We will also incorporate the City's GRP accounting model framework into the DSM to track compliance with the City's GRP. The model will also indicate the overall system reliability of the various alternatives.

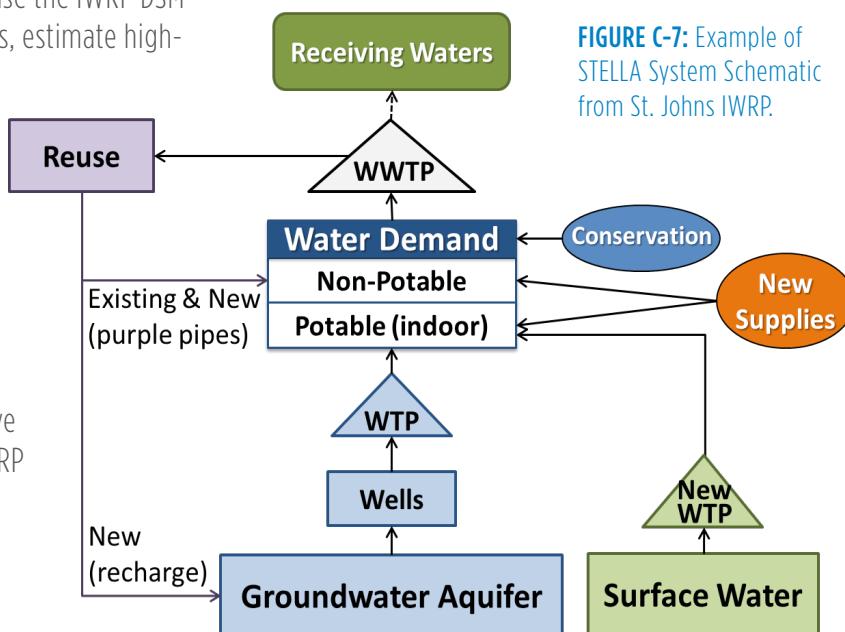
We will conduct several iterations of alternative evaluations, as we did for St. Johns County IWRP (see **Figure C-7**), with each pass getting more refined.

We will use a decision software to rank the alternatives for each pass, clearly showing trade-offs against the criteria (see **Figure C-8**).

The decision software will incorporate the results from IWRP DSM, along with other metrics.

**FIGURE C-6:** Development of Alternatives for St. Johns County IWRP.

|                  | Initial Alternatives |          |                  |                     | Hybrid Alternatives |                    |                        |                     |
|------------------|----------------------|----------|------------------|---------------------|---------------------|--------------------|------------------------|---------------------|
| Options          | Status Quo           | Low Cost | High Reliability | High Sustainability | Low Cost Plus       | High Rel w/o Desal | High Rel w NW Transfer | High Rel w SJ River |
| Wells & WTP      | ○                    | ◐        | ●                | ○                   | ◐                   | ●                  | ◐                      | ●                   |
| Interconnects    | ○                    | ◐        | ○                | ◐                   | ◐                   | ○                  | ◐                      | ○                   |
| Conservation     | ○                    | ◐        | ○                | ●                   | ◐                   | ○                  | ○                      | ○                   |
| Ag Conservation  | ○                    | ○        | ○                | ◐                   | ○                   | ◐                  | ◐                      | ○                   |
| Stormwater Harv. | ○                    | ○        | ○                | ●                   | ◐                   | ◐                  | ◐                      | ○                   |
| WW Reuse         | ○                    | ○        | ○                | ●                   | ●                   | ○                  | ○                      | ○                   |
| Desalination     | ○                    | ○        | ●                | ○                   | ○                   | ○                  | ○                      | ○                   |
| St. Johns River  | ○                    | ○        | ○                | ○                   | ○                   | ○                  | ○                      | ●                   |



**FIGURE C-7:** Example of STELLA System Schematic from St. Johns IWRP.

## Workshops on Results & Develop Preferred Strategy | Tasks 7-8

CDM Smith will assist City staff with presentations to the City Executive Team and Citizen Task Force on results of the IWRP.

We will also help develop presentation materials and provide support for two stakeholder workshops. The input received from these presentations and workshops will be used to develop a preferred IWRP strategy.

The strategy will include a near, mid, and long-term road map for implementing options using an adaptive management approach. The adaptive management approach involves identifying “no-regret” options that provide benefits under a wide range of future uncertainty, developing “triggers” based on uncertainty, and “actions” that can be undertaken based on outcome of the “triggers”. This approach will help ensure that the IWRP is more of a living document that can easily be updated as the future unfolds.

## Working Collaboratively

Throughout this project, CDM Smith will work collaboratively with City staff. We strongly believe that us working as an extension of our client’s staff produces the best results, especially in planning studies. Working collaboratively also ensures the best cross-training of expertise.

FIGURE C-8: Multiple Passes of Alternatives Development.

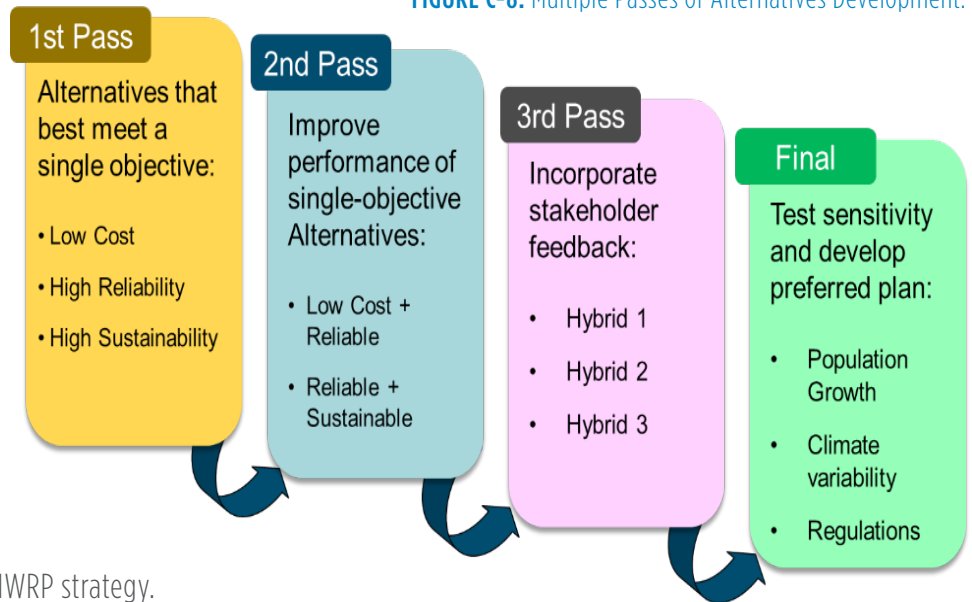
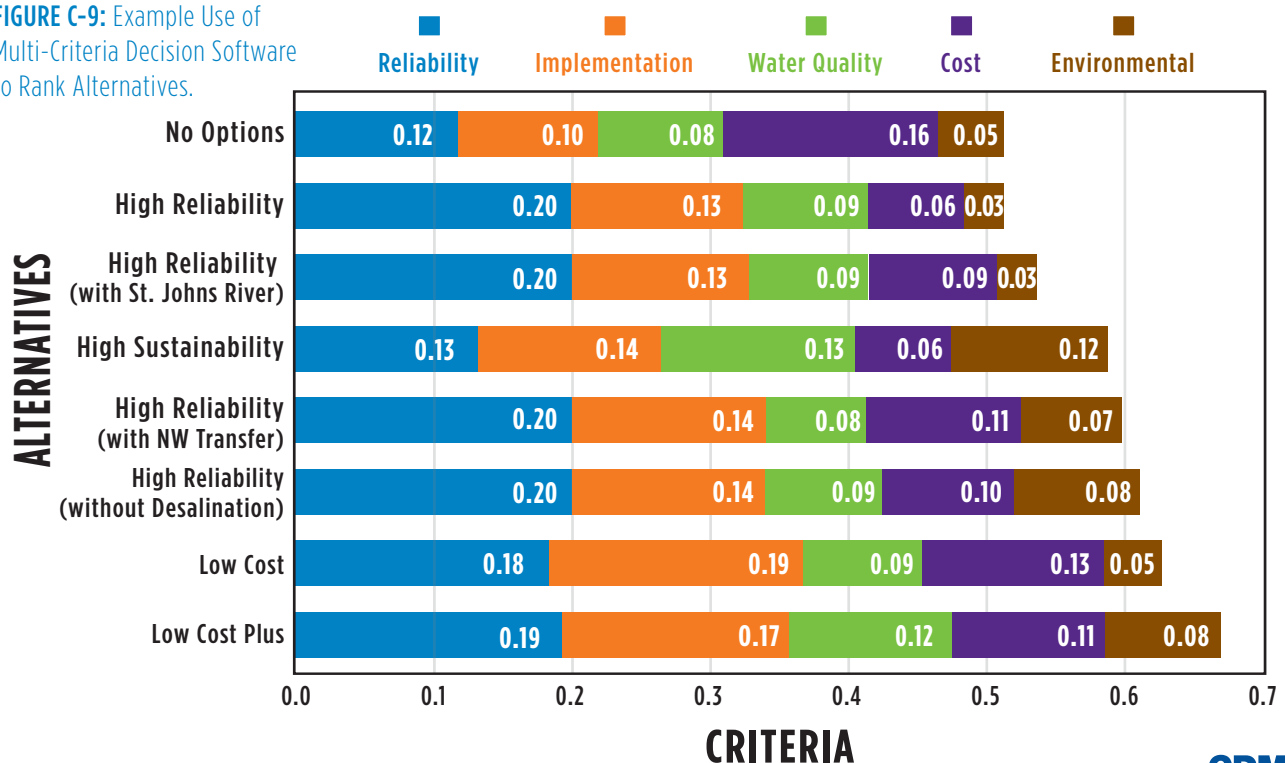
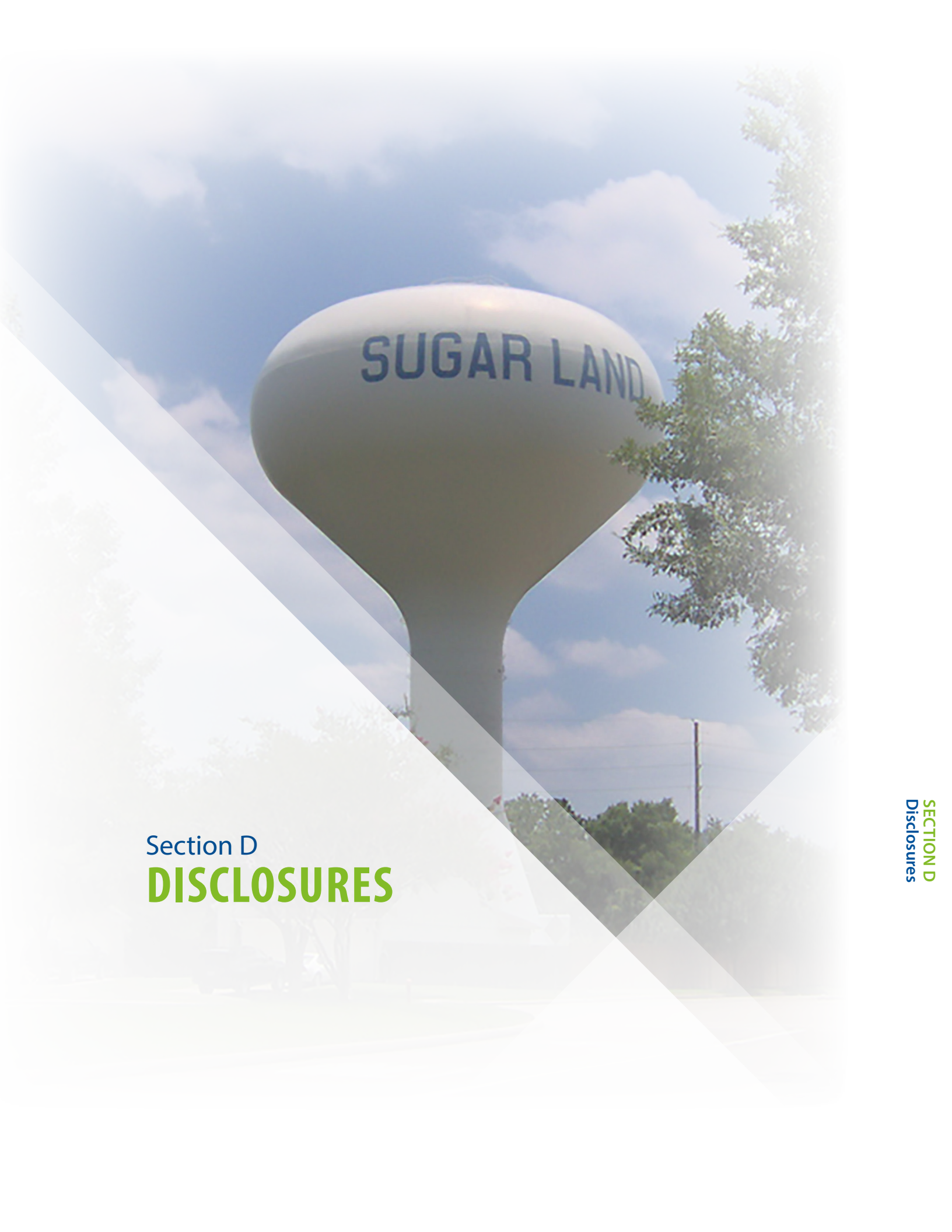


FIGURE C-9: Example Use of Multi-Criteria Decision Software to Rank Alternatives.





Section D

**DISCLOSURES**



## CITY OF SUGAR LAND

**CONTRACTOR INFORMATION**Name: CDM Smith Inc.Address: 11490 Westheimer Rd #700Houston, TX 77077Principal Contact: Amber Batson, PE (Client Service Leader)Tax ID Number: 04-2473650Project Number: RFQ 2017-14Project Name: Integrated Water Resources Plan**Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion**

Indicate in the appropriate box which statement applies to the covered potential contractor:

- ☒ The potential contractor certifies, by submission of this certification, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this contract by any federal department or agency or by the State of Texas.

The potential contractor is unable to certify to one or more of the terms in this certification. In this instance, the potential contractor must attach an explanation for each of the above terms to which he is unable to make certification. Attach the explanation(s) to this certification

The undersigned certifies that the potential contractor will not knowingly enter into any subcontract with a person who is excluded, debarred, suspended, declared ineligible or voluntarily excluded from participation in this covered transaction, unless authorized by the city of Sugar Land, Texas. The undersigned further certifies that the potential contractor will include this section regarding exclusion, debarment, suspension, ineligibility and voluntary exclusion without modification in any subcontracts or solicitations for subcontracts.

The undersigned swears that he/she is authorized to legally bind the prospective contractor to the above-described certification and is fully aware that this certification is made under penalty of perjury under the laws of the State of Texas.

Signature/Authorized Certifying Official

Amber Batson, Client Service Leader

Typed Name and Title

CDM Smith Inc.

Prospective Contractor/Organization

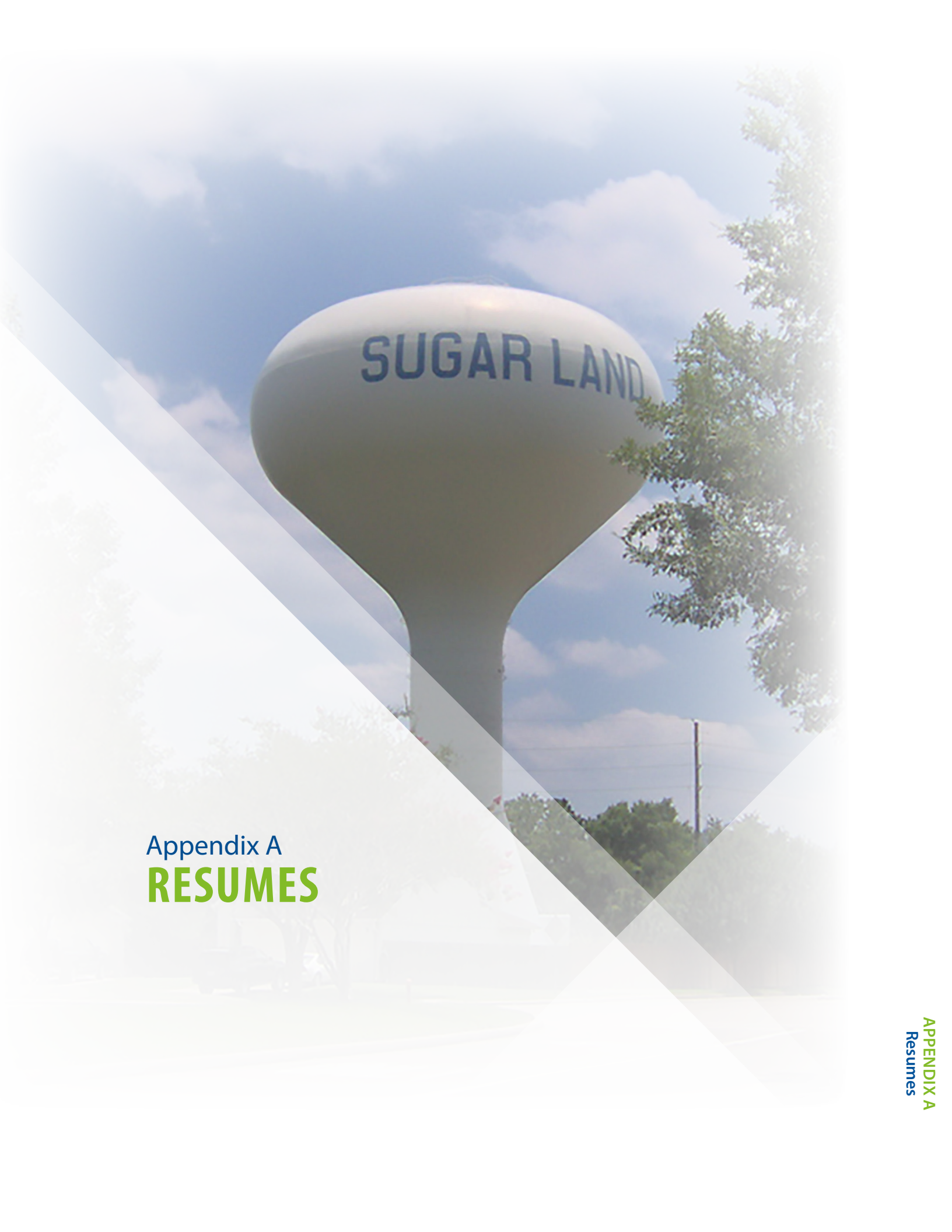
June 23, 2017

Date Signed

TBPE F-3043

State Contractor License No. (if any)

| <b>CONFLICT OF INTEREST QUESTIONNAIRE</b><br><b>For vendor or other person doing business with local governmental entity</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                               | <b>FORM CIQ</b> |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|-----------------|
| <p>This questionnaire reflects changes made to the law by H.B. 1491, 80th Leg., Regular Session.</p> <p>This questionnaire is being filed in accordance with Chapter 176, Local Government Code by a person who has a business relationship as defined by Section 176.001(1-a) with a local governmental entity and the person meets requirements under Section 176.006(a).</p> <p>By law this questionnaire must be filed with the records administrator of the local governmental entity not later than the 7th business day after the date the person becomes aware of facts that require the statement to be filed. See Section 176.006, Local Government Code.</p> <p>A person commits an offense if the person knowingly violates Section 176.006, Local Government Code. An offense under this section is a Class C misdemeanor.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <b>OFFICE USE ONLY</b><br><hr/> Date Received |                 |
| <div style="border: 1px solid black; padding: 2px;">1</div> <b>Name of person who has a business relationship with local governmental entity.</b><br><br>CDM Smith Inc.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                               |                 |
| <div style="border: 1px solid black; padding: 2px;">2</div> <input type="checkbox"/> <b>Check this box if you are filing an update to a previously filed questionnaire.</b><br><br>(The law requires that you file an updated completed questionnaire with the appropriate filing authority not later than the 7th business day after the date the originally filed questionnaire becomes incomplete or inaccurate.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                               |                 |
| <div style="border: 1px solid black; padding: 2px;">3</div> <b>Name of local government officer with whom filer has employment or business relationship.</b><br><br><div style="text-align: center;"> <u>N/A for RFQ Integrated Water Resources Plan (RFQ 2017-14)</u><br/> Name of Officer </div> <p>This section (item 3 including subparts A, B, C &amp; D) must be completed for each officer with whom the filer has an employment or other business relationship as defined by Section 176.001(1-a), Local Government Code. Attach additional pages to this Form CIQ as necessary.</p> <p>A. Is the local government officer named in this section receiving or likely to receive taxable income, other than investment income, from the filer of the questionnaire?</p> <div style="display: flex; justify-content: center; gap: 20px;"> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No </div> <p>B. Is the filer of the questionnaire receiving or likely to receive taxable income, other than investment income, from or at the direction of the local government officer named in this section AND the taxable income is not received from the local governmental entity?</p> <div style="display: flex; justify-content: center; gap: 20px;"> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No </div> <p>C. Is the filer of this questionnaire employed by a corporation or other business entity with respect to which the local government officer serves as an officer or director, or holds an ownership of 10 percent or more?</p> <div style="display: flex; justify-content: center; gap: 20px;"> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No </div> <p>D. Describe each employment or business relationship with the local government officer named in this section.</p> |                                               |                 |
| <div style="border: 1px solid black; padding: 2px;">4</div> <div style="display: flex; justify-content: space-between; margin-top: 20px;"> <div style="text-align: center;"> <br/> <hr style="width: 100%;"/> Signature of person doing business with the governmental entity </div> <div style="text-align: center;"> June 23, 2017<br/> <hr style="width: 100%;"/> Date </div> </div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                               |                 |



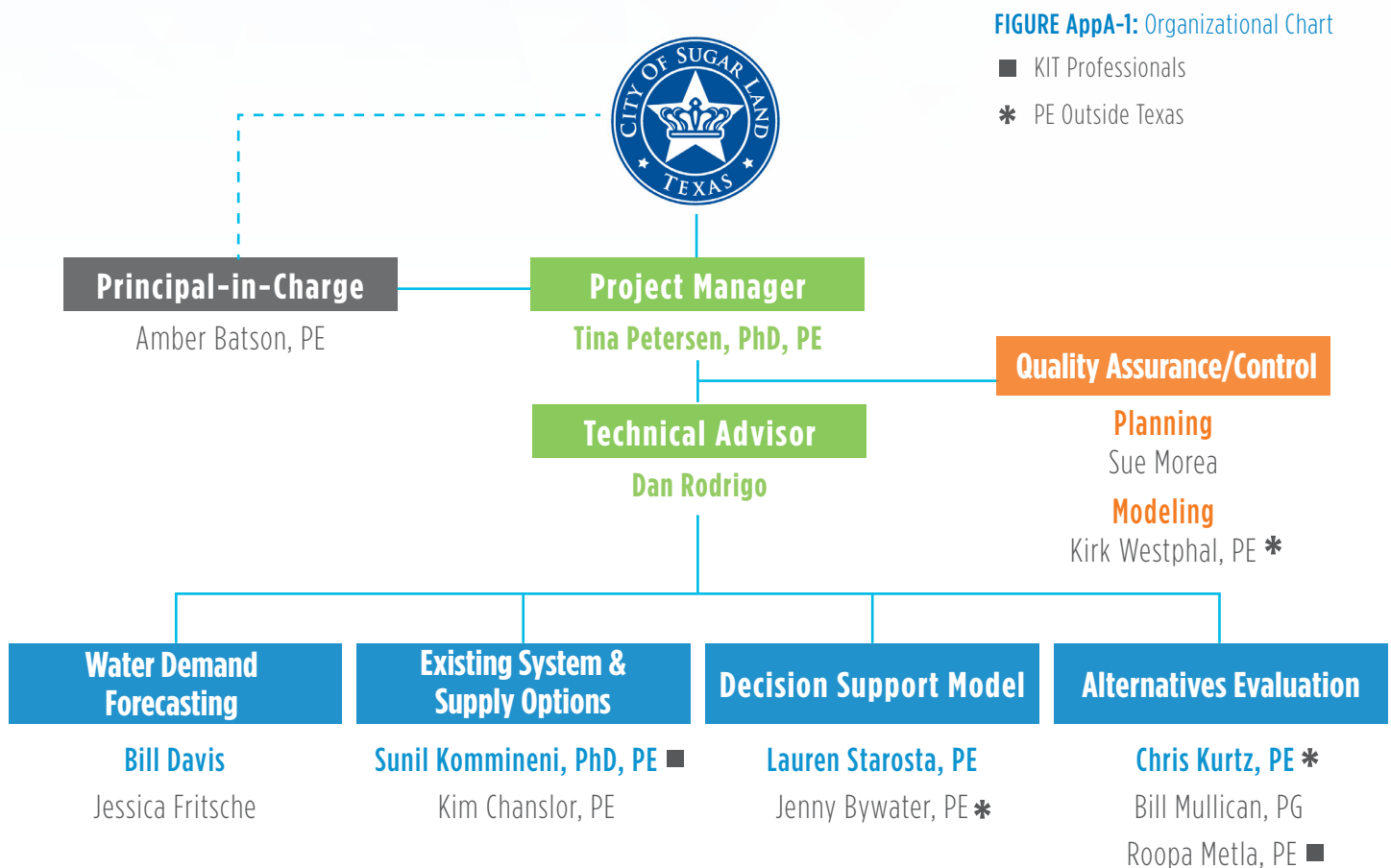
Appendix A  
**RESUMES**

# Appendix A | Résumés

CDM Smith brings a team of professionals with proven experience in forecasting water needs, decision support modeling using STELLA, conceptualization of supply options, resiliency planning, and engineering expertise in water, wastewater, and reuse infrastructure.

The personnel highlighted **Figure AppA-1** will ensure the successful execution and delivery of a high-quality IWRP that will identify cost-effective and sustainable combinations of capital projects, management strategies and policies – with the ultimate goal of responsibly meeting the City’s future water needs.

The CDM Smith Team brings proven national experience developing integrated water plans, together with local knowledge of Sugar Land. To that end, we have partnered with KIT Professionals, a Houston-based multi-disciplined consulting engineering firm that specializes in all aspects of drinking water and wastewater infrastructure engineering.





## Tina Petersen, PhD, PE

### Project Manager

*Tina is an experienced water supply planning engineer and project manager based in Houston, Texas with more than 15 years of experience. She has lead numerous high profile water supply planning projects in Texas. She is also familiar with local regulatory environment having developed several Groundwater Reduction Plans to assist clients in meeting Fort Bend Subsidence District requirements.*

*She is considered a leader in integrated water resource planning for Texas, having worked with key water supply agencies such as City of Dallas, Tarrant Regional Water District and City of Austin on their integrated planning efforts. Beyond water supply planning, she works with clients to meet complex and stringent local, state and federal regulatory requirements related to stormwater, water reuse and water quality planning, as well as compliance with MS4, TMDLs, NPDES requirements.*

*As our team's project manager, Tina will work closely with the City of Sugar Land to coordinate between the project team, the City's reliability consultant and City staff to track project scope, schedule and budget – and ensure that the project team is working to find the best solutions for the City's complex system of groundwater, surface water and regulatory compliance requirements using our proven approach to integrated water resources planning.*

**Project Manager, Austin Integrated Water Resources Plan, Austin Water Utilities (TX).** The Austin Integrated Water Resources Plan (IWRP) is being led by Dr. Petersen. With this plan, Austin Water will have the tools to plan for the next 100 years of their water future. The plan requires working in close consultation with Austin Water and will include selection of demand and supply side options that will be aggregated into a series of portfolios that will be evaluated using Criterion Decision Plus to compare the portfolios. The plan included several innovative aspects, such as explicit consideration of climate change on both demand and supply side options, spatially distributed demand modeling, and a detailed evaluation of distributed supplies such as graywater, blackwater and wastewater skimming.

**Task Leader / Project Engineer, Tarrant Regional Integrated Water Supply Plan, Tarrant Regional Water District & City of Dallas (TX).** Dr. Petersen was part of a project team developing a system operations model using STELLA to represent the infrastructure operations of the integrated transmission system for TRWD and Dallas Water Utilities. Tasks associated with this project included evaluation of different operational scenarios and associated costs. The operations model was the one and only model that represented the TRWD, Dallas, and the Integrated Pipeline (TRWD and Dallas) operations.

**Project Manager, Dallas Long-Range Water Supply Plan, Dallas Water Utilities (TX).** For this project, Dr. Petersen led a team of engineers and planners to provide an update to the Dallas Long Range Water Supply Plan. Tasks included providing guidance on groundwater regulatory environment, and developing options to incorporate the Integrated Pipeline into the Dallas Water Utilities System through their existing water treatment plants, or a new Southwest Water Treatment Plant, as well as providing reuse and new intra-state water supply options. The team also worked to support regional coordination, and identification of emergency supplies.

#### Years of Experience

15 years

#### Education

PhD, Environmental Engineering, University of Houston

MS, Environmental Engineering, University of Houston

BS, Biology & Environmental Studies, Baylor University

#### Registration

- Professional Engineer:
  - » Texas

#### Areas of Expertise

- Water Supply Planning
- Water Quality Evaluation
- Water Reuse Planning

**Project Manager, Water Reuse Feasibility Study, Permitting and Water Quality Evaluation, Wichita Falls (TX).** Dr. Petersen was Project Engineer for both indirect and direct potable reuse for Wichita Falls. The indirect potable reuse alternatives evaluated sending approximately 10 mgd of reclaim water to either Lake Arrowhead, a current water supply source, or Lake Wichita which was a previous water supply source for the city. The direct potable reuse options evaluated modifications to either of the city's two water treatment plants for advanced treatment of up to 10 mgd of reclaim water.

**Project Manager, Ellis and Johnson Counties Regional Supply Study, Tarrant County (TX).** Dr. Petersen managed this project to evaluate regional water supply alternatives for Ellis and Johnson Counties using the STELLA model developed for the Integrated Pipeline Study. Alternatives being evaluated included terminal storage options and water integration plans for several water supply reservoirs in Central Texas to prioritize use of local supply and improve the reliability of the regional water supplies for the counties. The project also included coordination with water user groups and regional wholesale water providers for the Upper Trinity basin.

**Task Lead/Project Engineer, League City Water Reuse Feasibility Study, City of League City (TX).** Dr. Petersen served as Task Lead/Project Engineer for the reuse feasibility study, which consisted of evaluating potential reuse customers, determining potential reuse infrastructure and developing a reuse model to evaluate infrastructure requirements. The project included development of conceptual level cost estimates for reuse infrastructure.

**Project Manager, Water Conservation Planning, Confidential Power Generation clients (TX).** Dr. Petersen led several water conservation studies for natural gas combined cycle power plants throughout Texas. The projects involved several phases: drought support services to evaluate water supply risk and potential for water competition, development of a water conservation study to identify best management practices and a water conservation plan to document the planned improvements using TCEQ industrial water conservation plan guidance. To develop the water conservation study, Dr. Petersen applied a CDM Smith-developed tool to assess initial BMP options. These BMPs were reviewed by the project team and customized to develop facility specific recommendations. Subsequently, the water conservation plan was prepared using information from the water study.

**Project Engineer, Raw Water Transmission Integration Study, Tarrant Regional Water District/City of Dallas (TX).** Dr. Petersen was part of a project team developing a system operations model using STELLA to represent the infrastructure operations of the integrated transmission system for TRWD and Dallas Water Utilities. Tasks associated with this project included evaluation of different operational scenarios and associated costs. The operations model was the one and only model that represented the TRWD, Dallas, and the Integrated Pipeline (TRWD and Dallas) operations.

**Project Manager, MS4 Permitting and Groundwater Reduction Plan Support, Fort Bend County (TX).** Dr. Petersen led the preparation of the Fort Bend County Municipal Utility District Number 25 Phase II MS4 Annual Report Submittal. As part of this task, she met regularly with district staff to review measurable goals and ensure the district was on-track for implementation. Additionally, Dr. Petersen worked with district staff to prepare and implement its Groundwater Reduction Plan as approved by the Fort Bend Subsidence District. This plan was innovative in its approach to using reuse as the primary alternative supply to meet groundwater reduction goals.

**Technical Lead, Frito Lay Groundwater Reduction Plan (TX).** Dr. Petersen assisted Frito Lay with the development of an innovative groundwater reduction planning approach for the Fort Bend Subsidence District. The approach used a hayfield water balance to account for runoff, soil moisture, and evapotranspiration - and subsequently provide Frito Lay with "credit" for the water that was being beneficially reused by the Hay Field, for overconversion credits. The results of this analysis were presented to the Fort Bend Subsidence District and was incorporated as part of the industry's approved Groundwater Reduction Planning effort. The outcome of this plan was the facility's ability to demonstrate adequate water supply for the long-term viability of the facility for future expansion potential.



## Dan Rodrigo

### Technical Advisor

*Dan is a senior water resources planner with expertise in integrated water resources management, water supply planning, and alternatives development and analysis. As the firm's leading expert in decision science and national practice lead for integrated resources planning, he has successfully used facilitation, results from systems models, and multi-criteria decision analysis to build support for dozens of water resources plans and capital improvement programs across the globe.*

*As technical advisor, Dan will guide the City in the best ways to approach the project and utilize their existing stakeholder and City council task force members. In addition, he will use the results from the alternatives evaluation to clearly show trade-offs and help guide Sugar Land in its selection of the preferred strategy. Dan will also be responsible for suggesting uncertainties and potential risks to test the alternatives against using "what-if" analysis.*

**Technical Director, Austin Integrated Water Resources Plan, Austin Water Utilities (TX).** Mr. Rodrigo served as the Technical Director and provided input, guidance, and review of the Austin Integrated Water Resources Plan, which will provide the City with the tools to plan for the next 100 years of their water future. The plan was developed working in close consultation with Austin Water and will include selection of demand and supply side options that will be aggregated into a series of portfolios that will be evaluated using multi-criteria decision analysis tools such as Criterion Decision Plus to compare the portfolios. The plan included several innovative aspects, such as explicit consideration of climate change on both demand and supply side options and a detailed evaluation of distributed supplies such as graywater, blackwater and wastewater skimming.

**Project Manager, San Diego Long-Range Water Resources Plan, San Diego Public Utilities (CA).** CDM Smith prepared the city's Long-Range Water Resources Plan (LRWRP), which examined all of the city's water resources in a holistic, interconnected manner, examining water supply, wastewater, and stormwater. Mr. Rodrigo facilitated a dedicated public stakeholder group that met 6 times to review analyses, provide crucial input, and review the plan's recommendations. One hundred percent consensus was reached by the stakeholders on the plan's recommendations. The LRWRP won the national 2014 Grand Prize in Planning Award from American Academy of Environmental Engineers and 2014 Superior Planning Award from International Water Association.

**Technical Advisor and Stakeholder Facilitator, St. Johns Integrated Water Resources Plan, St. Johns County (FL).** CDM Smith provided St. Johns with an IWRP that focused on improving water supply reliability while also addressing stormwater, wastewater, and environmental issues. The IWRP includes a broad stakeholder-based process with CDM Smith providing the workshop facilitation including stakeholders from the County Public Works Department, as well as several Florida cities within the County including Palm Coast, St. Augustine, Hastings, and the City of St. Augustine.

**Project Manager, Water Integrated Resources Plan, Pasadena Water & Power (CA).** Mr. Rodrigo managed a team to develop the city of Pasadena's first water IRP. The plan was developed with extensive stakeholder participation, including a mayor-appointed advisory committee. Over 50 water supply and conservation options were analyzed by CDM Smith, including

#### Years of Experience

25 years

#### Education

MS, Environmental Planning, Southern Illinois University

BS, Geography & Economics, Southern Illinois University

#### Registration

N/A

#### Areas of Expertise

- Integrated Water Resources Management
- Water Supply Planning
- Alternatives Development & Analysis

stormwater capture and harvesting, drought tolerant landscape replacement, cisterns and rain barrels, groundwater storage of imported surface water, and recycled water for both non-potable and indirect potable (groundwater recharge). Several scenarios were evaluated such as no demand growth and climate change in order to test how well the various combinations of options performed. A preferred strategy was recommended based on extensive decision modeling and 100 percent consensus was obtained by the advisory committee.

**Technical Advisor and Facilitator, Integrated Water Resources Planning Project, City of Franklin (TN).** Mr. Rodrigo served as technical advisor to a multi-year planning project that examined water, wastewater and stormwater in a holistic, integrated manner. A systems model and detailed river water quality model were developed and used to evaluate system reliability, cost, TMDL compliance and regulatory compliance for over a dozen integrated alternatives that represented various combinations of water supply, wastewater facility improvements, stormwater strategies, recycled water options, and various levels of water conservation. Mr. Rodrigo also served as facilitator for a dedicated group of over 15 public stakeholders representing environmental groups, water agencies, general members of the public, and state regulatory officials. The resulting plan had overwhelming support from the public and was approved by the city leaders. Many elements of the plan are now being implemented.

**Project Manager, Orange County Reliability Study, Municipal Water District of Orange County (CA).** Mr. Rodrigo is currently managing a comprehensive county-wide study evaluating current and future supply reliability. This study involves evaluating climate change, seismic risks, and other aspects that impact reliability in Orange County.

**Project Manager, Water Conservation Potential Study, Los Angeles Department of Water & Power (CA).** Mr. Rodrigo is managing a significant and first of its kind water conservation potential study for the largest municipal water agency in the country. This study involves detailed baseline water surveys of single-family, multifamily and city-owned facilities, along with meta-analysis of CII water use, to develop a comprehensive assessment of remaining potential for conservation. A model will be developed to then test the economics of increased conservation efforts in order to determine the best path forward.

**Project Manager, Los Angeles' Water Reliability 2025 Program, Los Angeles Department of Water & Power (CA).** Mr. Rodrigo managed a high-profile program called LA's Water Reliability 2025 that outlines LADWP's strategy for local water supplies and groundwater remediation. The program evaluated conservation, reuse, and stormwater capture strategies from a triple-bottom-line perspective (economic, environmental, and social) in order to develop a prioritized list of projects to be implemented within the next 15 years.

**Technical Director, Integrated Water Resources Planning Project, JEA (FL).** Mr. Rodrigo oversaw the development of an integrated water resources planning (IWRP) project for JEA. JEA is one of the largest power, water and wastewater utilities in the nation. A systems model was built to evaluate alternative water supply options such as groundwater, surface water, desalination, reclaimed water and conservation. The model will allow JEA to test different alternatives from a reliability, lifecycle cost and environmental perspective. A decision support tool was also developed to rank alternatives based on output from the systems model.

**Project Manager, Integrated Resources Plan, Upper San Gabriel Valley Municipal Water District (CA).** Mr. Rodrigo oversaw the development of the District's first IRP. The IRP forecasted water demands using an econometric statistical model, evaluated over a dozen different supply and conservation options (including groundwater, stormwater capture, imported water, non-potable and indirect potable reuse, and water transfers). The options were evaluated in terms of reliability, cost, risk, water quality and environmental impacts. A surface hydrology model was developed to analyze the supply yield from both centralized and decentralized stormwater capture and a decision support tool was used to rank alternatives. An adaptive management plan was developed to phase in the recommended strategy based risk triggers.



## Sue Morea

### Quality Assurance & Control – Planning

*Sue brings more than 25 years of international water supply planning expertise to Sugar Land in her role as QA/QC - Planning lead. She will provide technical review related to sustainable water supply diversity and reliability; demand forecasting and management; hydrology, energy, and water relationships; and scenario planning.*

*Sue has successfully led many integrated water supply planning projects across the United States, and numerous water quality studies that support water supply plans, and compliance with federal, state and local regulations. In her current role as project advisor for the City of Austin's IWRP, she is providing critical review of the evaluation of water supply options.*

#### Years of Experience

25 years

#### Education

MS, Environmental Engineering, Colorado State University

BA, Biology, University of Colorado

#### Registration

N/A

#### Areas of Expertise

- Water Supply Diversity & Reliability
- Demand Forecasting & Management
- Hydrology, Energy, & Water Relationships
- Scenario Planning

**Project Advisor, Austin Integrated Water Resources Plan, Austin Water Utilities (TX).** Ms. Morea is serving as Project Advisor for the Austin IWRP effort being led by Dr. Petersen. With this plan, Austin Water will have the tools to plan for the next 100 years of their water future. The plan was developed working in close consultation with Austin Water and will include selection of demand and supply side options that will be aggregated into a series of portfolios that will be evaluated using multi-criteria decision analysis tools such as Criterion Decision Plus to compare the portfolios. The plan included several innovative aspects, such as explicit consideration of climate change on both demand and supply side options and a detailed evaluation of distributed supplies such as graywater, blackwater and wastewater skimming.

**Project Director, Integrated Water Resources Plan (IWRP), San Andres, Columbia.** Ms. Morea is currently serving as the project director for an IWRP for San Andres, Columbia. The \$3million project includes evaluation of the San Andres aquifer, ocean desalination, and brackish groundwater desalination water supply plans.

**Project Director, Oklahoma Comprehensive Water Plan, State of Oklahoma (OK).** Ms. Morea served the Oklahoma Water Resources Development Board to update their state water plan. This was a \$2.5 million effort with the Army Corps of Engineers. The effort included evaluation of supply, demand, gap analysis, and water supply alternatives.

**Program Manager, Statewide Water Supply Initiative, Colorado Water Conservation Board (CO).** Ms. Morea is serving as program manager for landmark Statewide Water Supply Initiative (SWSI) for the Colorado Water Conservation Board. The project involves conducting a statewide water supply investigation for use in identifying solutions to persistent drought and growth problems. CDM Smith's role is to investigate supply and demand in eight river basins across the state and develop a comprehensive water supply plan that includes financing and regulatory compliance strategies.

**Project Director, Colorado Statewide Water Supply Initiative, Phase 2, Colorado Water Conservation Board (CO).** The Colorado legislature authorized and funded a second phase of the Colorado SWSI in order to develop greater understanding and consensus on key water supply issues. Ms. Morea is directing and facilitating CDM Smith in its effort to lead technical roundtables of water leaders from every basin and interest group to discuss water efficiency, environmental and recreational priorities, alternatives to permanent agricultural dry up, and develop solutions for meeting Colorado's water supply gap. The Colorado Statewide Water Supply Initiative project won an Engineering Excellence Award from the American Consulting Engineer's Council of Colorado (ACEC/CO).

**Project Director, Missouri Water Plan, State of Missouri (MO).** Ms. Morea served as project director to develop an overall work plan for the State of Missouri Water Plan update. Elements of the work plan included supply, demand, water quality, and infrastructure evaluations.

**Technical Director, Georgia Statewide Water Resources Plan, Georgia Environmental Protection Division, Georgia Environmental Protection Division & Regional Water Planning Councils (GA).** Ms. Morea provided technical direction to the Georgia EPD and Regional Water Planning Councils for the development of water resource plans for three of Georgia's Regional Water Planning Councils. This high profile, \$1.8 million project involved developing comprehensive and sustainable water supply, wastewater, and stormwater plans and management strategies for the Regional Councils. The development of sustainable and implementable regional water plans involved quantifying and forecasting current and future (through the year 2050) municipal, commercial, and industrial water needs; assessing current resources within the regions; identifying "gaps" between available water resources and future water resource needs; and developing and evaluating diverse water supply and demand management strategies that could be implemented to meet future needs while protecting water quality and natural systems.

**Technical Director, Arkansas State Water Plan, Arkansas Natural Resources Commission, Little Rock (AR).** Ms. Morea served as technical director to develop the 2014 update of the Arkansas Water Plan. The previous state water plan was completed in 1990, so this comprehensive update included water demand projections, surface water and groundwater availability assessments, and analysis of water supply gaps and development of alternatives to alleviate the projected water supply deficits. The 2014 Update of the Arkansas Water Plan was completed with unprecedented stakeholder outreach and involvement and with public support of the implementation plans.

**Officer-in-Charge, Groundwater and Surface Water Components of South Platte Decision Support System Feasibility Studies, Colorado Water Conservation Board (CO).** CDM Smith was selected by Colorado Water Conservation Board (CWCB) to conduct a feasibility study for the ground water and surface water components of the SPDSS. Ms. Morea served as the officer-in-charge on this project, overseeing both studies and all of their various components.

**Officer-in-Charge, Integrated Water Resources Plan, Castle Pines North Metropolitan District (CO).** Ms. Morea led the development of an Integrated Water Resources Plan (IWRP) and long-range water supply for this district, which is currently 100 percent dependent upon non-renewable Denver basin groundwater sources.

**Principal-in-Charge, Colorado Drought Planning Survey, Colorado Water Conservation Board (CO).** CDM Smith participated in a study for the CWCB to assess the state's drought preparedness. The results of the study helped the CWCB clarify which water providers are in need of the State's assistance and which are candidates for the state's construction fund loan program. CDM Smith provided technical expertise and guidance on issues dealing with hydrology, water rights, drought evaluations and general water resources.

**Staff Engineer, Drought Study, City of Loveland (CO).** Ms. Morea assisted with the operational assessment, which assessed how the City could supply its ultimate water demands during a 100-year drought event. Conservation techniques were identified, and a specified program was recommended. For both of these studies, she reviewed water court decrees and prior transfers to evaluate how facilities could be planned within the strict interpretation of these decrees.

**Project Manager, Water Supply Project, Santa Fe, New Mexico.** Ms. Morea is the project manager for the city of Santa Fe to develop its Water Supply Plan, which will evaluate water supply alternatives to address immediate and long-term gaps in water supplies. Under this plan, previous technical investigations into local and imported surface and groundwater supply sources will be synthesized into water supply alternatives. Alternatives are being evaluated using criteria encompassing all facets of technical, non-technical, and institutional considerations, building on the highly effective public participation program used in the Treated Effluent Management Plan (TEMP). The plan will be phased in as water demands grow and infrastructure needed to implement the plan is constructed.



## Kirk Westphal, PE

### Quality Assurance & Control – Modeling

*Kirk has 25 years of experience as an engineer and water supply planner. He has directed projects across the United States and abroad involving water supply planning, management, and modeling; river basin planning; reservoir system management; water quality; risk-based drought management; and integrated resource planning.*

*Kirk has experience using the following decision-support modeling packages: STELLA, GoldSim, Premium Solver Platform, OASIS, RiverWare, Criterion Decision Plus (CDP), EVAMIX. As QA/QC - Modeling lead, Kirk will be responsible for reviewing the Sugar Land decision support model.*

#### Years of Experience

25 years

#### Education

MS, Civil & Environmental Engineering, Tufts University

BS, Aerospace Engineering, Boston University

#### Registration

- Professional Engineer:
  - » Massachusetts

#### Areas of Expertise

- Water Supply Planning
- Risk-Based Drought Management
- STELLA Decision-Support Modeling

**Technical Lead, Integrated Water Supply Plan, Tarrant Regional Water District (TX).** Mr. Westphal guided the process of evaluating over ten major new water supply alternatives for the Fort Worth area. Each source was simulated in an integrated planning model that blended current system operations with new sources based on the goals of providing maximum reliability at minimum cost. Both construction costs and large-scale energy costs were considered, as were the risks associated with each alternative (permitting, public acceptance, and environmental impacts). Mr. Westphal helped develop a framework for selecting preferred projects and formulating long-term implementation strategies that satisfied the goals of minimizing risk and cost.

**Technical Lead, Integrated Water Resources Plan, Franklin (TN).** Mr. Westphal provided technical direction on the integration of Franklin's plans for water supply, wastewater, stormwater, and reclaimed water utilities. The process included the development of an integrated system model that evaluated the performance of alternative facilities, management policies, and operating practices with respect to reliability, cost, river ecology, resource utilization, etc. Mr. Westphal also directed the development of a detailed water quality model to assess the impacts of future withdrawals, wastewater discharges, and dam removal on the Harpeth River. Mr. Westphal presented many times to stakeholders, technical working groups, and to the City's Board of Mayor and Aldermen to help them interpret the findings of the study and decide on a recommended plan, which is currently being implemented.

**Model Reviewer, Integrated Resources Plan, St. Johns County (FL).** Mr. Westphal served as the technical reviewer for the model utilized for the Integrated Water Resources Plan (IWRP) for St. Johns County, FL. CDM Smith provided St. Johns with an IWRP that focused on improving water supply reliability while also addressing stormwater, wastewater, and environmental issues.

**Technical Lead, Raw Water System Optimization Study, San Diego (CA).** Mr. Westphal developed a system optimization model of the San Diego raw water supply system, consisting of seven interconnected reservoirs and aqueducts to import water from outside agencies. Used in conjunction with a dynamic simulation model, the optimization model showed that normal operating rules could be adjusted during periods of severe water stress so that both local and regional deficits could be minimized. The model was equipped with a visual interface and will be delivered to the city for use in future planning.

**Technical Lead, Integrated Water Resources Plan, JEA – Jacksonville (FL).** Mr. Westphal directed the development of an integrated water resources planning model for use by JEA staff. The model simulates alternative water supply, reuse, and conservation alternatives for short term planning (annual operating plans) and long term planning (capital improvement planning). Mr. Westphal developed an economic component of the model that computes total life-cycle cost of any alternative suite, as well as the levelized cost, which measures the effectiveness of the present worth cost by distributing it over the total number of gallons of water produced in the planning period.

**Task Leader, Raw Water Integration Study, Tarrant Regional Water District & the City of Dallas (TX).** Mr. Westphal directed a team of engineers on the integration of water supplies for the Tarrant Regional Water District and Dallas Water Utilities. The proposed integration involved the linkage of a new 150-mgd withdrawal, the construction of a new 120-mile pipeline, and the interconnection of the two supply systems, which have historically been separate. Mr. Westphal has directed technical work for a business case development, operations modeling to maximize the collective yield, comparative analysis on pipeline configurations and routes, energy cost analysis and optimization, and the formulation of comprehensive operating rules over a full range of hydrologic conditions. Based on the work to date, the Integrated Pipeline was approved and is currently under construction.

**Technical Lead, Water Supply Facilities Integrated Plan, Volusia County (FL).** Mr. Westphal was the technical lead for the development of an integrated systems model for the Water Authority of Volusia (WAV). The model was developed with STELLA software, and evaluates the cost, reliability, efficiency, and impacts of a broad range of regional water supply alternatives. Alternatives include new groundwater wells, new surface water withdrawals, seawater desalination, interlocal interconnects, conservation, and reclaimed water uses. Mr. Westphal facilitated stakeholder workshops using the model results to help develop a consensus plan with 14 communities to provide reliable supply through 2025.

**Technical Lead, Williamson County Raw Water Pumping and Reservoir Operations, Brazos River Authority (TX).** Mr. Westphal developed a real-time pump scheduling model to be used in conjunction with 30-day streamflow forecasts to help reduce energy usage and costs for pumping water between source and terminal reservoirs. He also directed the development of a long-term probabilistic planning tool used to establish condition-specific operating rules for the expanding pump station. The models consider hourly fluctuations in energy market prices, and also include detailed representation of pump efficiency curves. Mr. Westphal trained Brazos River Authority staff in the use of the models so that they can use them in-house on a regular basis.

**Task Manager, Lake Okeechobee Fast Track Study (LOFT), South Florida Water Management District (FL).** As part of the Comprehensive Everglades Restoration Program (CERP), Mr. Westphal directed the development of an operations model of a series of stormwater treatment reservoirs (constructed wetlands) using STELLA software. The reservoirs have been conceptually designed to help remove phosphorus from water flowing to Lake Okeechobee via the state's canal system. The model integrated information from groundwater, runoff, and treatment models and was used to guide the selection of capital projects and help outline future operating rules.

**Task Leader, Water Availability and Operations Analysis, Southeast Oklahoma Raw Water Supply Plan, Oklahoma City Water Utilities Trust (OK).** Mr. Westphal directed and developed simulation and optimization tools to evaluate water availability from four potential new withdrawal points in Southeast Oklahoma for conveyance to Oklahoma City. Mr. Westphal's roles included managing a team of engineers, comparing the alternative withdrawal points for yield, cost, and flexibility to address environmental impacts, and formulating recommendations and operating rules for a conjunctive system in which a reservoir and free-flowing river would be used together for the proposed supply. Key to the work was an assessment of how frequently the flows and water levels in the reservoir and adjacent river would be negatively impacted, and developing a balanced operating plan to help avoid adverse impacts as often as possible. His work is now being used to size the pumps and pipelines based on economically optimized seasonal pumping patterns.



## Amber Batson, PE

### Principal-in-Charge

*Amber has nearly 15 years of experience, working both in the consulting field and public sector focused on delivering innovative water, wastewater, water resource, and solid waste projects for public sector agencies throughout Texas and Florida.*

*She is a licensed Professional Engineer in both Florida and Texas and has been responsible for a wide array of environmental projects—from traditional water and wastewater treatment plant design and construction; to planning and environmental permitting; to extensive public outreach efforts for source water protection and landfill siting and permitting.*

*She has served as a trusted asset to her clients on many complex and politically charged projects. She also served in the public sector as the senior operations engineer for the regional Biosolids Processing Facility in West Palm Beach, FL.*

**Principal-in-Charge, Various Projects, Houston (TX).** Ms. Batson is currently serving as the Principal-in-Charge for an array of water and wastewater projects throughout the Gulf Coast region, including projects for San Jacinto River Authority, the City of League City, Gulf Coast Authority, the City of Deer Park, and the City of Beaumont. In this role, she oversees execution of all project work, ensures adequate staffing to meet client and project needs, and is responsive to clients whenever issues arise that necessitate additional coordination beyond the project management team.

**Project Manager, Deer Park Wastewater Treatment Facility Improvements Project; Deer Park (TX).** Ms. Batson is currently serving as the project manager for the design, bidding and construction of various improvements to the facility. This includes a new influent pump station, preliminary treatment equipment replacement, aeration efficiency improvements, hydraulic improvements, new RAS pump stations, new secondary clarifier, a new operations building, and the installation of a new SCADA system for the facility.

**Project Manager, Surface Water Transmission Line Segment W2B Emergency Repairs – Design and Construction Phase Services, Conroe (TX).** Ms. Batson managed the design and construction phase services for emergency repair to a 36-inch surface water transmission main for the San Jacinto River Authority. This project included an extremely tight deadline for design and permitting of the repair efforts to meet a very narrow construction window. The team met all schedule expectations, delivering the water line in service one month earlier than originally anticipated.

**Project Engineer, League City Water & Wastewater Modeling Support On-Call, City of League City (TX).** Ms. Batson serves in an on-call capacity for modeling support services to the City's water and wastewater models. She assists with evaluating developer requests and determining capital improvement needs to meet the City's long-term goals.

**Project Engineer, Brazosport Water Authority – Northern Regional Pipeline & Pump Station, Brazosport Water Authority (TX).** Ms. Batson served as a Project Engineer for the Northern Regional Pipeline and Pump Station, which facilitates the delivery of up to 5-mgd of treated surface water from Angleton, TX to a delivery point in Rosenberg, TX.

#### Years of Experience

15 years

#### Education

ME, Environmental Engineering, University of Florida

BS, Environmental Engineering, University of Florida (*Summa Cum Laude*)

#### Registration

- Professional Engineer:
  - » Texas
  - » Florida

#### Areas of Expertise

- Project Management
- Water/Wastewater Planning & Design
- Master Planning
- Biosolids
- Permitting

**Project Manager, Lake Worth Park of Commerce Infrastructure Needs Assessment and Preliminary Engineering Study, Lake Worth (FL).**

Ms. Batson completed an infrastructure needs assessment for the re-development of the Park of Commerce, an area anticipated to be a hub for light industry in Palm Beach County. For this study, Ms. Batson worked with a team of engineers, planners, and scientists to evaluate the existing water, wastewater, stormwater, roadway, electric, and telecommunications network. The team then determined the future land use for the area and infrastructure needs to support that land use. Hydraulic modeling was performed for the water and wastewater systems. Finally, CDM Smith identified infrastructure improvements, including phasing and budgetary costs as well as potential funding mechanisms for the redevelopment.

**Project Manager, Assorted Water Resources Projects, West Palm Beach (FL).** Ms. Batson was responsible for providing assistance to the City of West Palm Beach for a variety of projects requested under the Water Resources Planning Contract. Projects included hydrologic/hydraulic modeling efforts; construction drawings review; emergency improvements to M-Canal, Clear Lake, and Lake Mangonia related to hurricanes; a source water protection project with outreach to the communities surrounding Clear Lake and Lake Mangonia; an evaluation for expansion of the Control 2 pump station; a Phase I Environmental Assessment for the Haverhill West Site; the Riverwalk Development Lake Augmentation project; and other miscellaneous water resources related technical guidance.

**Project Engineer, Water Use Permit Modification, Boynton Beach (FL).** Ms. Batson served as project engineer to assist the City of Boynton Beach in obtaining a 20-year water use permit from the South Florida Water Management District. The permitting process required modeling of the surficial aquifer, identification of potential Floridan aquifer well sites, modeling of the Floridan aquifer, development and submittal of the permit application and associated documents, and coordination with regulatory agencies.

**Project Manager, Water Catchment Area Mitigation Bank Assistance, West Palm Beach (FL).** Ms. Batson provided assistance to the City of West Palm Beach in the development of a wetlands mitigation bank. The project included surveying, wetland delineation, pricing study, and a presentation to the City of West Palm Beach Commissioners.

**Project Manager, Riverwalk Development Lake Augmentation Project, West Palm Beach (FL).** Ms. Batson provided engineering services related to design, permitting, cost estimating, bidding, and construction oversight of a reclaimed water main extension to the Riverwalk Development for augmentation of the lakes.

**Project Manager and Engineer of Record, Glades Road Water Treatment Plant (WTP) Residuals System and Ancillary Improvements Project – Design and Bidding Services, Boca Raton (FL).** Ms. Batson served as the project manager and civil/process mechanical engineer of record for the design of improvements to the lime softening residuals equipment at the Glades Road WTP. This project included replacement of the sludge thickening and vacuum filter equipment as well as other ancillary improvements at the WTP.

**Project Engineer, Water Treatment Plant No. 8 Expansion, Palm Beach County (FL).** Ms. Batson provided engineering services related to design, permitting, cost estimating, and bidding for the expansion of Palm Beach County Water Treatment Plant No. 8. The expansion included a new 10 mgd treatment train comprised of a lime softening reactor clarifier, gravity filters, an anionic exchange system, chloramination, storage, and high service pump distribution.



## Bill Davis

### Task Leader – Water Demand Forecasting

*Bill specializes in conducting water demand analyses, developing water use forecasts, evaluating water conservation programs, and incorporating these analytical components into Integrated Resource Planning. His focus includes the analysis of local water use patterns and characteristics, water demand modeling and forecasting, and evaluating the effectiveness of conservation programs.*

*He was a member of the Development Team responsible for the IWR-MAIN Water Demand Management Suite, and conducted more than 30 training workshops on application of the IWR-MAIN software. His more recent work includes development of customized water demand models, and incorporating uncertainty with respect to potential climate change into water demand projections. Bill also served four years as a chair of the Water Resources Planning and Management committee of the water resources sustainability division of the American Water Works Association, and is currently a Trustee and Chair of the AWWA Water Resources Sustainability Division.*

*As task leader for demand forecasting, Bill will guide the team in conducting the water demand analyses, developing water use forecasts.*

#### **Technical Director, Austin Integrated Water Resources Plan, Austin Water Utilities (TX).**

Mr. Davis served as the Technical Reviewer for the Austin Integrated Water Resources Plan, which will provide the City with the tools to plan for the next 100 years of their water future. The plan was developed working in close consultation with Austin Water and will include selection of demand and supply side options that will be aggregated into a series of portfolios that will be evaluated using multi-criteria decision analysis tools such as Criterion Decision Plus to compare the portfolios. The plan included several innovative aspects, such as explicit consideration of climate change on both demand and supply side options and a detailed evaluation of distributed supplies such as graywater, blackwater and wastewater skimming.

#### **Project Manager, Update of Long-term Water Demand Forecast, City of San Diego (CA).**

For the City of San Diego, Mr. Davis led the effort to revise the water demand forecast to the year 2030 for 135 hydraulic pressure zones within the city's service area. The forecast included water savings estimated from planned conservation programs allocated to each pressure zone. The forecast was used to assess the impact of two potential climate change scenarios on future water demand. Mr. Davis has previously provided updates to the city's water demand forecast in 1998, 2002, 2005, 2008, 2010 and 2015.

#### **Project Manager, Update of Long-term Water Demand Forecast, City of San Diego**

**(CA).** Mr. Davis used updated demographic projections and more recent demographic and water use data to recalibrate existing water demand models and revise the water demand projections for the 23 major pressure zones of the City of San Diego, California. The water demand forecast utilized water demand models previously estimated for the San Diego County Water Authority. Updated inputs and assumptions were used to

#### **Years of Experience**

31 years

#### **Education**

MS, Agribusiness  
Economics, Southern  
Illinois University

MSW, Social Work,  
University of Kansas

BSW, Social Work &  
Psychology, University of  
Kansas

#### **Registration**

N/A

#### **Areas of Expertise**

- Modeling Water Demand
- Assessing Impacts of Water Conservation
- Integrated Water Resource Planning

revise the water conservation savings estimates resulting from continued implementation of the best management practices by the city. The conservation savings were estimated with the IWR-MAIN end-use model. City staff members were trained in the use of the IWR-MAIN databases established for the water demand and water conservation components of the water demand forecast for the city.

**Principal Investigator and Expert Witness, Oak Creek Water and Sewer Utility, Supplemental Demand Study (WI).**

Mr. Davis led the effort to develop a water demand forecast to the year 2035 for projected service area of the Oak Creek WTP, encompassing the City of Oak Creek, the City of Franklin, the Village of Caledonia, and the Waukesha Water Utility, all in accordance with a methodology developed in consultation with the municipalities and satisfactory to the Public Service Commission (PSC). The water demand forecast was prepared for three scenarios representing high, medium, and low future demand conditions. The forecasts were reviewed by Oak Creek staff, Franklin staff and PSC staff. Mr. Davis provided written and direct testimony on the appropriateness of the demand forecast to the PSC.

**Task Manager, Regional Water Plans Update for the Georgia Department of Environmental Protection (GA).**

CDM Smith was responsible for developing regional water plans for three planning regions of the State of Georgia as components of the 2010 Statewide Comprehensive Water Plan, and the updating of the regional water plans for six planning regions for the 2017 Statewide Comprehensive Water Plan. Mr. Davis was instrumental in the design of the water demand and wastewater flow forecast methodology used by all contractors in all planning regions of the state for the 2010 Plan and was separately contracted by the Georgia EPD to develop a statewide assessment and forecast of water needs for power generation throughout the state. Mr. Davis was responsible for the recent update of statewide power generation water demands and municipal demands for six of the planning regions.

**Task Manager, Water Conservation Potential Study, Los Angeles Department of Water and Power (CA).** Mr. Davis was responsible for the design and development of the LADWP Water End Use Tool for estimating baseline and future water demand by sectors and end uses of water. The End Use Tool was populated with user-level data obtained through surveys of customers by sector conducted under this study. The Water End Use Tool was used to evaluate potential efficiency measures in terms of technically feasibility, economic feasibility and maximum achievable potential.

**Task Manager, Detailed Water Resources Study in Al-Harrat, Saudi Arabia.** Mr. Davis was responsible for the developing the water use inventory and water demand components water resource study of the Al-Harrat study area. The study area included eight of the western regions of the Kingdom of Saudi Arabia.

**Project Manager, Water Demand Forecast Model for Spokane County (WA).** Mr. Davis provided sub-contracting services to develop a water demand forecast model in Microsoft Excel for Spokane County, Washington. The water demand forecast incorporated water use data from the 144 water providers within the county to estimate water demand among public supply systems according to location within the county, water source, housing density and other unique characteristics of service areas. The water demand model also included forecasts for the self-supplied residential, self-supplied industrial and agricultural sectors of the county. The forecast model was developed within a six-month project schedule and a limited budget. Subsequently, county staff engaged in the development of the model were able to implement recommended refinements to the model based upon additional data collection and analysis.

**Task Manager, Statewide Water Demand Forecast, Oklahoma. For the Oklahoma Water Resources Board and the U.S. Army Corps of Engineers (USACE) – Tulsa District (OK).** Mr. Davis leads the CDM Smith team that provides the municipal, industrial and agricultural water demand forecasts by county, basin, and water provider for the Statewide Water Plan. In addition, he led the analysis of potential statewide savings from water conservation among public supply and agricultural water users.



## Sunil Kommineni, PhD, PE, BCEE

### Task Leader – Existing System & Supply Options

*Sunil has more than 20 years of experience in water distribution system modeling, master planning, water quality and regulatory assessments. He has led the development of dynamic water and wastewater models and master plans for numerous Texas cities, including Houston, Dallas, Phoenix, The Woodlands, Baytown, Pearland and Richmond.*

*Having served as a key technical resource on several City of Sugar Land surface water treatment plant and groundwater plant projects for the City of Sugar Land, Sunil will be able to apply his understanding of Sugar Land's infrastructure to deliver innovative solutions as task leader for existing system and supply options.*

#### Years of Experience

20 years

#### Education

PhD, Chemical & Environmental Engineering, University of Arizona

MS, Chemical & Environmental Engineering, University of Arizona

BS, Civil & Environmental Engineering, Osmania University (India)

#### Registration

- Professional Engineer:
  - » Texas
- Board Certified Environmental Engineer
- Texas Certified Water Operator

#### Areas of Expertise

- Water Supply-Demand Scenarios
- Water Quality & Regulations
- Modeling & Master Planning
- Condition Assessment

**Project Manager, Water, Wastewater and Reclaimed Water Master Planning and Rate Analysis, City of Richmond (TX)** – Served as Project Manager to prepare an integrated water, wastewater and reclaimed water utility master and financial plan. As part of this project, KIT is developing the capital improvement program (CIP) for 1 to 5 and 6 to 10 year planning periods for water, wastewater and reclaimed water systems. KIT is also conducting a comprehensive rate and impact fee analysis and updating the Groundwater Reduction Plan (GRP).

**Project Manager, System-wide Water Quality Management Plan, City of Houston (TX).** Served as Project Manager to address water quality issues and taste and odor complaints from blending of groundwater and surface water in the distribution system. Applied dynamic modeling and developed recommendations to manage water age/blending.

**Project Manager, Water Modeling and Master Planning, SJRA, The Woodlands (TX).** Served as Project Manager to develop a dynamic water model for The Woodlands using Bentley's WaterGEMS software. Used the model and stakeholder discussions to develop a water infrastructure master plan for the ultimate or build-out conditions.

**Project Manager, Wastewater Collection System Model Update, SJRA, The Woodlands (TX).** Served as Project Manager to update The Woodlands Collection System Model using the Innovyze's InfoWorks ICM Model. Used the updated model to assess the resiliency of the collection system and identified the near-term and long-term wastewater infrastructure improvement needs.

**Project Manager, Wastewater and Collection System Master Plans, Cities of Phoenix, Peoria (AZ).** Served as Project Manager to deliver integrated water and wastewater master plans for several cities in Arizona that included Phoenix, Peoria and Tempe. Master planning included collection systems model development, model calibration, evaluation of existing system hydraulic, planning for future growth and expansion, near/long-term CIP recommendations and WWTP capacity enhancements.

**Project Manager, Water System Master Plan Update, City of Phoenix (AZ).** As Project Manager led the upgrade of hydraulic model and preparation of 50-year master plan for plant/distribution system improvements. Developed CIPs for 5, 15 and 50-year planning periods to meet future demands.

## Sugar Land Project Experience

- **Project Manager, Blending and Corrosion Control Evaluation, City of Sugar Land, Sugar Land (TX).** As Project Manager lead activities related to blending of surface water and groundwater. Conducted corrosion control evaluation using pipes harvested from the distribution system. Developed recommendations on corrosion control strategies including carbon passivation and phosphate inhibition.
- **Process Lead, Surface Water Treatment Plant Study and Design, City of Sugar Land (TX).** Process Lead for the Process Selection, Pilot Testing, and Regulatory Coordination of the 9 MGD surface water treatment plant which includes low-pressure membranes, granular activated carbon contactors, iron-manganese removal using oxidation and clarification with plates/tubes.
- **Technical Advisor, Groundwater Plant Improvements for Receiving Surface Water, City of Sugar Land (TX).** Technical Advisor for the project that included improvements at the Lake View and First Colony Pump Stations to receive surface water.
- **Technical Advisor, Riverstone Water Plant Improvements for Receiving Surface Water, City of Sugar Land (TX).** Technical Advisor for the project that included improvements at the Riverstone Water Plant to receive surface water. Improvements include design of a new ground storage tank and blending of surface water and groundwater.
- **Technical Lead, Surface Water Treatment Plant Re-rating Study, City of Sugar Land (TX).** Technical Lead for re-rating of the Sugar Land Surface Water Treatment Plant. Based on the study, the plant was re-rated from 9 MGD to 10.8 MGD.



## Lauren Starosta, PE

### Task Leader – Decision Support Modeling

*Lauren is a water resources engineer specializing in systems modeling, water resources planning/studies, and hydrologic/hydraulic modeling. She has worked throughout Texas and the Southwest Region to develop models and tools to assist with problem solving and visualization, and has worked on many decision support tools for water resources ranging from water supply planning to wastewater collection system planning to flood mitigation.*

*Lauren's technical specialties include systems modeling (including water and energy), water distribution, water-demand analysis, and cost analysis. Her computer and modeling skills include STELLA, InfoWorks CS, InfoSWMM, PowerSim, InfoWater/H2OMap, Bentley SewerGEMS and WaterGEMS, HEC-RAS, HouStorm, ArcGIS, ArcHydro, and EPA SSOAP Toolbox.*

*As the Task Lead for developing the decision support model, Lauren will draw upon her background to develop input response functions that describe the City's water supply system.*

#### Years of Experience

11 years

#### Education

MS, Environmental & Water Resources Engineering,  
University of Texas – Austin

BS, Civil Engineering,  
University of Maryland

#### Registration

- Professional Engineer:
  - » Texas
  - » New Mexico

#### Areas of Expertise

- Systems Modeling
- Water Resources Planning & Studies,
- Hydrologic & Hydraulic Modeling

**Modeling Engineer, Integrated Water Supply Plan: Phase 2, Tarrant Regional Water District, Tarrant Regional Water District (TX).** Ms. Starosta was the modeling engineer for this second phase of the Integrated Water Supply Plan for the Tarrant Regional Water District (TRWD). The first task of this project was to implement significant programming changes to the model to improve the ways in which future water supplies are routed through the system to meet water demands. With the programming improvements, Ms. Starosta then used and adjusted the model to complete specific tasks requested by TRWD. These tasks included evaluating the impact of new water demand projections, analyzing the impact of pumping and storage alternatives to reduce peak pumping costs, and assessing water reuse alternatives. Additional tasks included development of a levelized cost analysis to compare water supply portfolios and training for TRWD on use of the model. Ms. Starosta continues to utilize the model to assist TRWD with other tasks including operations optimization of their planned Integrated Pipeline.

**Modeling Engineer, Aquifer Storage & Recovery for Water Supply Management Phase 1 Business Case Evaluation, Tarrant Regional Water District (TX).** The Tarrant Regional Water District (TRWD), which supplies water to municipalities in and around Fort Worth, Texas, is exploring aquifer storage and recovery (ASR) in terms of economics and water supply planning. Ms. Starosta evaluated ASR scenarios using the TRWD's Integrated Planning Model (developed in STELLA), which Ms. Starosta has helped to develop and update over time for previous projects with TRWD. She modeled ASR scenarios to evaluate the potential for operational cost savings and drought resiliency. Due to limitations on the source water that could be used for ASR that has since changed in the state of Texas, the results showed minimal benefit for providing operational cost savings and drought resiliency. Ms. Starosta, therefore, helped to assess ASR in terms of risk and cost and found it to be a low-risk and low-cost project compared to other water supply projects TRWD is considering, which justified further investigation of other

types of source water for ASR including raw and reuse water. The costing methodology used is unique to water supply planning, which accounts for the amount of water actually used in a given year rather than the total supply provided and is referred to as leveled cost.

**Project Manager and Modeler, Santa Fe Climate Change Basin Study, U.S. Bureau of Reclamation & City of Santa Fe (NM).** Ms. Starosta managed and provided modeling and analysis guidance for this project. This project was completed as part of the Basin Studies program with the U.S. Bureau of Reclamation and through partnership between the City of Santa Fe and Santa Fe County. The purpose of the project was to assess the impact of projected changes in climate on the City and County resources and develop a plan to adapt to those changes. CDM Smith's role in the project was specifically related to water supply. This included updating the City's Water Management and Planning Simulation (WaterMAPS) model to include the County as a partner and entity and to enhance the model to include functionality to assess projected climate change impacts. As part of this project, Ms. Starosta studied the details and logic of the different Santa Fe water supplies and applied that knowledge to direct the updates and improvements that needed to be made to the model. She also assisted with developing an algorithm to incorporate scaled demand projections according to climate change conditions. Working closely with the project partners, she assisted the project team with evaluating and ranking the portfolios to provide the City and County guidance on making long-range water supply decisions. This work culminated in an overall Basin Study report for the U.S. Bureau of Reclamation.

**Project Engineer, Dallas Long-Range Water Supply Plan: Water Transmission System Modeling, City of Dallas (TX).** One of Ms. Starosta's roles on the Dallas Long-Range Water Supply Plan was to assess the impact of updated water demands on proposed water transmission system improvements for the City of Dallas. To accomplish this, she utilized the City's water distribution system model developed in H2O Map (similar to InfoWater). Using the model and previously developed reports, Ms. Starosta learned how the system operates, determined how different alternatives for transmission were developed and set up in the model, implemented revised water demands, and evaluated the impacts on the proposed projects. Ms. Starosta also presented her findings to the City through a presentation and technical memorandum.

**Modeling Engineer, Thomas Mackey System Expansion Transmission System Study, Gulf Coast Water Authority (TX).** Ms. Starosta played an integral role in the development of a water transmission system study model for the GCWA to identify necessary improvements for expected increases in water demands. Her responsibilities involved developing a water transmission model in H2OMap model from record drawings, model calibration from SCADA data, developing alternative solutions for piping upgrades, and assisting with the development of the costs, report, and map figures. She also prepared a presentation of the model and the alternative solutions and helped to present the information to the client.

**Modeling Engineer, Urban Systems Model, Singapore.** This was a research and development project that Ms. Starosta is working on through CDM Smith's Neysadurai Centre for Integrated Water Resources and Urban Planning located in Singapore. The purpose of the project was to develop an integrated systems simulation model that can be used to evaluate different urban plans. All sectors of an urban system are to be connected and assessed in this model including water, energy, transportation, natural systems, built environment, and solid waste. Additional layers to the model include life cycle costs, greenhouse gases, and human behavior. Ms. Starosta assisted with the development of a prototype model that was programmed using STELLA. Phase 1 of the model, which is programmed in Powersim, is currently being finalized. Ms. Starosta was responsible for development of the energy sector of the Phase 1 model.



## Chris Kurtz, PE, PMP

### Task Leader – Alternatives Evaluation

*Chris specializes in integrated water resources planning and hydrologic/systems modeling, and evaluation of supply options and alternatives. He is proficient in a number of database and modeling software platforms including STELLA, PowerSim, InfoWater, WaterGEMS, InfoWorks CS, ArcGIS, MS Access, and MS Excel. As the task leader for alternatives evaluation, Chris will use the information from the conceptualization of supply options and results from STELLA modeling in order to evaluate alternatives.*

#### Years of Experience

10 years

#### Education

MEng, Civil Engineering,  
Colorado State University

BS, Civil Engineering, Ohio  
State University

#### Registration

- Professional Engineer:  
» Colorado
- Project Management  
Professional

#### Areas of Expertise

- State & Regional Water  
Planning
- Water Resources/  
Hydrologic/Systems  
Modeling
- Decisions Support  
Systems and Tools

**Alternatives Evaluation Task Lead, Austin Integrated Water Resources Plan, Austin Water Utilities (TX).** Mr. Kurtz is serving as the task lead for the alternative evaluation portion of the Austin IWRP, led by Dr. Petersen. With this plan, Austin Water will have the tools to plan for the next 100 years of their water future. The plan was developed working in close consultation with Austin Water and includes selection of demand and supply side options that will be aggregated into a series of portfolios that will be evaluated using Criterion Decision Plus to compare the portfolios. The plan included several innovative aspects, such as explicit consideration of climate change on both demand and supply side options and a detailed evaluation of distributed supplies such as graywater, blackwater and wastewater skimming.

**Technical Lead/Project Engineer, Evaluation and Documentation of the State of Texas Water Availability Model and Water Rights Analysis Package, USACE Ft. Worth District (TX).** Mr. Kurtz serves as technical lead and project engineer for an ongoing evaluation of the State of Texas Water Availability Model (WAM) and Water Rights Analysis Application Package (WRAP). He leads a team of technical staff in the evaluation of WAM's ability to simulate water rights and the assessment of accuracy of hydrological outputs from WAM for Regulatory permitting needs of the USACE Ft. Worth District. This evaluation includes the assessment of applicability to scenario management, optimization of operations to minimize and avoid hydrological modifications, system demands, individual and/or aggregated system operations, reservoir operations (storage and releases), river reach flow modifications, and applicability to support resource assessments required by NEPA.

**Task Manager/Lead Modeler, San Gabriel Valley Municipal Upper District Integrated Resource Plan, Azusa, (CA).** To aid in the analysis of water supply portfolios developed as part of the District's Integrated Resource Plan, Mr. Kurtz developed a dynamic system model using the Powersim software. The model simulates the operation of the District's surface water, recycled water and groundwater supply systems including all imported water sources. The model is being used to compare water supply portfolios and act as a decision support tool for District staff to prioritize, and potentially phase, projects considering both a 30-year planning horizon and also a short-term probabilistic scenario. The impact of climate change and imported supply availability on the supply system operation is also being explored.

**Technical Lead/Project Engineer, Statewide Water Supply Initiative (CO).** Mr. Kurtz serves as task order manager and technical lead for the Statewide Water Supply Initiative (SWSI). This ongoing project involves conducting a statewide water supply investigation for use in identifying solutions to persistent drought and growth problems across Colorado. Mr. Kurtz has led efforts related to identification of water supply in eight river basins across the state. He has also been responsible for the enhancement of a database tool used to assess environmental and recreational needs across the state. Currently, Mr. Kurtz is leading efforts to develop a statewide costing tool for water supply projects, evaluate alternative financing opportunities for water entities, as well as assess the environmental and recreational gap.

**Technical Lead/Project Engineer, Arkansas State Water Plan (AR).** Mr. Kurtz was responsible for leading a multi-disciplinary team of engineers, scientists, and economists in support of the Arkansas State Water Plan. Key accomplishments include development and implementation of a defensible methodology for assessing the projected gap between water availability and projected water demands. This assessment included both surface water and groundwater availability across the entire state. In addition, Mr. Kurtz served as the task manager for executing a statewide survey of over 600 water providers and 100 wastewater service providers in order to identify a projected infrastructure funding gap.

**Technical Lead/Task Manager, Arkansas Basin Implementation Plan, Pueblo (CO).** As technical lead and task manager for the Arkansas Basin Implementation Plan, Mr. Kurtz worked with the Arkansas Basin Roundtable to understand their consumptive and non-consumptive water needs. He worked with the Basin Roundtable to identify potential projects and processes that could be used to meet these future needs. To assist in this process, Mr. Kurtz developed a regional water supply planning model using CDM Smith's Simplified Water Allocation Model (SWAM). A model of the consumptive and non-consumptive needs in the basin was developed to assess supplies and potential shortages in the basin.

**Technical Lead/Project Engineer, Regional Assessments of Climate Change, U.S. Army Corps of Engineers Institute for Water Resources, Nationwide.** The U.S. Army Corps of Engineers (USACE) Institute for Water Resources (IWR) tasked CDM Smith with assessing and documenting the observed and future impacts of climate change in 21 different 2-digit hydrologic unit codes (HUC) across the continental United States, Alaska, Hawaii, and Puerto Rico. Mr. Kurtz served as a technical lead, primary author, and co-author for development of 21 reports summarizing observed and projected climate and hydrological patterns cited in reputable peer-reviewed literature and authoritative national and regional reports. In addition, each report characterizes climate threats to USACE business lines, including: navigation, flood risk management, water supply, ecosystem restoration, hydropower, recreation, emergency management, regulatory, and military programs.

**Engineering Manager, Texas Water Development Board, Rio Grande Regional Water Planning Group (Region M) 2016 Regional Water Plan; Texas Water Development Board (TX).** Prior to joining CDM Smith, Mr. Kurtz was responsible for the technical management of an eight-county Region M water plan as part of the Texas State Water Planning process. His tasks included the development and review of population and water demand projections for municipal water users as well as non-municipal water users including irrigation, mining, manufacturing, power generation, and livestock sectors. In addition, Mr. Kurtz was the water supply task leader and led the effort to evaluate surface water availability from the Rio Grande utilizing the Texas Commission on Environmental Quality's Water Availability Model. Mr. Kurtz also served as key facilitator during meetings and workshops attended by key decision makers representing a diverse group of stakeholders (e.g. municipal, agricultural, environment, etc.).



## Jessica Fritsche

### Demand Forecasting

*Jessica is a water resources planner with 10 years of experience in urban, regional, statewide, and national planning projects. Her key roles are statistical analysis, water demand and conservation modeling, model design and execution, data collection and processing, GIS analysis, database management, preparation of technical documents and reports, and stakeholder outreach, training, and support.*

#### Years of Experience

10 years

#### Education

MS, Geography & Environmental Resource Management, Southern Illinois University

BS, Philosophy, Southern Illinois University

#### Registration

N/A

#### Areas of Expertise

- Integrated Resource Planning
- Statistical Analysis
- Water Demand & Conservation Modeling

**Water Conservation and Demand Task Lead, Austin Water Integrated Water Resource Plan, City of Austin (TX).** Ms. Fritsche is the lead on two critical tasks of the Austin Water integrated water resources plan: water demand forecast and conservation potential assessment. For the water demand forecast, her lead role is to develop statistical relationships between water use and the various drivers of demand, such as weather, price, passive conservation achieved through municipal and state plumbing codes, active conservation, and water use restriction periods. These models are applied to a sophisticated model of disaggregated water demand forecasts for 200 plus GIS polygons representing the geographic extent of the Austin Water service area.

**Planner, City of San Diego Water Department Update of Long-Range Water Demand Model, City of San Diego (CA).** For the City of San Diego, Ms. Fritsche worked to collect and process significant data variables in support of their long-term water demand forecast model. Ms. Fritsche led the efforts to process data contained within a sizable Oracle database representing a 10-year time series of customer billing records. The data were geo-coded and summarized by pressure zone, the spatial unit of the San Diego Water Department water demand forecast model, and combined with demographic data to estimate per unit water use patterns with geographic specificity across the municipal service area. The rates were analyzed statistically over-time together with the impact drivers of water use, such as price of water, temperature, precipitation, and median household income, to derive water demand functions on a sector basis.

**Planner, Metro Vancouver Comprehensive Regional Water System Plan, Metro Vancouver Regional District (CAN).** Using statistical methods, Ms. Fritsche developed sector-based models of member jurisdiction water demand which are inputs into the regional water supply planning process. The demand models include 17 member jurisdictions and required collection and careful analysis of 20-years of historical water use data. The statistical models explain water use as a function of the main drivers of demand in the Vancouver region: weather, household characteristics, increasing densification, changes in plumbing fixture flow rates, effluence, manufacturing intensity, changes in allowable outdoor watering, and impacts from residential metering programs. Using this information, Ms. Fritsche developed demand forecasts aligned with CRWSP scenarios to address uncertainty in the planning process and provide a range of potential future conditions.

**Planner, Orange County Demand and Conservation Model, Municipal Water District of Orange County (FL).** For the MWDOC, Ms. Fritsche developed a set of robust statistical models explaining water demand for three service areas. The models served as the foundation of the water demand forecast for MWDOC as well as a model to estimate historical conservation achievements over time. The variables in the statistical models included departures in average temperature and precipitation, conservation savings estimates, drought restriction binaries, and the unemployment rate (as an indicator of economic activity).



## Kim Chanslor, PE

### Existing System & Supply Options

*Kim has 18 years of experience in water and wastewater planning and design. Her work has focused on large master plans for both water and wastewater throughout Texas. More specifically, she has managed and supported a variety of water supply, transmission, and sewer collection design and rehabilitation projects. Kim has managed both major water supply booster station and wastewater treatment design projects, in addition to numerous unsewered master planning project efforts.*

#### Years of Experience

18 years

#### Education

ME, Civil Engineering,  
Texas A&M University

BS, Civil Engineering, Texas  
A&M University

#### Registration

- Professional Engineer:  
» Texas

#### Areas of Expertise

- Project Management
- Water/Wastewater  
Planning & Design
- Master Planning
- Conveyance

**Lead Project Engineer, City of Dallas Wastewater Master Plan, Dallas, Texas.** The purpose of the project was to create a wastewater model for the City of Dallas, evaluate baseline dry and wet weather problems and provide solutions and a prioritized schedule of projects. Ms. Chanslor's project responsibilities include providing training and management assistance of model team, gathering data needed to build the model, building the wastewater model using Infoworks modeling software, identifying existing system deficiencies, determining effects of future growth within the city, providing solutions to identified system deficiencies, utilizing the model to optimize operations, presenting bi-weekly project update presentations and preparing final report document.

**Project Engineer, City of Houston Wastewater Program – Sims Bayou Wastewater Service Area Master Plan.** The purpose of the project was to review and validate the existing wastewater model for the Sims Bayou service area, evaluate baseline wet weather problems and provide solutions and a prioritized schedule of projects. Ms. Chanslor's project responsibilities include international project team coordination, assisting in wet weather calibration of existing model using Infoworks modeling software, identifying existing system deficiencies, determining effects of future growth within service area, providing solutions to identified system deficiencies and utilizing the model as requested by the city to optimize operation of facilities including wet weather storage facilities.

**Project Manager, Water and Wastewater Master Plan, League City, Texas.** The City of League City needed to develop a plan for resolving infrastructure planning problems for the city to address current and future water and wastewater capacity issues. The complete project consists of an evaluation of the existing water and wastewater system through existing records and the development of an improvements program. The improvements program entails evaluating the hydraulic capacity of the existing wastewater and water distribution system and developing a phased Capital Improvement Program.

**Project Engineer, League City Water Reuse Master Plan, City of League City (TX).** Mr. Reeser served as a project engineer and hydraulic modeler for the city of League City. This project consisted of updating the water master plan and the capital improvement projects. The water distribution system model was updated based per capita usage rates, updated build out drawings and documents, meter data, GIS and aerial photography. The model was used to analyze the current CIP projects and determine if the projects will still be effective and if additional projects will be required.



## Jenny Bywater, PE

### Decision Support Model

*Jenny is a water resources engineer with 10 years of experience modeling hydraulic wastewater and stormwater collection systems, integrated water resource planning, and addressing stormwater regulatory issues. Jenny has expertise with a variety of modeling platforms, including InfoSWMM.*

#### Years of Experience

10 years

#### Education

MPhil, Engineering for Sustainable Development, University of Cambridge (UK)

MEng, Environmental Engineering, Massachusetts Institute of Technology

BS, Civil & Environmental Engineering, University of Washington

#### Registration

- Professional Engineer:
  - » Louisiana
  - » California

#### Areas of Expertise

- Hydraulic Modeling
- Integrated Water Resource Planning
- Alternatives Analysis

**Project Engineer, Integrated Resources Plan, St. Johns County (FL).** Ms. Bywater served as a project engineer for the model utilized for the Integrated Water Resources Plan (IWRP) for St. Johns County, FL., which focused on improving water supply reliability while also addressing stormwater, wastewater, and environmental issues.

**Project Engineer, JEA Integrated Water Resource Planning (FL).** Ms. Bywater helped create a STELLA model of JEA's integrated water, wastewater, and reclaimed water system in an effort to compare the performance, operating costs and other characteristics of future alternative facilities, configurations and management strategies. Suites of potential projects were combined into alternatives and scored against developed performance measures focusing on cost, reliability, sustainability, flexibility, and ease of implementation.

**Project Engineer, Southeast Oklahoma Raw Water Supply Plan (OK).** Ms. Bywater helped developed a dynamic water availability model for four interconnected reservoirs and the Kiamichi River in Southeast Oklahoma. The model was used to establish the firm yield for the combined system under a variety of constraints and operating conditions as well as to study the hydraulics and operations associated with alternatives to convey the water to the Oklahoma City region.

**Project Engineer, South Cypress Creek Stormwater Master Plan, City of Memphis (TN).** Ms. Bywater helped build a surface water hydrologic and hydraulic model to simulate existing conditions, estimate flooding extents for various design storms and simulate alternative solutions to help meet desired level of service goals.

**Project Team Member, Utility Climate Resiliency Study, Metropolitan North Georgia Water Planning District (GA).** CDM Smith was selected by the MNGWPD to assess the potential impacts of climate variability on water resources and infrastructure within the 15-County Atlanta metropolitan area. Ms. Bywater compiled information from the team of engineers into the draft and final reports as well as assisting with the development of a suite of potential adaptive strategies to address the identified vulnerabilities in the areas of water supply, water demand, water quality, watershed impacts and infrastructure.

**Project Engineer, Sanitary Sewer Master Plan, City of Gonzales (LA).** Ms. Bywater was the lead engineer in developing and calibrating a collection system hydraulic model to assist in assessing the performance of and evaluating potential capacity upgrades to the City's sanitary sewer collection system and well as rehabilitation alternatives.

**Project Engineer, Regional Hydraulic Model and Other Consent Order Requirements, Hampton Roads Sanitation District (VA).** Under this contract, a fully dynamic sanitary sewer model was developed for a manifolded force main system that serves approximately 1.6 million customers in a 3,100-square-mile service area. Ms. Bywater's role was to assist with development of flow parameters for input into the models.



## Bill Mullican, PG

### Alternatives Evaluation

*With more than 30 years of experience, Bill has specialized in the field of water planning. He is experienced in the creation, design, development and management of complex, multi-disciplinary projects. His integrated approach includes oversight, development, and implementation of water policy, technical aspects of surface water and groundwater availability, and population and water demand projections for a wide variety of water user sectors.*

*He also has extensive interaction with the technical community, governmental entities (local, state, and federal), stakeholders, and general public, and has provided invited testimony to the U.S. Congress on four occasions, 25 occasions to the Texas Legislature, and authored and coauthored over 135 scientific books, articles, reports, and two Texas State Water Plans.*

*Since his retirement from the TWDB, Bill has continued to expand his water planning experiences with CMD Smith in their state water planning efforts in Georgia, Colorado, and most recently in Arkansas. These efforts have provided a better understanding of the tools necessary to support regional and state water planning. Most recently, he served as Co-Chairman of the Texas Water Conservation Association's Groundwater Panel, Aquifer Storage and Recovery Committee which was successful in developing consensus legislation for consideration and passage by the 84th Texas Legislature.*

**Texas Water Development Board.** From 1997 to 2009, Mr. Mullican worked for the Texas Water Development Board. His responsibilities included developing methodologies for projecting water demands in the six major water use sectors on which water planning in Texas is based. Utilizing these new water demand projections and population projections, Mr. Mullican was responsible for development and adoption of the first Texas State Water Plan (2002) based on the Senate Bill 1 regional water planning process.

**Deputy Executive Administrator for Water Science and Conservation.** In this position, Mr. Mullican served in two critical overarching capacities. First, to provide leadership and direction to the agency's ever expanding scientific and conservation programs as mandated by Senate Bill 2 (2001), House Bill 1763 (2005), Senate Bill 3 (2007), and House Bills 3 and 4 (2007). Second, primary responsibilities include overall direction, management, coordination, and allocation of resources. Programmatic responsibilities included:

- Development of the State Water Plan
- Technical assistance for groundwater conservation districts
- Water Research Program
- Environmental, including Bay and Estuary, and Instream Flow Program
- Conservation Technical Assistance
- Agricultural Water Conservation Program

#### Years of Experience

30 years

#### Education

MS, Geology, Texas Tech University

#### Registration

- Professional Geoscientist  
» Texas
- Certified Ground Water Profession, National Ground Water Association

#### Areas of Expertise

- Developed 2002 and 2007 Texas State Water Plans
- Created, Designed, & Oversaw TWDB Groundwater Availability Modeling Program
- Responsible for TWDB Strategic Direction of Brackish Groundwater & Sea Water Desalination Programs
- Developed Concept & Design for Brackish Resources Aquifer Characterization System (Approved by Texas Legislature in 2009)



## Roopa Metla, PE

### Alternatives Evaluation

*Roopa has more than 10 years of engineering experience wastewater collection system modeling, water distribution system modeling, drainage evaluation and analysis and hydrology and hydraulics study. Ms. Metla's vast experience includes ESRI ArcView GIS, XPSWMM, InfoWorks ICM, Bentley WaterGEMS, Houstorm, HEC-RAS, HEC-HMS, Culvert Master, Pondpack, Flowmaster, TR-55, HY-22 and Geopak Drainage software platforms.*

#### Years of Experience

10 years

#### Education

MS, Civil Engineering,  
University of Mississippi

BS, Civil Engineering,  
Osmania University (India)

#### Registration

- Professional Engineer:  
» Texas

#### Areas of Expertise

- Data Analytics
- GIS Data Integration
- Infrastructure Mapping
- Water Distribution & Wastewater Collection System Modeling

#### **Project Engineer, Water, Wastewater and Reclaimed Water Master Planning and Rate**

**Analysis, City of Richmond (TX).** Key technical for the project that involves preparation of an integrated water, wastewater and reclaimed water utility master and financial plans. Assisting with analysis temporal and spatial data to integrate into the master plans.

#### **Project Engineer, Water Modeling & Master Planning, San Jacinto River Authority, The**

**Woodlands (TX).** Developed SJRA water distribution system infrastructure features and GIS database, integrated GIS data into model, and produced maps of model results. Created detailed CIP maps of water infrastructure.

#### **Project Engineer, Drinking Water Treatment and Distribution Technical Sustainability Support**

**Program, City of Houston (TX).** Key technical resource with obtaining, reviewing, analyzing and summarizing distribution system information for Kingwood service area. Developed GIS exhibits of customer complaints to better define the water quality sources and summarize findings and provide recommendations.

#### **Project Engineer, Wastewater Collection System Model Update, San Jacinto River Authority, The**

**Woodlands (TX).** Key team member for the project that updated the Woodlands CS Model with current infrastructure information for gravity sewers, force mains, lift stations and wastewater treatment plants. Reviewed and developed SJRA distribution system infrastructure features and GIS databases which were used to update the Infoworks ICM Model.

#### **Project Engineer, North Harris County Regional Water Authority, Water Quality Management**

**Study, North Harris County Regional Water Authority (TX).** Assisting the team with review and analysis of GIS data for water demands and surface water integration into predominantly groundwater systems.

#### **Project Engineer, Storm Drainage Program Support, City of Houston (TX).**

Project Engineer for several CIP projects that involved in reviewing drainage reports, plans from drainage and paving, water and wastewater. Provided hydraulic and hydrology technical assistance, prepared project maps in ArcGIS and attended TRC meetings.

#### **Project Engineer, Water Line Replacement Design, City of Houston (TX).**

Performed water line replacement design for multiple streets for various projects. Managed the project from PER phase to the final design.

#### **Project Engineer, Rebuild Houston 10-Year Plan for Drainage, City of Houston (TX).**

Assisted City of Houston PWE Planning and Development Services Division in identifying high priority need areas that have to be studied using the SWEET program. Responsible in ranking high prioritized subprojects to be studied in the design phase based on the total structural flooding, repetitive losses, ROW flooding complaints, and other pertinent information.

A large, white, teardrop-shaped water tower stands against a blue sky with scattered white clouds. The words "SUGAR LAND" are painted in bold, blue, sans-serif capital letters across the upper portion of the tower. The tower is supported by a dark, cylindrical base. In the background, there are green trees and a utility pole with wires. The entire image is overlaid with a large, semi-transparent white 'X' shape that divides the page into four quadrants.

Appendix B  
**ADDITIONAL  
INFO/FORMS**

# Appendix B | Additional Info / Forms

The following forms are included in this section:

- Bidder / Respondent Information
- Bidder Certification & Addenda Acknowledgment

**RESPONDENT INFORMATION FORM**FULL LEGAL FIRM/COMPANY NAME: CDM Smith Inc.BUSINESS STREET ADDRESS: 11490 Westheimer Rd #700BUSINESS MAILING ADDRESS: Houston, TX 77077BUSINESS TELEPHONE NUMBER: (713) 423-7300BUSINESS FAX NUMBER: (281) 589-8295

COUNTY: Harris MINORITY OWNED: 5,000 Total #OF EMPLOYEES 100 Houston  
\*\*\*\*\*

CORPORATION: ☒ PARTNERSHIP: ☐ PROPRIETORSHIP: ☐ L.L.C. ☐ L.L.P. ☐YEAR EST. 1947 NO. OF YEARS IN BUSINESS 70 FEDERAL ID NO. 04-2473650NATURE OF BUSINESS: Engineering

## PRINCIPALS:

NAME: Stephen J. Hickox TITLE: Chief Executive OfficerNAME: Tim Wall TITLE: President & Chief Operating OfficerNAME: Thierry Desmaris TITLE: Executive Vice President, Finance

\*\*\*\*\*

BANK REFERENCE: Bank of AmericaADDRESS / CITY / STATE / ZIP : 100 Federal Street, Boston, MA 02110PHONE NO. Thomas F. Brennan, Senior Vice President / (617) 434-4512

**BIDDER CERTIFICATION AND ADDENDA ACKNOWLEDGEMENT**

By signature affixed, the bidder certifies that neither the bidder nor the firm, corporation, partnership, or institution represented by the bidder, or anyone acting for such firm, corporation, or institution has violated the anti-trust laws of this State, codified in Section 15.01, et seq., Texas Business and Commerce Code, or the Federal antitrust laws, nor communicated directly or indirectly the bid made to any competitor or any other person engaged in such line of business.

Bidder has examined the specifications and has fully informed themselves as to all terms and conditions. Any discrepancies or omissions from the specifications or other documents have been clarified with City representatives and noted on the bid submitted.

Bidder guarantees product offered will meet or exceed specifications identified in this RFQ.

**Bidder must initial next to each addendum received in order to verify receipt:**

Addendum #1 N/A Addendum #2 N/A Addendum #3 N/A

**Bidder Must Fill in and Sign:**

NAME OF FIRM/COMPANY: CDM Smith Inc.

AGENTS NAME: Amber Batson, PE

AGENTS TITLE: Client Service Leader

MAILING ADDRESS: 11490 Westheimer Rd #700

CITY, STATE, ZIP: Houston, TX 77077

PHONE & FAX NUMBERS: PH: (713) 423-7300 / FX: (281) 589-8295

E-MAIL ADDRESS: BatsonAm@cdmsmith.com

AUTHORIZED SIGNATURE: Amber Batson

DATE: June 23, 2017



CITY OF SUGAR LAND

**CDM  
Smith**<sup>®</sup>  
[cdmsmith.com](http://cdmsmith.com)



11490 Westheimer Road, Suite 700  
Houston, Texas 77077  
tel: 713-423-7300

August 18, 2017

Ms. Katie Clayton, P.E.  
Water Resources Manager  
Public Works Department  
City of Sugar Land  
111 Gillingham Lane  
Sugar Land, Texas 77478

Subject: Proposal for the Development of an Integrated Water Resources Plan  
RFQ 2017-14

Dear Ms. Clayton:

CDM Smith is pleased to submit the attached proposal to assist the City of Sugar Land with the development of an Integrated Water Resources Plan. The attached documents include a proposed scope of work, schedule, summary of hours estimate, and fee estimate.

We look forward to working with you on this important project. Should you have any questions on the enclosed documents, please feel free to call (713) 423-7300 to contact either Tina Petersen ([petersencm@cdmsmith.com](mailto:petersencm@cdmsmith.com)) or Amber Batson ([batsonam@cdmsmith.com](mailto:batsonam@cdmsmith.com)) at any time.

Very truly yours,

A handwritten signature in black ink that reads "Tina Petersen".

Tina Petersen, PhD, PE  
Project Manager  
CDM Smith Inc.  
TBPE Firm No. F-3043

A handwritten signature in blue ink that reads "Amber M. Batson".

Amber M. Batson, PE  
Principal-in-Charge  
CDM Smith Inc.  
TBPE Firm No. F-3043



## *Summary of Work*

# City of Sugar Land Integrated Water Resources Plan

The following presents CDM Smith's proposed scope of work and fee for developing an Integrated Water Resources Plan (IWRP) for the City of Sugar Land (City). The scope of work is based on the City's RFQ 2017-14 and subsequent discussions with staff from City's Public Works Department.

## Overview and Purpose

The City of Sugar Land (City) recognizes the need to have a clear vision and strategic direction for water supplies to meet the future water demands. Historically, the City met growing water demands through expanded groundwater wells. With the implementation of regulatory restrictions on groundwater withdrawals by the Fort Bend Subsidence District (FBSD) in 2014, the City was required to convert 30 percent of the City's total demand to alternative, or non-groundwater sources. The City approved the first Groundwater Reduction Plan (GRP) in 2008, which outlined the City's strategies for reducing dependence on groundwater supplies. The City partners with 17 other water providers in the region to achieve compliance with the FBSD regulations. The GRP strategy included securing surface water contracts and construction of the City's Surface Water Treatment Plant. Increased FBSD groundwater restriction requirements are scheduled for 2025, prompting the need for a thorough examination of the City's available alternative water supplies, including surface water rights and contracts for both raw water uses and expansion of the Surface Water Treatment Plant, and expanded reclaimed wastewater effluent use.

The purpose of the IWRP is to identify a combination of capital projects, management strategies, and policies that will be both cost-effective and sustainable to meet the future water needs for the City. The plan will provide a strategic roadmap for short and long-term water supply strategies. The IWRP will build from past and recent work completed by the City such as the 2012 Water Master Plan, water supply modeling (WAM and groundwater).

**Global Assumption:** Some tasks include the preparation of a technical memorandum that summarizes our work as an interim project deliverable. Comments from the City on these interim project deliverables will be logged and incorporated into the draft IWRP report. As such, revised technical memoranda will not be prepared and sent to the City.

## Basic Services

### Task 1 – Initiate the IWRP

CDM Smith will coordinate and schedule an in-person kick-off workshop with City Staff upon receiving the Executed Task Order. The purpose of the meeting will be to:

- Establish the project team members, key points of contact, and roles.
- Establish the primary tasks and production schedule.
- Identify the challenges of developing the IWRP.

- Discuss stakeholders and their involvement to include the Citizen Task Force and Council Task Force.
- Review and refine IWRP objectives.
- Identify additional sources of information that will be beneficial to developing the IWRP, including the Water Supply Reliability Study and other pertinent documents.
- Identify the critical factors to be incorporated into evaluating options and integrated strategies in the IWRP.
- Identify roles of key consultant and City staff members, communication protocols, review periods and overall expectations.

The CDM Smith project manager, principal-in-charge, and project director will attend in person. Other key CDM Smith team members may participate via virtual meeting. Travel costs for attending this training have been included as part of this task.

A key outcome of this kick-off meeting will be to review system simulation software that will be used as the platform for the IWRP Decision Support Model (DSM). Prior to the kick-off meeting, CDM Smith will prepare a brief background on the most widely used software platforms that will include software license costs, advantages and disadvantages. We will facilitate and discussion with the City to determine which software package best meets the needs for this project.

A data file sharing system for both the City and consultant use will be established (as outlined in Task 9.4). The sharing file system will allow the City to share relevant past studies and data, and for CDM Smith to store project deliverables. Only specified members of the consultant-City team will have access to the file sharing system.

#### **Deliverables:**

- Meeting agenda and minutes with decision on DSM software package
- Data file sharing system log-in information/instructions

### **Task 2 – Summarize Existing System and Constraints**

CDM Smith and our team member, KIT, will summarize the existing conditions that will be used as the basis to develop the IWRP. We will use existing information provided by the City to summarize the following for each service area:

- Existing and future capacities for water, wastewater, reclaimed and raw water systems.
- Likely regulatory constraints to achieving additional capacity from the existing water, wastewater, reclaimed and raw water systems.
- Likely treatment capacity, process, and conveyance constraints to achieving additional capacity from the existing water, wastewater, reclaimed and raw water systems.

- Issues regarding compliance with Fort Bend Subsidence District groundwater regulations and other water supply regulations.

The existing condition is assumed to reflect the City's facilities and operations as of December 2016. As part of this task, CDM Smith will begin to develop a project bibliography to gather and confirm existing data sources that will be beneficial to developing the IWRP. We will develop a list of available existing modeling tools (e.g., hydraulic, groundwater, WAM) and their publication dates (or versions) that will be used to develop inputs into the DSM.

#### **Deliverables:**

- Technical memorandum summarizing existing conditions and most likely constraints, a list of the modeling tools that will be the basis for the IWRP, and draft bibliography.

#### **Assumptions:**

- City's WAM and groundwater modeling and documentation will be complete and available for use as of NTP for the IWRP.

### **Task 3 – Refine Water Demand Estimates**

CDM Smith will refine spatially and temporally distributed water, wastewater, and reclaimed water service estimates at the planned development level. The 2012 Water Master Plan and GIS data files will be provided to us for this task. The 2012 Water Master Plan includes planning projections for the City of Sugar Land Extra-Territorial Jurisdiction, through approximately 850 planned development polygons. Estimates for the number of equivalent single family connections for each polygon will be provided for each planning horizon.

For the purposes of the IWRP, CDM Smith does not believe that 850 separate demand areas are needed for the DSM. Thus, we will work with the City to determine the minimum number of IWRP demand areas that are needed in order for us to evaluate water supply alternatives.

The IWRP demand areas will include:

- Existing - development has infrastructure and services already in place.
- Future - unknown development in the service area that is likely to be served by the City.

Monthly water, wastewater, reclaimed and raw water service estimates will be developed using the metering data and monthly operating reports from October 2010 to October 2016. Future planned development categories will be assigned water, wastewater, reclaimed, and raw water service using existing developments that are considered to be representative of the future developments. The monthly water demands for each development will be broken into indoor and outdoor components. If adequate data are available, the water demands will be further separated into residential indoor, residential outdoor, other indoor, and other outdoor. The existing water, wastewater, reclaimed and raw water services to each planned development will be totalized, averaged, and normalized by connection, population, and equivalent residential connection. The population estimates will be based on growth projections provided by the City. Existing and future service areas and planned development information will be provided by the City in a GIS

compatible format. The City will also provide historical pumpage data for the GRP wells to be incorporated into the demand projections.

The effort includes an on-site meeting with City staff to discuss the data being used in the service estimates with up to two local CDM Smith team members attending.

We will coordinate with the consultant selected by the City for their reclaimed water study in determining the potential water demands that can be served by reclaimed water.

**Deliverable:**

- GIS coverages with monthly water, wastewater, reclaimed and raw water service estimates statistical analysis, attributed by service area, planned development, population, and statistical analysis.

## **Task 4 – Gap, Options and Objectives**

### **Task 4.1 – Conduct Gap Analysis**

Using the results of the previous tasks, CDM Smith will characterize the limitations and potential opportunities for serving the City’s existing and future water demands. We will identify both gaps between future demands and existing water supplies, as well as gaps in existing treatment infrastructure. The gap analysis will be performed using GIS to generate snapshots of the City GRP’s services needs for 2018, 2025, and 2040, which represents full buildout. The gap analysis will include the following elements:

- Overlay existing facilities on the spatially and temporally distributed utility services organized by planning category.
- Incorporate planned improvements to utility facilities based on the timing and capacities recommended in previous master plans and studies.
- Identify potential gaps and limitations in the timing and capacity for meeting utility service needs for each snapshot.
- Identify uncertainties or knowledge gaps in evaluating potential options to be considered in the system integration analysis and recommend ways to develop additional information to reduce uncertainty and improve the IWRP analysis. These uncertainties might include uncertainties in regulations, demographic growth, and technology for treating water.

**Deliverable:**

- Technical memorandum that provides tabular and graphical summaries of the system and potential service needs.

## Task 4.2 – Characterize Supply Options

CDM Smith with the support of its subconsultant, KIT, will characterize up to 15 individual supply options that can be tested to reduce or eliminate supply and system gaps identified in Task 4.1. CDM Smith will first rely on previous studies and plans to characterize these options. For options that have not yet been studied by the City or other agencies, CDM Smith will perform a desktop, feasibility-level analysis using well accepted unit cost curves and professional judgement. For each option, CDM Smith will summarize:

- Potential supply yield
- Hydrological variability/dependence
- Capital and operating cost
- Water quality attributes
- Implementation issues (institutional, technical, public acceptance)
- Potential environmental impacts

Additional options can be included in the project for \$2,500 per option, subject to written approval from the City.

### **Deliverable:**

- Option “Fact Sheets” that summarize the information developed for each option.

## Task 4.3 – Refine IWRP Objectives and Develop Performance Metrics

CDM Smith will review the draft IWRP objectives that the City has prepared. The objectives will be reviewed in terms of their alignment with the overall goal for the IWRP and to confirm that they are non-redundant, easy to understand, and can show distinction between alternatives. For each objective, CDM Smith will recommend performance metrics that will be used to compare and rank alternatives. Performance metrics may be quantitative, with most of these being produced from the DSM, while others may be qualitative. We understand that there will be significant input from the two stakeholder task force groups on the refinement of objectives and development of performance metrics. An exercise to weight the objectives in terms of relative importance will be done as part of this task.

### **Deliverable:**

- Tabular summary of the refined objectives, performance metrics and objective weights.

## Task 4.4 – Develop Initial Portfolio/ Thematic Alternatives Definition

Working closely with the City, CDM Smith will draft up to 10 initial definitions of alternatives, representing various combinations of the options conceptualized in Task 4.2. We will recommend using themes for these initial alternatives, such as low cost, high resiliency, high adaptability. We understand that there will be significant input from the two stakeholder task

force groups on the definition of initial alternatives for the IWRP. This input will be obtained as part of meetings described in Task 9.

**Deliverable:**

- Tabular summary of the draft portfolio / thematic alternative definitions.

## **Task 5 – Develop IWRP Decision Support Model (DSM)**

### **Task 5.1 – Model Schematic and Input Response Functions**

CDM Smith will develop a draft model schematic showing the relevant model components, linkages, and interconnectivity. Based on comments received from the City, we will refine the model schematic.

CDM Smith will develop the input response functions that will include:

- Customer water demands and wastewater collection service, to include GRP members.
- Indoor conservation programs.
- Outdoor conservation programs.
- Reclaimed water offsets and substitutions.
- Surface water supplies (from City's WAM modeling).
- Groundwater supplies (from City's groundwater modeling).
- Water rights for additional surface water.
- Existing and proposed storage facilities.
- Existing and proposed treatment plant facilities.
- Existing and proposed conveyance systems.
- Regulatory constraints.
- New Water Supply Options, which will include simulation of:
  - Yield estimates
  - Capital and O&M costs
  - Water quality attributes

### **Task 5.2 – Program and Populate Model**

CDM Smith will program the model using the selected simulation software from Task 1. The model will be constructed in modular format so that additions and more complexity can be more easily added in subsequent updates of the IWRP. The model will have the following features:

- Monthly time step.
- Planning period from 2018 to 2040.
- Appropriate number of demand areas and supply nodes to capture spatial variation within the model.
- Reflection of the backbone of the water, wastewater and reclaimed water systems – meaning major treatment plants, major collection system and distribution system pipes, and other key facilities. The DSM is not designed to be a hydraulic analysis, but peaking factors/constraints can be used to approximate system capacity issues and evaluations.
- Simulation of storage operations within City water and reclaimed storage facilities.
- Simulation of lifecycle costs, using high-level cost estimates. For the purposes of this project, high level cost estimates will be based on feasibility or master plan studies when they are available. When not available, cost estimates will be completed based on cost curves for similar projects or estimated in a manner consistent with planning-level order-of-magnitude cost estimates. It is important to note that these high-level cost estimates are intended for use in comparing alternatives to each other for long-range planning purposes and do not involve any engineering concept development. The expected level of accuracy is on the order of +/- 30 to 50 percent.
- Simulation of key receiving water quality metrics (e.g., salinity).
- Simulation of size and occurrence of supply shortage and system capacity limitations.

The CDM Smith project manager, and up to two members of the decision modeling team will attend an in-person meeting to review the model. Other key CDM Smith team members may participate via virtual meeting.

### **Task 5.3 – Model Interface**

Usability of the DSM by City staff is important. CDM Smith will work closely with the City to determine the interface and what information needs to be graphed internal to the model, as well as what data and formatting needs to be output to MS Excel for further analysis and reporting. The intent of the interface is to be easy to navigate with little background on the model details. Specific feedback for the interface will be gathered as part of this task and incorporated into the model.

### **Task 5.4 – Test Model**

CDM Smith will utilize a senior modeling expert who is not working on the DSM for this project to provide QA/QC, including full model testing. This will include:

- **Verify model completeness** – Compare model schematic with model construction, make sure all necessary components are included
- **Confirm model connectivity** – Review model connections to make sure there are no discontinuities
- **Review model interface** – Ensure reading data in and out works correctly, interface does what it is supposed to do
- **Verify model mass balance** – Review time series of flow and storage to ensure no accumulation, zero flows
- **Review critical relationships** – regression equations, relationships from other models
- **Assess model calibration** – Confirm calibrated variables are reasonable, and simulated results are within acceptable specifications (error < 10% of range of variables)
- **Test model outside historical operations** – Check if model equations/assumption work for conditions outside of historical conditions ... try to push the model outside its limits

This task will be coordinated with City to obtain feedback and comments on model testing and review.

### **Task 5.5 – Model Documentation/Training**

CDM Smith will document the model's development, assumptions and major features. A training manual will accompany this documentation that highlights how the model is operated. CDM Smith will conduct a one-day training session for up to 10 City staff on how to use the DSM.

The CDM Smith project manager, and up to two members of the decision modeling team will attend an in person meeting to review the model. Other key CDM Smith team members may participate via virtual meeting. Travel costs for attending this training have been included as part of this task.

#### **Deliverables:**

- Model documentation and training materials.

#### **Assumptions:**

- City will provide training location, and appropriate number of laptops.
- City will be responsible for purchase of software license for its on-going use after project is complete.

## **Task 6 – Evaluation of Alternatives**

### **Task 6.1 – First Pass Evaluation**

Using the initial definition of alternatives from Task 4, CDM Smith will use the DSM, along with a decision software (Criterion Decision Plus or similar) to rank the alternatives based on the IWRP objectives and objectives weighting. It is expected that no more than 10 initial alternatives will be needed to see major trade-offs between these alternatives.

## Task 6.2 – Second Pass Evaluation

After seeing the results from Task 6.1, and based on input from City staff and Task Force members, CDM Smith will suggest hybrid alternatives that are designed to improve the performance of the initial alternatives. It is anticipated that 2 to 3 hybrid alternatives may be developed as part of the second pass evaluation.

## Task 6.4 – Final Pass

The results from Task 6.2 will be used to develop one or two alternatives that best meet the IWRP objectives and are resilient against future uncertainties.

An additional (fourth) pass can be included in the project for \$6,600, subject to written approval from the City.

### **Deliverables:**

- Technical memorandum on alternatives evaluations, assumptions and results.
- Populated ranking software for each pass of the evaluation.

## Task 7 – Presentation of Results to Stakeholder Workshops

CDM Smith will prepare materials for presenting results of Task 6 (i.e., the IWRP model and potential alternatives) to the Council Task Force and Citizen Task Force. The results will be presented at two stakeholder workshops, one workshop for the Council Task Force and one for the Citizen Task Force.

We will work closely with the City staff on graphics, key messages, and best ways to convey the information. Up to three CDM Smith team staff will attend both workshops (assumed for the purposes of budget travel to be scheduled on subsequent days) and will stand ready to assist the City in presenting this information or just be available for technical questions.

The CDM Smith team will prepare an agenda and presentation for City review and approval. Subsequent to the meeting, the CDM Smith team will distribute workshop minutes and incorporate attendee comments for both meetings.

The CDM Smith project manager and technical advisor will attend the stakeholder workshops. Other key CDM Smith team members may participate via virtual meeting. Travel costs for attending this meeting have been included as part of this task.

Additional task force meetings throughout the project will be addressed in Task 10.

### **Deliverables:**

- Proposed agenda.
- Presentation materials.
- Workshop notes.

## **Task 8 – Develop IWRP Strategy and Report**

### **Task 8.1 – Develop Strategy**

Based on input from City and Task Force members, CDM Smith will develop a IWRP strategy that includes near, mid and long-term actions. These actions will be a combination of projects, policies and future planning needs. The strategy will be developed collaboratively between consultant and City staff team.

### **Task 8.2 – Develop Draft IWRP Report**

Based on task deliverables, comments from City staff on technical memoranda, and input from Task Force members, CDM Smith will prepare a full draft report. This draft will constitute about an 80% completion level. The draft will be delivered electronically for City staff, with goal of using track changes within MS Word. The City will review and provide a summary of all City comments; any conflicting comments from individual City staff will be resolved before providing the draft to CDM Smith.

### **Task 8.3 – Develop Final IWRP Report**

Based on comments received on draft IWRP, CDM Smith will develop a final IWRP report. Comments will be logged to show how they were incorporated into the final report.

#### **Deliverables:**

- First draft report, delivered electronically in MS word format (PDF format for those who would rather see a hard copy).
- Final report, delivered electronically in MS word format with native graphic files (GIS coverages and DSM model files), as well as electronically in pdf format, and 10 hard copies.
- Other data files, including model files and output files.

## **Task 9 – Project Management**

### **Task 9.1 – Project Meetings, Monthly Project Reporting**

CDM Smith will participate in weekly conference call/skype calls, lasting up to 30 minutes for the first two months, then bi-weekly calls for duration of project. These project calls will be brief, focused on project status, anticipated work, potential issues and clarifications. These are in addition to technical meetings with City staff that are anticipated for several of the tasks. The effort for those technical meetings are included within each of those tasks.

### **Task 9.2 – Monthly Reporting and Project Administration**

CDM Smith's project manager will track budget and schedule, including work of our sub-contractor. Monthly invoices with summary of work will be prepared.

In order to establish a common platform for sharing and maintain project files, CDM Smith will establish a Project Team Sharepoint. This task will be to establish and maintain an electronic Sharepoint incorporating meeting agendas, draft technical memoranda, at a minimum.

**Deliverables:**

- Presentation materials for stakeholder meetings.
- Agenda and meeting notes for project meetings.
- Sharepoint Website administration.

## Additional Services

Additional services beyond the basic scope of services included in the City's scope are identified in this task.

### Task 10 – Additional Stakeholder Services

This task provides in-person attendance for stakeholder meetings at the request of the City. There are three types of stakeholder meetings that have been budgeted:

- **Level 1: Basic Support (typically 2 hours)** – This would include attendance of the CDM Smith Project Manager or her designee at City-led meetings in a supporting role. This could include meetings with the Task Forces or Council. City would be responsible for preparing meeting agenda, developing meeting content, and taking/distributing notes of the meeting. Up to four meetings have been included in the scope of services.
  - Additional meetings can be included in the project for \$650 per meeting, subject to written approval from the City.
- **Level 2: Standard Meeting (typically 2.5 hours as well as 1-2 hours of preparation)** – This would include attendance of the CDM Smith Project Manager or her designee for a normal-length meeting with the Task Forces or Council. CDM Smith may be responsible for preparing meeting agenda topics, developing meeting content (based on previous materials developed for project), and/or taking/distributing notes of the meeting. Up to six meetings have been included in the scope of services.
  - Additional meetings can be included in the project for \$1,800 per meeting, subject to written approval from the City.
- **Level 3: In-Depth Workshop (typically 4 hours as well as 2-4 hours of preparation)** – This would include attendance of both the CDM Smith Project Manager and the Project Director for a longer workshop meeting. This meeting would be facilitated by the CDM Smith Technical Advisor and would include travel costs for his attendance in person. Content would be developed by CDM Smith and notes would be provided by CDM Smith following the workshop. Up to two meetings have been included in the scope of services.
  - Additional meetings can be included in the project for \$5,800 per meeting, subject to written approval from the City.

## Task 11 – Miscellaneous Additional Services

CDM Smith may assist the City with additional services on an as-needed basis. CDM Smith will not proceed without written authorization for Miscellaneous Additional Services and will invoice the City for said services based upon hourly billing rates per **Attachment A**.

## Schedule

The preliminary schedule for the project is included as **Attachment B**. The time of services for this contract is through September 30, 2018.

## Payment and Compensation

Payments for the services presented herein for Basic Services: Task Nos. 1 through 9 shall be made on a lump sum basis, invoiced monthly based upon percent complete by task. The total lump sum amount for Basic Services is **\$464,000**. A task budget summary has been provided in **Attachment C-1** with a detailed hours estimate by staff in **Attachment C-2**.

Payment for Additional Stakeholder Services: Task No. 10 shall be made on a unit price basis depending upon the level of support being completed. The table below summarizes the estimated total cost for Additional Stakeholder Services: Task No. 10 based upon the assumed number of meetings previously detailed.

| Level                                     | Unit Price | Estimated Quantity | Estimated Total |
|-------------------------------------------|------------|--------------------|-----------------|
| 1: Basic Support                          | \$650      | 4                  | \$2,600         |
| 2: Standard Meeting                       | \$1,800    | 6                  | \$10,800        |
| 3: In-Depth Workshop                      | \$5800     | 2                  | \$11,600        |
| Subtotal Additional Stakeholder Services: |            |                    | \$25,000        |

Payment for Miscellaneous Additional Services: Task No. 11 shall be made on an hourly rate basis based upon the work performed. CDM Smith will not proceed with additional services without written authorization from the City.

The total compensation for this contract shall not exceed **\$489,000** for both the Basic Services (lump sum) and Additional Services (not-to-exceed) without written authorization from the City. CDM Smith will invoice monthly based upon work performed.

## Attachment A

### Schedule of Hourly Billing Rates



ATTACHMENT A

SCHEDULE OF HOURLY BILLING RATES

| <u>CATEGORIES</u>                    | <u>HOURLY<br/>RATES</u> |
|--------------------------------------|-------------------------|
| <u>PROFESSIONAL SERVICES:</u>        |                         |
| OFFICER                              | \$ 240.00               |
| ASSOCIATE                            | \$ 210.00               |
| PRINCIPAL                            | \$ 195.00               |
| SENIOR PROFESSIONAL                  | \$ 160.00               |
| PROFESSIONAL II                      | \$ 145.00               |
| PROFESSIONAL I                       | \$ 125.00               |
| <u>PROFESSIONAL SUPPORT SERVICES</u> |                         |
| SENIOR SUPPORT SERVICES              | \$ 140.00               |
| STAFF SUPPORT SERVICES               | \$ 120.00               |
| <u>FIELD SERVICES</u>                |                         |
| SENIOR PROFESSIONAL                  | \$ 140.00               |
| PROFESSIONAL                         | \$ 120.00               |
| <u>PROJECT SUPPORT SERVICES</u>      |                         |
| PROJECT ADMINISTRATION               | \$ 120.00               |

All subconsultant and other project related expenses are subject to a handling/administrative charge of 10%.

## Attachment B

### Preliminary Schedule

**City of Sugar Land Integrated Water Resources Plan  
Draft Project Schedule**

[illegible]

## Attachment C

### Fee Estimate Breakdown

## Attachment C-1:

## City of Sugar Land Integrated Water Resources Plan - Fee Estimate Summary by Task

| Task                                                   | CDM Smith Hours | CDM Smith Labor Costs | Other Direct Costs <sup>2</sup> | Outside Prof Cost <sup>2</sup> | Total by Task (rounded) |
|--------------------------------------------------------|-----------------|-----------------------|---------------------------------|--------------------------------|-------------------------|
| Task 1 - Initiate IWRP                                 | 47              | \$ 9,545              | \$ 2,948                        | \$ 2,750                       | \$ 15,000               |
| Task 2 - Summarize Existing Conditions and Constraints | 18              | \$ 3,780              | \$ 88                           | \$ 33,000                      | \$ 37,000               |
| Task 3: Refine Future Demand Estimates                 | 99              | \$ 17,010             | \$ 1,727                        | \$ 4,400                       | \$ 23,000               |
| Task 4: Gap, Options and Objectives                    | 244             | \$ 42,970             | \$ 957                          | \$ 79,970                      | \$ 124,000              |
| Task 5: Develop IWRP DSM                               | 649             | \$ 107,100            | \$ 7,073                        | \$ 3,300                       | \$ 117,000              |
| Task 6: Evaluate and Test Alternatives                 | 210             | \$ 35,840             | \$ 803                          | \$ 9,350                       | \$ 46,000               |
| Task 7: Workshops to Review Alternatives and DSM Model | 80              | \$ 15,540             | \$ 3,894                        | \$ 3,850                       | \$ 23,000               |
| Task 8: Develop IWRP Strategy and Prepare Report       | 210             | \$ 37,970             | \$ 5,467                        | \$ 7,700                       | \$ 51,000               |
| Task 9: Progress Meetings and Project Management       | 154             | \$ 27,090             | \$ 594                          | \$ -                           | \$ 28,000               |
| <i>Total Basic Services</i>                            | <i>1,711</i>    | <i>\$ 296,845</i>     | <i>\$ 23,551</i>                | <i>\$ 144,320</i>              | <i>\$ 464,000</i>       |
| Task 10: Additional Stakeholder Services               |                 |                       |                                 |                                |                         |
| Level 1 Basic Meeting Support (per meeting)            | 3               | \$ 630                | \$ 11                           | \$ -                           | \$ 650                  |
| Level 2 Standard Meeting (per meeting)                 | 10              | \$ 1,785              | \$ 44                           | \$ -                           | \$ 1,800                |
| Level 3 In-Depth Workshop (per meeting)                | 21              | \$ 4,345              | \$ 1,441                        | \$ -                           | \$ 5,800                |
| Task 11: Miscellaneous Additional Services             | -               | \$ -                  | \$ -                            | \$ -                           | \$ -                    |
| <i>Total Additional Services<sup>1</sup></i>           | <i>113</i>      | <i>\$ 21,920</i>      | <i>\$ 3,190</i>                 | <i>\$ -</i>                    | <i>\$ 25,000</i>        |
| <b>GRAND TOTAL</b>                                     | <b>1,824</b>    | <b>\$ 318,765</b>     | <b>\$ 26,741</b>                | <b>\$ 144,320</b>              | <b>\$ 489,000</b>       |

<sup>1</sup> Assumes four Level 1, six Level 2, and two Level 3 stakeholder meetings in addition to Basic Services<sup>2</sup> Includes 10% markup

Attachment C-2: City of Sugar Land Integrated Water Resources Plan - Detailed Labor Hour Estimate

| Person                                                                  | Batson | Hughes | Petersen | Rodrigo | Morea | Fernandez | Davis  | Fritsche | Chanslor | Starosta | Bywater | Kurtz     | Hansing | Engin | Admin | Account. | CDM Smith Labor | CDM Smith Other | KIT Labor and | OP and ODC 10% | Total Consultant Fee |
|-------------------------------------------------------------------------|--------|--------|----------|---------|-------|-----------|--------|----------|----------|----------|---------|-----------|---------|-------|-------|----------|-----------------|-----------------|---------------|----------------|----------------------|
| Role                                                                    | PIC    | QA/QC  | PM       | TA      | QA/QC | QA/QC     | Demand | Demand   | System   | DSM      | DSM     | Alt. Eval | Jr. Eng | GIS   | Admin | Billing  | Dollars         | Direct Costs    | Direct Costs  | Mark-up        | (rounded)            |
| Task 1 - Initiate IWRP                                                  | 6      | 1      | 14       | 10      | 3     | 1         | 0      | 1        | 1        | 3        | 1       | 3         | 0       | 0     | 3     | 0        | \$ 9,545        | \$ 2,680        | \$ 2,500      | \$ 518         | \$ 15,000            |
| Project Kick-Off Meeting and Preparation                                | 6      | 1      | 13       | 9       | 3     | 1         | 0      | 1        | 1        | 3        | 1       | 3         | 0       | 0     | 1     | 0        | \$ 8,855        | \$ 180          | \$ -          | \$ 18          | \$ 9,000             |
| Deliverable: Meeting agenda and Minutes                                 | 0      | 0      | 1        | 1       | 0     | 0         | 0      | 0        | 0        | 0        | 0       | 0         | 0       | 0     | 2     | 0        | \$ 690          | \$ 2,500        | \$ 2,500      | \$ 500         | \$ 6,000             |
| Task 2 - Summarize Existing Conditions and Constraints                  | 0      | 0      | 6        | 0       | 4     | 0         | 0      | 0        | 8        | 0        | 0       | 0         | 0       | 0     | 0     | 0        | \$ 3,780        | \$ 80           | \$ 30,000     | \$ 3,008       | \$ 37,000            |
| Summarize Existing Conditions/Constraints/Needed Information            | 0      | 0      | 4        | 0       | 0     | 0         | 0      | 0        | 6        | 0        | 0       | 0         | 0       | 0     | 0     | 0        | \$ 2,010        | \$ 40           | \$ 25,000     | \$ 2,504       | \$ 30,000            |
| Deliverables: TM existing conditions, modeling tools, bibliography      | 0      | 0      | 2        | 0       | 0     | 0         | 0      | 0        | 2        | 0        | 0       | 0         | 0       | 0     | 0     | 0        | \$ 810          | \$ 20           | \$ 5,000      | \$ 502         | \$ 6,000             |
| QA/QC - Deliverables                                                    | 0      | 0      | 0        | 0       | 4     | 0         | 0      | 0        | 0        | 0        | 0       | 0         | 0       | 0     | 0     | 0        | \$ 960          | \$ 20           | \$ -          | \$ 2           | \$ 1,000             |
| Task 3: Refine Future Demand Estimates                                  | 0      | 0      | 4        | 6       | 4     | 0         | 6      | 74       | 0        | 4        | 0       | 0         | 0       | 0     | 1     | 0        | \$ 17,010       | \$ 1,570        | \$ 4,000      | \$ 557         | \$ 23,000            |
| Spatially Refine Demand Estimates by Sector and Type of Use             | 0      | 0      | 2        | 6       | 0     | 0         | 4      | 70       | 0        | 0        | 0       | 0         | 0       | 0     | 0     | 0        | \$ 13,840       | \$ 1,500        | \$ 3,000      | \$ 450         | \$ 19,000            |
| Deliverable: GIS maps of future demands                                 | 0      | 0      | 2        | 0       | 0     | 0         | 0      | 4        | 0        | 4        | 0       | 0         | 0       | 0     | 1     | 0        | \$ 1,820        | \$ 40           | \$ 1,000      | \$ 104         | \$ 3,000             |
| QA/QC - Deliverables                                                    | 0      | 0      | 0        | 0       | 4     | 0         | 2      | 0        | 0        | 0        | 0       | 0         | 0       | 0     | 0     | 0        | \$ 1,350        | \$ 30           | \$ -          | \$ 3           | \$ 1,000             |
| Task 4: Gap, Options and Objectives                                     | 0      | 0      | 38       | 26      | 18    | 0         | 2      | 4        | 0        | 92       | 0       | 20        | 40      | 0     | 4     | 0        | \$ 42,970       | \$ 870          | \$ 72,700     | \$ 7,357       | \$ 124,000           |
| 4.1 Supply and System Gap Analysis                                      | 0      | 0      | 4        | 2       | 0     | 0         | 2      | 4        | 0        | 24       | 0       | 4         | 0       | 0     | 0     | 0        | \$ 6,830        | \$ 140          | \$ 9,000      | \$ 914         | \$ 17,000            |
| 4.2 Characterize Options                                                | 0      | 0      | 16       | 4       | 10    | 0         | 0      | 0        | 0        | 40       | 0       | 4         | 12      | 0     | 2     | 0        | \$ 15,500       | \$ 310          | \$ 62,500     | \$ 6,281       | \$ 85,000            |
| 4.3 Objectives and Performance Metrics                                  | 0      | 0      | 6        | 10      | 0     | 0         | 0      | 0        | 0        | 4        | 0       | 0         | 0       | 0     | 0     | 0        | \$ 4,300        | \$ 90           | \$ -          | \$ 9           | \$ 4,000             |
| 4.4 Develop Initial Portfolios                                          | 0      | 0      | 6        | 8       | 0     | 0         | 0      | 0        | 0        | 0        | 0       | 4         | 12      | 0     | 0     | 0        | \$ 5,320        | \$ 110          | \$ -          | \$ 11          | \$ 5,000             |
| Deliverable: TM                                                         | 0      | 0      | 6        | 2       | 4     | 0         | 0      | 0        | 0        | 24       | 0       | 8         | 16      | 0     | 2     | 0        | \$ 10,060       | \$ 200          | \$ 1,200      | \$ 140         | \$ 12,000            |
| QA/QC - Deliverables                                                    | 0      | 0      | 0        | 0       | 4     | 0         | 0      | 0        | 0        | 0        | 0       | 0         | 0       | 0     | 0     | 0        | \$ 960          | \$ 20           | \$ -          | \$ 2           | \$ 1,000             |
| Task 5: Develop IWRP DSM                                                | 0      | 0      | 14       | 18      | 4     | 28        | 0      | 12       | 8        | 293      | 212     | 12        | 40      | 0     | 8     | 0        | \$ 107,100      | \$ 6,430        | \$ 3,000      | \$ 943         | \$ 117,000           |
| 5.1 Develop Schematic and Input Response Functions                      | 0      | 0      | 2        | 4       | 0     | 0         | 0      | 0        | 0        | 45       | 40      | 2         | 0       | 0     | 0     | 0        | \$ 15,300       | \$ 310          | \$ 1,500      | \$ 181         | \$ 17,000            |
| 5.2 Program and Populate Model                                          | 0      | 0      | 2        | 0       | 0     | 0         | 0      | 8        | 6        | 120      | 100     | 0         | 40      | 0     | 0     | 0        | \$ 43,070       | \$ 2,700        | \$ -          | \$ 270         | \$ 46,000            |
| 5.3 Develop Model Interface                                             | 0      | 0      | 4        | 6       | 0     | 0         | 0      | 0        | 0        | 24       | 24      | 2         | 0       | 0     | 0     | 0        | \$ 10,280       | \$ 210          | \$ -          | \$ 21          | \$ 10,500            |
| 5.4 Test the Model                                                      | 0      | 0      | 4        | 6       | 0     | 0         | 0      | 4        | 2        | 40       | 0       | 6         | 0       | 0     | 0     | 0        | \$ 10,670       | \$ 210          | \$ 1,500      | \$ 171         | \$ 12,500            |
| 5.5 Model Documentation/Training                                        | 0      | 0      | 0        | 0       | 0     | 0         | 0      | 0        | 0        | 24       | 24      | 0         | 0       | 0     | 0     | 0        | \$ 7,680        | \$ 150          | \$ -          | \$ 15          | \$ 8,000             |
| Deliverable: Model documentation TM                                     | 0      | 0      | 2        | 2       | 0     | 0         | 0      | 0        | 0        | 40       | 24      | 2         | 0       | 0     | 8     | 0        | \$ 12,420       | \$ 2,700        | \$ -          | \$ 270         | \$ 15,000            |
| QA/QC - DSM                                                             | 0      | 0      | 0        | 0       | 0     | 28        | 0      | 0        | 0        | 0        | 0       | 0         | 0       | 0     | 0     | 0        | \$ 6,720        | \$ 130          | \$ -          | \$ 13          | \$ 7,000             |
| QA/QC - Deliverables                                                    | 0      | 0      | 0        | 0       | 4     | 0         | 0      | 0        | 0        | 0        | 0       | 0         | 0       | 0     | 0     | 0        | \$ 960          | \$ 20           | \$ -          | \$ 2           | \$ 1,000             |
| Task 6: Evaluate and Test Alternatives                                  | 0      | 0      | 16       | 22      | 12    | 16        | 0      | 4        | 0        | 44       | 0       | 24        | 64      | 0     | 8     | 0        | \$ 35,840       | \$ 730          | \$ 8,500      | \$ 923         | \$ 46,000            |
| 6.1 First Pass Simulations - Screening                                  | 0      | 0      | 4        | 8       | 0     | 0         | 0      | 4        | 0        | 10       | 0       | 8         | 24      | 0     | 0     | 0        | \$ 9,280        | \$ 190          | \$ 4,000      | \$ 419         | \$ 14,000            |
| 6.2 Second Pass Simulations - Alternative Selection                     | 0      | 0      | 4        | 6       | 0     | 0         | 0      | 0        | 0        | 6        | 0       | 4         | 12      | 0     | 0     | 0        | \$ 5,380        | \$ 110          | \$ 2,000      | \$ 211         | \$ 7,500             |
| 6.3 Third Pass Simulations - Testing Uncertainties                      | 0      | 0      | 0        | 0       | 0     | 0         | 0      | 0        | 0        | 0        | 0       | 0         | 0       | 0     | 0     | 0        | \$ -            | \$ -            | \$ -          | \$ -           | \$ -                 |
| 6.4 Final Pass Simulations - IWRP Strategy Selection                    | 0      | 0      | 4        | 6       | 0     | 0         | 0      | 0        | 0        | 12       | 0       | 4         | 12      | 0     | 0     | 0        | \$ 6,340        | \$ 130          | \$ 1,000      | \$ 113         | \$ 7,500             |
| Deliverable: Alternatives TM                                            | 0      | 0      | 4        | 2       | 0     | 0         | 0      | 0        | 0        | 16       | 0       | 8         | 16      | 0     | 8     | 0        | \$ 8,120        | \$ 160          | \$ 1,500      | \$ 166         | \$ 10,000            |
| QA/QC - DSM                                                             | 0      | 0      | 0        | 0       | 0     | 16        | 0      | 0        | 0        | 0        | 0       | 0         | 0       | 0     | 0     | 0        | \$ 3,840        | \$ 80           | \$ -          | \$ 8           | \$ 4,000             |
| QA/QC - Deliverables                                                    | 0      | 0      | 0        | 0       | 12    | 0         | 0      | 0        | 0        | 0        | 0       | 0         | 0       | 0     | 0     | 0        | \$ 2,880        | \$ 60           | \$ -          | \$ 6           | \$ 3,000             |
| Task 7: Workshops to Review Alternatives and DSM Model                  | 4      | 0      | 20       | 22      | 0     | 0         | 0      | 0        | 0        | 24       | 0       | 6         | 0       | 0     | 4     | 0        | \$ 15,540       | \$ 3,540        | \$ 3,500      | \$ 704         | \$ 23,000            |
| Prepare and Attend Two Stakeholder Workshops                            | 4      | 0      | 16       | 20      | 0     | 0         | 0      | 0        | 0        | 24       | 0       | 4         | 0       | 0     | 0     | 0        | \$ 13,420       | \$ 3,500        | \$ 3,500      | \$ 700         | \$ 21,000            |
| Deliverables: Workshop agenda, presentations, and minutes               | 0      | 0      | 4        | 2       | 0     | 0         | 0      | 0        | 0        | 0        | 0       | 2         | 0       | 0     | 4     | 0        | \$ 2,120        | \$ 40           | \$ -          | \$ 4           | \$ 2,000             |
| Task 8: Develop IWRP Strategy and Prepare Report                        | 6      | 0      | 26       | 34      | 20    | 0         | 4      | 8        | 0        | 60       | 0       | 8         | 32      | 0     | 12    | 0        | \$ 37,970       | \$ 4,970        | \$ 7,000      | \$ 1,197       | \$ 51,000            |
| 8.1 Develop IWRP Strategy                                               | 0      | 0      | 10       | 18      | 8     | 0         | 0      | 0        | 0        | 0        | 0       | 4         | 8       | 0     | 0     | 0        | \$ 9,980        | \$ 400          | \$ 1,000      | \$ 140         | \$ 11,500            |
| 8.2 Draft IWRP Report                                                   | 4      | 0      | 10       | 10      | 0     | 0         | 0      | 5        | 0        | 36       | 0       | 2         | 14      | 0     | 7     | 0        | \$ 14,750       | \$ 2,700        | \$ 3,600      | \$ 630         | \$ 21,500            |
| 8.3 Final IWRP Report                                                   | 2      | 0      | 6        | 6       | 0     | 0         | 0      | 3        | 0        | 24       | 0       | 2         | 10      | 0     | 5     | 0        | \$ 9,580        | \$ 1,800        | \$ 2,400      | \$ 420         | \$ 14,000            |
| QA/QC - Deliverables                                                    | 0      | 0      | 0        | 0       | 12    | 0         | 4      | 0        | 0        | 0        | 0       | 0         | 0       | 0     | 0     | 0        | \$ 3,660        | \$ 70           | \$ -          | \$ 7           | \$ 4,000             |
| Task 9: Progress Meetings and Project Management                        | 14     | 4      | 66       | 0       | 0     | 0         | 0      | 4        | 4        | 8        | 4       | 4         | 8       | 0     | 14    | 24       | \$ 27,090       | \$ 540          | \$ -          | \$ 54          | \$ 28,000            |
| 9.1 Project Status Meetings (weekly for 2 months, bi-weekly thereafter) | 0      | 0      | 26       | 0       | 0     | 0         | 0      | 4        | 4        | 8        | 4       | 4         | 8       | 0     | 0     | 0        | \$ 10,440       | \$ 210          | \$ -          | \$ 21          | \$ 11,000            |
| 9.2Budget, Schedule Tracking, Invoicing                                 | 14     | 4      | 28       | 0       | 0     | 0         | 0      | 0        | 0        | 0        | 0       | 0         | 0       | 0     | 14    | 24       | \$ 14,130       | \$ 280          | \$ -          | \$ 28          | \$ 14,000            |
| Deliverables: Meeting notes from project status meetings                | 0      | 0      | 12       | 0       | 0     | 0         | 0      | 0        | 0        | 0        | 0       | 0         | 0       | 0     | 0     | 0        | \$ 2,520        | \$ 50           | \$ -          | \$ 5           | \$ 3,000             |
| Total                                                                   | 30     | 5      | 204      | 138     | 65    | 45        | 12     | 107      | 21       | 528      | 217     | 77        | 184     | 0     | 54    | 24       | \$ 296,845      | \$ 21,410       | \$ 131,200    | \$ 15,261      | \$ 465,000           |
| Additional Services                                                     | 0      | 0      | 56       | 17      | 0     | 0         | 0      | 0        | 0        | 32       | 0       | 0         | 0       | 0     | 8     | 0        | \$ 21,920       | \$ 2,900        | \$ -          | \$ 290         | \$ 25,000            |
| Task 10 Additional Stakeholder Services                                 | 0      | 0      | 0        | 0       | 0     | 0         | 0      | 0        | 0        | 0        | 0       | 0         | 0       | 0     | 0     | 0        | \$ -            | \$ -            | \$ -          | \$ -           | \$ -                 |
| Level 1 Meeting                                                         | 0      | 0      | 12       | 0       | 0     | 0         | 0      | 0        | 0        | 0        | 0       | 0         | 0       | 0     | 0     | 0        | \$ 2,520        | \$ 40           | \$ -          | \$ 4           | \$ 2,600             |
| Level 1 Meeting - Four Meetings                                         | 0      | 0      | 12       | 0       | 0     | 0         | 0      | 0        | 0        | 0        | 0       | 0         | 0       | 0     | 0     | 0        | \$ 2,520        | \$ 40           | \$ -          | \$ 4           | \$ 2,600             |
| Level 2 Meeting                                                         | 0      | 0      | 24       | 0       | 0     | 0         | 0      | 0        | 0        | 24       | 0       | 0         | 0       | 0     | 0     | 0        | \$ 8,880        | \$ 180          | \$ -          | \$ 18          | \$ 9,000             |
| Deliverables: Meeting notes                                             | 0      | 0      | 3        | 0       | 0     | 0         | 0      | 0        | 0        | 3        | 0       | 0         | 0       | 0     | 6     | 0        | \$ 1,830        | \$ 60           | \$ -          | \$ 6           | \$ 1,800             |
| Level 2 Meeting - Six Meetings                                          | 0      | 0      | 27       | 0       | 0     | 0         | 0      | 0        | 0        | 27       | 0       | 0         | 0       | 0     | 6     | 0        | \$ 10,710       | \$ 240          | \$ -          | \$ 24          | \$ 10,800            |
| Level 3 Meeting                                                         | 0      | 0      | 16       | 16      | 0     | 0         | 0      | 0        | 0        | 4        | 0       | 0         | 0       | 0     | 0     | 0        | \$ 7,840        | \$ 2,600        | \$ -          | \$ 260         | \$ 10,700            |
| Deliverables: Meeting notes                                             | 0      | 0      | 1        | 1       | 0     | 0         | 0      | 0        | 0        | 1        | 0       | 0         | 0       | 0     | 2     | 0        | \$ 850          | \$ 20           | \$ -          | \$ 2           | \$ 900               |
| Level 3 Meeting - Two Meetings                                          | 0      | 0      | 17       | 17      | 0     | 0         | 0      | 0        | 0        | 5        | 0       | 0         | 0       | 0     | 2     | 0        | \$ 8,690        | \$ 2,620        | \$ -          | \$ 262         | \$ 11,600            |
| Task 11. Additional Services. As needed.                                | 0      | 0      | 0        | 0       | 0     | 0         | 0      | 0        | 0        | 0        | 0       | 0         | 0       | 0     | 0     | 0        | \$ -            | \$ -            | \$ -          | \$ -           | \$ -                 |

## Exhibit B-1

### REQUIREMENTS FOR ALL INSURANCE DOCUMENTS

The Contractor shall comply with each and every condition contained herein. The Contractor shall provide and maintain the minimum insurance coverage set forth below during the term of its agreement with the City. Any Subcontractor(s) hired by the Contractor shall maintain insurance coverage equal to that required of the Contractor. It is the responsibility of the Contractor to assure compliance with this provision. The City of Sugar Land accepts no responsibility arising from the conduct, or lack of conduct, of the Subcontractor.

#### INSTRUCTIONS FOR COMPLETION OF INSURANCE DOCUMENT

With reference to the foregoing insurance requirements, Contractor shall specifically endorse applicable insurance policies as follows:

- A. The City of Sugar Land shall be named as an additional insured with respect to General Liability and Automobile Liability **on a separate endorsement**
- B. A waiver of subrogation in favor of The City of Sugar Land shall be contained in the Workers Compensation and all liability policies and must be provided **on a separate endorsement.**
- C. All insurance policies shall be endorsed to the effect that The City of Sugar Land will receive at least thirty (30) days' written notice prior to cancellation or non-renewal of the insurance.
- D. All insurance policies, which name The City of Sugar Land as an additional insured, must be endorsed to read as primary and non-contributory coverage regardless of the application of other insurance.
- E. **Chapter 1811 of the Texas Insurance Code, Senate Bill 425 82(R) of 2011, states that the above endorsements cannot be on the certificate of insurance. Separate endorsements must be provided for each of the above.**
- F. All insurance policies shall be endorsed to require the insurer to immediately notify The City of Sugar Land of any material change in the insurance coverage.
- G. All liability policies shall contain no cross liability exclusions or insured versus insured restrictions.
- H. Required limits may be satisfied by any combination of primary and umbrella liability insurances.
- I. Contractor may maintain reasonable and customary deductibles, subject to approval by The City of Sugar Land.
- J. Insurance must be purchased from insurers having a minimum AmBest rating of B+.
- K. All insurance must be written on forms filed with and approved by the Texas Department of Insurance. (ACORD 25 2010/05) Coverage must be written on an occurrence form.
- L. Contractual Liability must be maintained covering the Contractors obligations contained in the contract. Certificates of Insurance shall be prepared and executed by the insurance company or its authorized agent and shall contain provisions representing and warranting all endorsements and insurance coverages according to requirements and instructions contained herein.
- M. The Worker's Compensation policy shall include the All States Endorsement for construction contracts.
- N. Defense costs must be excluded from the face amount of the General Liability and Auto Liability policies.
- O. Upon request, Contractor shall furnish The City of Sugar Land with certified copies of all insurance policies.
- P. A valid certificate of insurance verifying each of the coverages required above shall be issued directly to the City of Sugar Land within ten (10) business days after contract award and prior to starting any work by the successful contractor's insurance agent of record or insurance company. Also, prior to the start of any work and at the same time that the Certificate of Insurance is issued and sent to the City of Sugar Land, all required endorsements identified in sections A, B, C and D, above shall be sent to the City of Sugar Land. The certificate of insurance and endorsements shall be sent to:

**City of Sugar Land  
Purchasing Office  
P. O. Box 110  
Sugar Land, TX 77487-0110**

**emailed to: [purchasing@sugarlandtx.gov](mailto:purchasing@sugarlandtx.gov)  
Faxed to: 281 275-2741**

**Questions, please contact Todd Reed, Purchasing Manager, City of Sugar Land 281 275-2734**

## INSURANCE REQUIREMENTS-PROJECT SPECIFIC

**City Staff shall determine the appropriate level of risk and assign the insurance requirements based on that risk. All**

**Insurance Documents will be reviewed by Purchasing and Risk.**

Items marked "X" are required to be provided if award is made to your firm.

### **Coverages Required & Limits (Figures Denote Minimums)**

☒ Workers' Compensation Statutory limits, State of TX.

☒ Employers' Liability \$500,000 per employee per disease / \$500,000 per employee per accident / \$500,000 by disease aggregate

☒ Commercial General Liability:

|                       | <input type="checkbox"/> Very High/High Risk | <input checked="" type="checkbox"/> Medium Risk | <input type="checkbox"/> Low Risk |
|-----------------------|----------------------------------------------|-------------------------------------------------|-----------------------------------|
| Each Occurrence       | \$1,000,000                                  | \$500,000                                       | \$300,000                         |
| Fire Damage           | \$300,000                                    | \$100,000                                       | \$100,000                         |
| Personal & ADV Injury | \$1,000,000                                  | \$1,000,000                                     | \$600,000                         |
| General Aggregate     | \$2,000,000                                  | \$1,000,000                                     | \$600,000                         |
| Products/Compl Op     | \$2,000,000                                  | \$500,000                                       | \$300,000                         |
| XCU                   | \$2,000,000                                  | \$500,000                                       | \$300,000                         |

☒ Automobile Liability: (Owned, Non-Owned, Hired and Injury & Property coverage for all)

| <input type="checkbox"/> Very High/ High Risk | <input checked="" type="checkbox"/> Medium Risk | <input type="checkbox"/> Low Risk |
|-----------------------------------------------|-------------------------------------------------|-----------------------------------|
| Combined Single Limits                        | Combined Single Limits                          | Combined Single Limits            |
| \$1,000,000 Bodily                            | \$500,000 Bodily                                | \$300,000 Bodily                  |

☐ Garage Liability for BI & PD

\$1,000,000 each accident for Auto, \$1,000,000 each accident Non-Auto

\$2,000,000 General Aggregate

☐ Garage Keepers Coverage (for Auto Body & Repair Shops)

\$500,000 any one unit/any loss and \$200,000 for contents

☐ Umbrella each-occurrence with respect to primary Commercial General Liability, Automobile Liability, and Employers

Liability policies at minimum limits as follows:

Contract value less than \$1,000,000: not required

Contract value between \$1,000,000 and \$5,000,000: **\$4,000,000 is required**

Contract value between \$5,000,000 and \$10,000,000: **\$9,000,000 is required**

Contract value between \$10,000,000 and \$15,000,000: **\$15,000,000 is required**

Contract value above \$15,000,000: **\$20,000,000 is required**

Excess coverage over \$10,000,000 can be provided on "following form" type to the underlying coverages to the extent of liability coverage as determined by the City.

☒ Professional Liability, including, but not limited to services for Accountant, Appraiser, Architecture, Consultant, Engineering, Insurance Broker, Legal, Medical, Surveying, construction/renovation contracts for engineers, architects, constructions managers, including design/build Contractors.

Minimum limits of \$1,000,000 per claim/aggregate

This coverage must be maintained for at least two (2) years after the project is completed.

☐ Builder's Risk (if project entails vertical construction, including but not limited to bridges and tunnels or as determined by the City of

Sugar Land) Limit is 100% of insurable value, replacement cost basis

☐ Pollution Liability for property damage, bodily injury and clean up (if project entails possible contamination of air, soil or ground or as determined by the City of Sugar Land)

☐ Other Insurance Required: \_\_\_\_\_

NOTE: The nature/size of a contract/agreement may necessitate higher limits than shown above. These requirements are only meant as a guide, but in any event, should cover most situations. Check with Purchasing & Risk Management if you need assistance or need additional information.



**PURCHASING OFFICE**

**REQUEST FOR QUALIFICATIONS**

**INTEGRATED WATER RESOURCES PLAN**

**RFQ 2017-14**

**I. DEFINITIONS**

*Contract* means the Contract included with this RFQ.

*Project* means Integrated Water Resource Plan

*Respondent* means the person or entity that submits a Submittal in response to this RFQ.

*Submittal* means the documents required to be submitted under Section II (a).

**II. SUBMITTAL**

**Documents must be submitted as follows:**

- (a) At least one (1) original, five (5) copies, and one (1) electronic copy (in PDF format) on CD or flash drive of the following documents must be submitted:

Qualification Statement, including:

- (1) Respondent Certification and Addenda Acknowledgment;
- (2) Respondent Information Form;
- (3) Respondent Customer/Client References Form;
- (4) Conflict of Interest Questionnaire (CIQ Form);
- (5) Certificate Regarding Debarment;

- (b) The Submittal must be completed in ink or be typewritten.

- (c) The Respondent Customer/Client References Form must include three references for which the Respondent has performed like services. The references must include the name of the business, a contact person, and telephone number and mailing address.

- (d) The Submittal must be submitted in a sealed envelope or container that is marked on the outside of the envelope or container with the Name of the Project and Project No.

shown above, the Respondent's name and mailing address, and the date of the submittal deadline.

- (e) The Submittal may be hand-delivered to the City of Sugar Land, City Secretary Office, 2700 Town Center Blvd. North, Sugar Land, Texas 77479 or mailed to the City of Sugar Land, City Secretary Office, P.O. Box 110, Sugar Land, Texas 77487. **FACSIMILE AND E-MAIL TRANSMITTALS WILL NOT BE ACCEPTED.**
- (f) Submittals will be received on or before **2:00 (p.m.) on Thursday, July 6, 2017.** Submittals received after the submittal date and time will not be considered.

### III. ADDITIONAL INSTRUCTIONS AND INFORMATION

- If a Respondent finds a discrepancy in our omission from, or has a question about the meaning of, this RFQ or other related document, the Respondent should immediately notify the Purchasing Office at the E-mail address listed below or at [www.publicpurchase.com](http://www.publicpurchase.com). Questions regarding this RFQ must be received by the Purchasing Office on or before **3:00 (p.m.) on Tuesday, June 27, 2017.** After the Purchasing Office has been notified of a discrepancy or omission, or has been asked a question, the Purchasing Office will post an amendment or addendum on [www.publicpurchase.com](http://www.publicpurchase.com) for all Respondents to view.
- (b) A Respondent may withdraw a Submittal by giving the Purchasing Office written notice of the withdrawal before the submittal deadline. If a Respondent submits written notice of the withdrawal after the submittal deadline, a Respondent must receive the City's written consent to withdraw a Submittal.
  - (c) Submittals received in response to this RFQ will be reviewed and evaluated by City staff.
  - (d) **THE SELECTED RESPONDENT WILL BE REQUIRED TO ENTER INTO THE CITY OF SUGAR LAND STANDARD CONTRACT AND PROVIDE AND MAINTAIN THE MINIMUM INSURANCE COVERAGES REQUIRED UNDER THE CONTRACT. THE SAMPLE CONTRACT AND INSURANCE REQUIREMENTS ARE INCLUDED AS PART OF THIS REQUEST FOR QUALIFICATION.**
  - (e) Additional documents, amendments, and addendums relating to this RFQ are available at [www.publicpurchase.com](http://www.publicpurchase.com).
  - (f) If you have any questions, please contact:

Jason Poscovsky, CPPB  
Contracts Manager  
Fax: (281) 275-2741  
E-mail: [jposcovsky@sugarlandtx.gov](mailto:jposcovsky@sugarlandtx.gov)

#### IV. MANDATORY CONTRACT PROVISIONS

The City of Sugar Land is soliciting proposals for professional services in compliance with Chapter 2254 of the Texas Government Code. Since the City must comply with certain State laws and City policies, the City uses a Standard Form of Agreement that incorporates required contract provisions that cannot be modified. Submitting a written proposal in response to the City's solicitation is your offer to enter into the City's Standard Form of Agreement without modification of the required contract provisions.

**(a). Payment.** The City's payments under the Contract, including the time of payment and the payment of interest on overdue amounts, are subject to Chapter 2251, Texas Government Code.

**(b). Liability and Indemnity.** Any provision of the Contract is void and unenforceable if it: (1) limits or releases either party from liability that would exist by law in the absence of the provision; (2) creates liability for either party that would not exist by law in the absence of the provision; or (3) waives or limits either party's rights, defenses, remedies, or immunities that would exist by law in the absence of the provision. (Section 5, Article XI, Texas Constitution).

**(c). Confidentiality.** Any provision in the Contract that attempts to prevent the City's disclosure of information subject to public disclosure under federal or Texas law or regulation, or court or administrative decision or ruling, is invalid. *Chapter 552, Texas Government Code*

**(d). Contractual Limitations Period.** Any provision of the Contract that establishes a limitations period that does not run against the City by law or that is shorter than two years is void. (Sections 16.061 and 16.070 of the Texas Civil Practice and Remedies Code)

**(e). Governing Law and Venue.** Texas law governs this Contract and any lawsuit on this Contract must be filed in a court that has jurisdiction in Fort Bend County, Texas.

**(f). Disclosure of Interested Persons for Council-Approved Contracts.** Under Section 2252.908 of the Tex Gov't Code - The Commission has approved a Certificate of Interested Persons form, which must be filled out, signed, notarized and submitted to the City at the time of execution of the Contract/Agreement, along with the certification of filing generated from the Commission's website. The Certificate of Interested Persons form is available on the Commission's website at <https://www.ethics.state.tx.us/tec/1295-Info.htm> and the successful Bidder/Proposer must follow the Commission's filing process adopted pursuant to the statute. The successful contractor's notarized Certificate of Interested Persons and certification of filing will be attached to the Contract/ Agreement.

## V. STATEMENT OF WORK.

### Introduction

#### I. General

The City of Sugar Land is requesting Qualification Statements from engineering firms who can adequately demonstrate they have the resources, experience and qualifications to provide the City with quality Professional Services. The purpose of this solicitation is to select one firm/team to work with the City of Sugar Land to provide engineering services for the Integrated Water Resource Plan. Only firms submitting for this RFQ and meeting qualifications based on the scoring results from the selection committee will be considered for the project.

If your firm would be interested in submitting statements for this RFQ, please submit At least one (1) original, five (5) copies, and one (1) electronic copy (in PDF format) on CD or flash drive on or before 2:00 p.m. Thursday, July 6, 2017. Qualification Statements shall be sent to the City Secretary's office with the following:

Attention To:       City Secretary  
                          City of Sugar Land  
                          2700 Town Center Blvd N.  
                          Sugar Land, Texas 77479

Late statements will not be accepted. Each firm is responsible for insuring responses to this RFQ have been delivered by date, time and location specified.

Any questions related to this RFQ should be directed to Public Purchase [www.publicpurchase.com](http://www.publicpurchase.com), no later than 3:00 p.m. on Tuesday, June 27, 2017. Responses to questions will be posted on Public Purchase [www.publicpurchase.com](http://www.publicpurchase.com), 3:00 p.m. on Thursday, June 29, 2017.

Except for the submission of written questions or in response to requests/inquiries from the City of Sugar Land staff, **firms shall not contact members of the Selection Committee, City Council, P&Z Commissioners, or other City staff with respect to this RFQ or the selection process.**

**Contact with any personnel of the City other than Jason Poscovsky, Contracts Manager, regarding this Request for Qualification may be grounds for elimination from the selection process.**

By submitting a response to this RFQ, each firm unequivocally acknowledges that they have read and fully understand this RFQ, and have asked questions and received satisfactory answers from the City regarding any provisions of this RFQ with regard to which clarification was desired.

The intent of this RFQ is to identify one firm/team as prime provider to assist the City with providing engineering services for the Integrated Water Resource Plan as described below.

## **INTEGRATED WATER RESOURCE PLAN**

The City of Sugar Land (City) recognizes the need to have a clear vision and strategic direction for water supplies to meet the future water demands. Historically, the City met growing water demands through expanded groundwater wells. With the implementation of regulatory restrictions on groundwater withdrawals by the Fort Bend Subsidence District (FBSD) in 2014, the City was required to convert 30% of the City's total demand to alternative, or non-groundwater sources. The City approved the first Groundwater Reduction Plan (GRP) in 2008, which outlined the City's strategies for reducing dependence on groundwater supplies. The City partners with 17 other water providers in the region to achieve compliance with the FBSD regulations. The GRP strategy included securing surface water contracts and construction of the City's Surface Water Treatment Plant. Increased FBSD groundwater restriction requirements are scheduled for 2025, prompting the need for a thorough examination of the City's available alternative water supplies, including surface water rights and contracts for both raw water uses and expansion of the Surface Water Treatment Plant, and expanded reclaimed wastewater effluent use.

The purpose of the Integrated Water Resource Planning is to identify a combination of capital projects, management strategies, and policies that will be both cost-effective and sustainable to meet the future water needs for the City. The Integrated Water Resource Plan will provide a master plan, or roadmap for short and long-term water supply strategies. The objectives of the IWRP are as follows broken into two phases:

### **Phase 1:**

1. Refine the Future Water Needs of the Community: The IWRP's main purpose is to confirm the most economical water source for the City by identifying alternatives and establishing the criteria for when alternatives need to be initiated. Through the Water Master Plan, the City has developed water demands, which will need to be further refined to fully analyze uses and maximize all water supply sources.

### **Phase 2:**

1. Develop a Decision Support Computer Model: This project will provide the City with a computer model that can be actively modified as conditions change. The model will be an interactive tool that allows City staff to modify the variables in the decision matrix.
2. Produce a Plan: The IWRP process will provide a plan for the City's water sources with tangible projects and a timeline for implementation based of necessity. The plan will combine the City's customers' water needs with the most appropriate water source to help secure water supply through the 2040 planning horizon.

The RFQ's will be evaluated using a point system (100) on the following categories. The firms/teams with the highest total scores will be recommended for interviews or contract negotiations. The following items are requested to be placed in order to allow easier review:

**A. Firm - Responsiveness to the Request for Qualifications (25 points)**

1. Background of the firms (15)
2. References (5)
3. Availability and dedication to The City of Sugar Land projects (2)
4. Clarity and brevity of the response and requested information included and thoroughness of response to the requirements (3)

**Work Categories (75 points)**

5. Qualifications of key personnel adequate for requirement (15)  
(resumes can be placed within an appendix)
6. Verifiable relevant experience (20)
7. Understanding of the project (10)
8. Proposed Quality Control/Quality Assurance Program (5)
9. Creativity and thoroughness of proposed approach and/or methodology to providing services (25)

*\* resumes can be placed within an appendix – no page limit*

**B. Disclosure (0 points, mandatory - firm will be rejected if not included)**

1. Must include statement of conflict of interest (Conflict of Interest Questionnaire), and completed debarment form (0).

It is understood that the City reserves the right to accept or reject any and/or all responses to this RFQ as it shall deem to be in the best interest of the City.

All responses submitted become the property of the City of Sugar Land and are subject to the Public Information Act (Texas Government Code Chapter 552). All documentation shall be open for public inspection, except for trade secrets and confidential information so identified by firm as such. All confidential information should be specifically and conspicuously marked as such in red. The City of Sugar Land will follow all requirements and procedures in the Public Information Act when responding to requests for disclosure of documents.

## **II. Project Scope of Work**

The scope of work for the Integrated Water Resource Plan may include, but not be limited to, the following scope items:

### **Phase 1:**

#### **1. Initiate IWRP**

The Respondent will coordinate and schedule a kick-off meeting with City Staff upon receiving the Executed Task Order. The purpose of the meeting will be to:

- Establish the project team members, key points of contact, and roles.
- Establish the primary tasks and production schedule.
- Identify the challenges of developing the IWRP.
- Discuss stakeholders and their involvement to include the Citizen Task Force and Council Task Force.
- Review and refine IWRP objectives.
- Confirm model framework, conceptualization, and software.
- Identify additional sources of information that will be beneficial to developing the IWRP, including the Water Supply Reliability Study and other pertinent documents.
- Identify the critical factors to be incorporated into evaluating options and integrated strategies in the IWRP.

After the kick-off meeting, The Respondent will prepare minutes and incorporate attendee comments.

Deliverables: Meeting agenda and minutes

#### **2. Summarize Existing Conditions and Constraint**

The Respondent will summarize the existing conditions that will be used as the basis to develop the IWRP. The Respondent will use existing information from the City to summarize the following for each service area:

- Existing and future capacities for water, wastewater, reclaimed and raw water systems.
- Likely regulatory constraints to achieving additional capacity from the existing water, wastewater, reclaimed and raw water systems.
- Likely treatment capacity, process, and conveyance constraints to achieving additional capacity from the existing water, wastewater, reclaimed and raw water systems.
- Issues regarding compliance with Fort Bend Subsidence District groundwater regulations and other water supply regulations.

The existing condition is assumed to reflect the City's facilities and operations as of December 2016. As part of this task, The Respondent will begin to develop a project bibliography to gather and confirm existing data sources that will be beneficial to developing the IWRP. The Respondent will develop a list of available existing modeling tools (e.g., hydraulic, groundwater, WAM) and their publication dates (or versions) that will be used to develop inputs into the IWRP decision-support model (DSM) described

below. The initial results of this task will be presented at the kick-off meeting.

**Deliverables:** Technical memorandum summarizing existing conditions and most likely constraints, a list of the modeling tools that will be the basis for the IWRP, and draft bibliography.

3. Refine Future Demand Estimates

The Respondent will refine spatially and temporally distributed water, wastewater, and reclaimed water service estimates at the planned development level. The 2012 Water Master Plan and GIS data files will be provided to the Respondent for this task. The 2012 Water Master Plan includes planning projections for the City of Sugar Land Extra-Territorial Jurisdiction, through approximately 850 planned development polygons. Estimates for the number of equivalent single family connections for each polygon will be provided for each planning horizon. The planned developments will be grouped into the following categories by service area:

- Existing- development has infrastructure and services already in place.
- Future- unknown development in the service area that is likely to be served by the City.

Monthly water, wastewater, reclaimed and raw water service estimates will be developed using the metering data and monthly operating reports from October 2010 to October 2016. All future planned development categories will be assigned water, wastewater, reclaimed and raw water service using existing developments that are considered to be representative of the future developments. The monthly water demands for each development will be broken into indoor and outdoor components. If possible, the water demands will be further separated into residential indoor, residential outdoor, all other indoor, and all other outdoor. The existing water, wastewater, reclaimed and raw water services to each planned development will be totalized, averaged, and normalized by connection, population, and equivalent residential connection. The population estimates will be based on growth projections provided by the City. Existing and future service areas and planned development information will be provided by the City in a GIS compatible format. The City will also provide historical pumpage data for the GRP wells to be incorporated into the demand projections. The effort includes an on-site meeting with City staff to discuss the data being used in the service estimates.

**Deliverable:** GIS coverages with monthly water, wastewater, reclaimed and raw water service estimates statistical analysis, attributed by service area, planned development, population, and statistical analysis.

4. Perform Gap Analysis

Using the results of the previous tasks, the Respondent will characterize the limitations and potential opportunities for serving the City's existing and future water demands. The goal of this effort is to start integrating the information from previous efforts and conceptualize the system components and options that will need to be programmed into the IWRP DSM. The gap analysis will be performed using GIS to generate snapshots of the City GRP's services needs for 2018, 2025, and 2040, which represents full buildout. The gap analysis will include the following elements:

- Overlay existing facilities on the spatially and temporally distributed utility services organized by planning category.
- Incorporate planned improvements to utility facilities based on the timing and capacities recommended in previous master plans and studies.
- Identify potential gaps and limitations in the timing and capacity for meeting utility service needs for each snapshot.
- Identify uncertainties or knowledge gaps in evaluating potential options to be considered in the system integration analysis and recommend ways to develop additional information to reduce uncertainty and improve the IWRP analysis.
- Assist City staff in engaging the Citizen Task Force and other stakeholders that will be critical to evaluating options in the IWRP.
- Propose up to 30 options that could be implemented to fill gaps in timing and capacity.
- Review critical factors to be incorporated into evaluating options and integrated strategies in the IWRP.
- Assist Staff to further refine the objectives and performance measure criteria to be used in evaluating the option combinations (alternatives).
- Combination of up to 10 options (alternatives) to evaluate.
- Propose possible "what-if" and sensitivity tests to be considered.

The Respondent will summarize the results of this task a draft technical memorandum. After comments are received from the City, the Respondent will prepare a final technical memorandum that summarizes the gap analysis and finalizes the options, evaluation criteria, and combinations that will be used in developing the IWRP DSM.

Deliverable: Draft and final technical memorandum

## **Phase 2:**

### **5. Develop IWRP Decision Support Model (DSM)**

The Respondent will develop the IWRP DSM in several steps.

**Develop Input Response Functions-** Response functions will be developed and programmed into the IWRP DSM for the existing systems and the options to be evaluated as part of the IWRP. The development of response functions will be specific to each model element. For some model elements, existing models will be applied to develop a relation between independent and dependent variables that will be used by the model simulation. For other elements, the response function will be an explicit series or matrix of outcomes for a given condition that are derived from statistical analyses. The following response functions are expected to be developed and programmed into the IWRP DSM:

- Customer water demands and wastewater collection service, to include GRP members.
- Indoor conservation programs.
- Outdoor conservation programs.
- Reclaimed water offsets and substitutions.

- Raw water offsets and substitutions.
- Well field operations.
- Additional surface water supplies.
- Irrigation and amenity lake filling offsets using surface water.
- Low-impact development.
- Localized storm water harvesting.
- Existing and proposed storage facilities
- Existing and proposed treatment plant facilities.
- Existing and proposed conveyance systems.
- Regulatory constraints.
- Capital costs.
- Operations and variable costs.

The Respondent will document the development of each response function, including summarizing the process used, the source of information, and the modeling inputs and outputs as applicable. The documentation for the unit response functions programmed into the model will be included in the model documentation technical memorandum.

**Program Model** - The IWRP DSM is expected to be built using STELLA or a comparable program. The model will tie in the water, wastewater, reclaimed and to some extent storm water systems. It will represent demand areas, treatment plants, major conveyance and distribution facilities (but not to the extent of a detailed hydraulic model), and other major facilities crucial to understanding the flow of water, wastewater, reclaimed and raw water. The model will also include hydrologic features such as the groundwater aquifer, surface water in Oyster Creek, storage, rainfall patterns, and basic storm water flows. The model will use historical hydrologies to simulate variations in supply and will mimic how water demands may vary to those same hydrologic conditions. The City has hired Carollo Engineers to perform a Water Supply Reliability Study and the IWRP DSM model will incorporate the updated WAM models and groundwater models from that study. The model will also simulate economic performance such as lifecycle costs and levelized costs (cost divided by water provided) as well as receiving water quality. The model will be programmed with user management panels so that various options can be combined into alternatives and then simulated on a monthly basis to determine performance. Basic output graphs will be included in the model for real-time simulation. The model will write all output to a standardized MS Excel template, with nicely formatted tables and graphs pre-made based on client specifications. The model will also have built-in sensitivity analysis so that alternatives can be tested against uncertainties such as varying demand levels, regulatory restrictions, or extreme climate variability.

**Build Initial IWRP DSM-** When Task 4 is complete; the Respondent will initiate building the basic components of the IWRP DSM. The base model will be used to demonstrate how the completed model will be programmed and how additional programming elements will be added. The base model will be demonstrated at the workshop described below. During the demonstration, the Respondent will receive and document feedback from the City.

**Test the Model-** As the model is being constructed, numerical checks will be forced to occur to conserve mass in the model. Mass balance is a technique that checks to make sure that all waters flowing into the model must flow out. That is, supplies that enter the system must either be consumed/ returned to the wastewater system or lost (based on a factor for unaccounted/non-revenue water). In addition to the mass balance checks, the model will be used to backcast certain real events to check its reasonableness in simulating water resource operations. A backcast year will be selected, and its historical conditions will be simulated by the model and then compared with actual conditions for verification. Finally, all programming will undergo QA/QC by a senior modeler not directly working on the project.

**Document the Development Process-**When the model development is complete, the Respondent will prepare a draft technical memorandum that summarizes the model development and documents the assumptions and programming elements specific to the City of Sugar Land IWRP DSM. The memorandum will be prepared from the perspective that the City has staff familiar with the software environment and that step-by-step instructions on how to use the modeling software are not required. After receiving comments from the City, the team will finalize the technical memorandum.

The effort is based on the following model scale and level of detail assumptions:

- Time step -monthly.
- Simulation period- 2018 to 2040.
- Water demands and wastewater collection- monthly with consideration of peaking factors.
- Spatial scale- aggregated planned development level.
- Conveyance systems- transmission level (facility to aggregated development served).
- Facility systems- rated capacity of total plant (not specific to unit processes).
- Storage systems- monthly with consideration for peaking factors.
- Cost functions- order of magnitude.

Deliverables: Draft and final model development technical memorandum.

6. Evaluate and Test Alternatives

The evaluation and testing will be performed using the following process.

**First Pass Simulations - Screening**

- Evaluate the 10 alternatives identified in Task 4.
- Rank alternatives based on the selected evaluation criteria.
- Screen out alternatives and re-combine options to be more effective at meeting evaluation criteria.
- Coordinate the results with COSL.

**Second Pass Simulations -Alternative Selection**

- Evaluate five re-configured alternatives.
- Rank alternatives based on the selected evaluation criteria.

- Select the top three alternatives and re-combine options based on results and modeling experience.
- Coordinate the results with COSL.

**Third Pass Simulations -Testing**

- Finalize "what-if" and sensitivity tests (up to five) to be evaluated.
- Conduct "what-if" and sensitivity tests on the top three alternatives.
- Adjust alternatives to meet evaluation criteria.
- Coordinate the results with COSL.

**Final Pass Simulations- IWRP Strategy Selection**

- Develop the recommended IWRP strategy using adaptive management in which risk triggers are established along with possible actions for each trigger.
- Report the results to COSL.

Given the dynamic nature of the model and evaluation process and the need to get COSL feedback in a timely manner, the effort includes up to five web based teleconference meetings during evaluation and testing. Decisions and recommendations made during the teleconferences will be documented in writing through e-mail or similar correspondence. A technical memorandum will be prepared to document the results of the evaluation and testing process when this task is complete. At the end of this task, the Respondent will present the results of the modeling at a workshop at the final stakeholder workshop described in Task 7. The workshop will include a review of the results and the model documentation. The Respondent will prepare an agenda for the workshop. The Respondent will distribute workshop minutes and incorporate attendee comments.

Deliverable: Draft and final technical memorandum and workshop agenda and minutes.

7. Conduct Workshop to Review Alternatives and DSM Model

The Respondent will be available to assist Staff in presenting the IWRP model and potential alternatives to the Executive Team, Council Task Force and Citizen Task Force. The intent of the two stakeholder workshops is to provide information about the IWRP process and obtain feedback during the meeting. The Respondent does not expect stakeholders to be involved with the evaluation criteria or IWRP decision making process. The workshops will be scheduled to coincide with the production of the IWRP DSM. The team will prepare an agenda and presentation to the stakeholders. The Respondent will distribute workshop minutes and incorporate attendee comments for both meetings.

Deliverable: Workshop agendas and minutes.

8. Develop IWRP Strategy and Prepare Report

The Respondent will use the results of the workshops and previous tasks to prepare a final report that will summarize the recommended IWRP strategy and provide a road map for COSL to implement short-term and long-term water supply solutions. The technical memorandums developed as part of previous tasks will be incorporated into the final

report body and appendices. The final report will include electronic copies of the information sources and reports referenced in the report bibliography used to develop the IWRP. GIS coverages and files, the final IWRP model, and documentation developed as part of the IWRP will be transferred to COSL in an agreed-on format and transfer protocol. The effort includes two draft reviews before finalization. The first review draft will be provided to COSL for comments and changes.

Deliverable: First draft of final report in electronic format (pdf) and three hard copies. Second draft a final report in electronic format (pdf) and 10 hard copies, final IWRP model files, and final GIS coverages and files.

9. Additional Services

Unanticipated effort may be necessary as the project is completed. This task provides an allowance to cover unanticipated effort. No effort will be used performed under this task without an executed Task Order Amendment.

### **III. Selection**

This solicitation will be the only method of submitting qualification statements for the project listed in this RFQ request. Firms will be pre-qualified based on submittals and the evaluation criteria stated herein. When the City determines project is ready to move forward, the Selection Committee will determine which firm or team is the most qualified for the project.

Some or all of the pre-qualified firms considered for project selection may, at the sole discretion of the City of Sugar Land, be required to appear for oral presentations. The oral presentations, if required, shall be conducted so as to solicit information to enable the committee to evaluate the capability of the applicable firms to provide the project specific services. The City of Sugar Land will notify the firms of the schedule, order and procedure for the presentation, including the content, time limits, use of handouts or visual aids, etc. The oral presentations shall be scored by the Selection Committee. Notwithstanding the foregoing, The City of Sugar Land emphasizes that it may elect to forego oral presentations for this project. Consequently, all responses shall be comprehensive and clear on their face, and no firm should rely upon the opportunity to present additional or clarifying information at a later time.

Upon conclusion of the project selection process, The City of Sugar Land will attempt to negotiate a contract for the provision of services with the most qualified firm. If a satisfactory contract cannot be reached, negotiations will end with that firm and negotiations will begin with the second most qualified firm, and so on according to the provisions of the Chapter 2254 of the Texas Government Code. The City of Sugar Land City Council will approve the final selection and the proposed contract.

#### **IV. Qualifications Statements**

Response to this RFQ should be limited to the following 8 ½"x11" page limitations (single sided only and resumes not included in the page limitations) and format in order to simplify evaluation. Majority of sheets should be 8 ½"x11" in size, with allowable 11"x17" size sheets for maps (single-sided only) counting as one (1) page. Title page, cover letter, and section dividers do not count in the page limitations. Minimum font type or font size on graphics and charts shall be 10 point; type size for text shall be 12 point. Each section shall be clearly identified and tabbed.

##### **A. Firm**

1. Executive Summary to include name, address, and telephone number of the firm submitting the proposal, background of the firm and a summary of the firm's interest in this service, and the name of one or more individuals authorized to represent the consultant in its dealings on a contractual basis (1 page maximum).
2. Table of Contents (1 page).
3. References to include firm's client contact person, address, e-mail address, and phone number. A minimum of three (3) references shall be provided (1 page maximum).

##### **B. General**

1. A statement concerning the firm's ability to comply with a dedicated and accelerated schedule upon direction of the City of Sugar Land (1 page maximum).
2. A description of what information will be required during negotiations to finalize the contract with your firm (1 page).

##### **C. Work Categories**

1. For the project, respond to the following items:
  - a. Names and qualifications of principals of the firm who will participate and their individual responsibilities, particularly the proposed Project Manager. An organization chart shall also be included and resumes of key personnel (5 pages maximum – excluding resumes).
  - b. Verifiable experience on a similar size and complexity of projects (5 pages).
  - c. A summary statement identifying your understanding of the project services desired and the manner in which coordination and the exchange of information will be assured between all parties (1 page).

- d. A summary of the proposed quality control program and the policies and procedures utilized to assure complete, accurate and quality contract documents (1 page).
- e. A narrative outline describing the approach and/or methodology to be taken by your firm to represent the interest of The City of Sugar Land during this project. (3 pages).

**D. Disclosure**

- 1. Any respondent to this RFQ shall disclose all potential conflicts of interest or representation of any firm that could be involved in the proposed program (1 page maximum).
- 2. The disclosure section of this RFQ must be addressed specifically in your response, even if no conflicts exist. Failure to submit disclosure statement will eliminate your firm from further consideration of the RFQ.

**REQUIRED FORMS**

The following forms must be filled out and turned in with bid in order for submitting vendor to be considered responsive. Failure to include the following forms, signed and dated, may result the bid being rejected.

1. Bidder Certification and Addenda Acknowledgment
2. Bidder Information
3. Bidder Customer/Client References
4. Conflict of Interest Questionnaire (CIQ Form)
5. Certificate Regarding Debarment

| <b>SCHEDULE of KEY EVENTS</b> |                                        |                               |
|-------------------------------|----------------------------------------|-------------------------------|
| <b>NO</b>                     | <b>ACTIVITY</b>                        | <b>DATE -- TIME</b>           |
| 1                             | RFQ Advertised in local paper          | June 14, 2017 & June 21, 2017 |
| 2                             | RFQ Posted to publicpurchase.com       | June 14, 2017                 |
| 3                             | Questions Deadline                     | June 27, 2017 @ 3:00 p.m.     |
| 4                             | Questions Answered and Addendum posted | June 29, 2017 @ 3:00 p.m.     |
| 5                             | Submissions Due                        | July 6, 2017 @ 2:00 p.m.      |

**BID CHECKLIST**

CHECK OFF EACH OF THE FOLLOWING AS THE NECESSARY ACTION IS COMPLETED:

- ☐ 1. THE SUBMISSION HAS BEEN SIGNED AND DATED.
- ☐ 2. ANY PRICE EXTENSIONS AND TOTALS HAVE BEEN CHECKED. N/A
- ☐ 3. ADDENDUM (IF ANY) HAS BEEN SIGNED AND INCLUDED.
- ☐ 4. REFERENCES AND CIQ FORM COMPLETED
- ☐ 5. THE CORRECT NUMBER OF COPIES ENCLOSED
- ☐ 6. THE MAILING ENVELOPE HAS BEEN ADDRESSED TO:

THE CITY OF SUGAR LAND  
CITY SECRETARY OFFICE, 1<sup>ST</sup> FLOOR, ROOM 122  
2700 TOWN CENTER BLVD. NORTH  
SUGAR LAND, TEXAS 77479

- ☐ 7. THE MAILING ENVELOPE HAS BEEN SEALED AND MARKED WITH THE:  
COMPANY NAME, ADDRESS, BID NUMBER, TITLE, AND DUE DATE

**SAMPLE**

**CITY OF SUGAR LAND  
STANDARD CONTRACT FOR  
GENERAL SERVICES  
Over \$50K  
(Rev. 1-4-16)**

**I. Signatures.** By signing below, the parties agree to the terms of this Contract:

**CITY OF SUGAR LAND**

**CONTRACTOR:**

**By:**

**By:**

**Date:**

**Date:**

**Title:**

**Title:**

**Company:**

APPROVED AS TO FORM:

**II. General Information and Terms.**

Contractor's Name and Address:

Description of Services:

Maximum Contract Amount: \$

Effective Date:

Termination Date: See Section III C.

.

### **III. Standard Contractual Provisions.**

A. Contractor's Services. The Contractor will provide to the City the services described in this Contract under the terms and conditions of this Contract.

B. Billing and Payment. The Contractor will bill the City for the services provided at intervals of at least 30 days, except for the final billing. The City will pay the Contractor for the services provided for in this Contract with current revenues available to the City, but all the City's payments to the Contractor, including the time of payment and the payment of interest on overdue amounts, are subject to the provisions of Chapter 2251 of the Government Code. The City is not liable to the Contractor for any taxes which the City is not liable by law, including state and local sales and use taxes (Section 151.309 and Title 3, Texas Tax Code) and federal excise tax (Subtitle D of the Internal Revenue Code). Accordingly, those taxes may not be added to any bill.

C. Termination Provisions.

(1) Unless terminated earlier as allowed by this Contract, this Contract terminates:

(a) On the termination date, if any, specified in the General Information in Part 1, but the obligation of a party to complete a contract requirement pending on the date of termination survives termination; or

(b) If there is no termination date specified in the General Information in Part 1, the Contract terminates when both parties have completed all their respective obligations under the Contract.

(2) The City's city manager may terminate this Contract during its term at any time for any reason by giving written notice to the Contractor not less than five business days prior to the termination date, but the City will pay the Contractor for all services rendered in compliance with this Contract to the date of termination.

(3) If the City's city council does not appropriate funds to make any payment for a fiscal year after the City's fiscal year in which the Contract becomes effective and there are no proceeds available for payment from the sale of bonds or other debt instruments, then the Contract automatically terminates at the beginning of the first day of the successive fiscal year. (Section 5, Article XI, Texas Constitution)

D. Liability and Indemnity. Any provision of the Contract is void and unenforceable if it: (1) limits or releases either party from liability that would exist by law in the absence of the provision; (2) creates liability for either party that would not exist by law in the absence of the provision; or (3) waives or limits either party's rights, defenses, remedies, or immunities that would exist by law in the absence of the provision.

E. Assignment. The Contractor may not assign this Contract without the City's prior written consent.

F. Law Governing and Venue. This Contract is governed by the law of the State of Texas and a lawsuit may only be prosecuted on this Contract in a court of competent jurisdiction located in or having jurisdiction in Fort Bend County, Texas.

G. Entire Contract. This Contract represents the entire Contract between the City and the Contractor and supersedes all prior negotiations, representations, or contracts, either written or oral. This Contract may be amended only by written instrument signed by both parties.

H. Independent Contractor. The Contractor will perform the work under this Contract as an independent contractor and not as an employee of the City. The City has no right to supervise, direct, or control the Contractor or Contractor's officers or employees in the means, methods, or details of the work to be performed by Contractor.

I. Dispute Resolution Procedures. If either party disputes any matter relating to this Contract, the parties agree to try in good faith, before bringing any legal action, to settle the dispute by submitting the matter to mediation before a third party who will be selected by agreement of the parties. The parties will each pay one-half of the mediator's fees.

J. Attorney's Fees. Should either party to this Contract bring suit against the other party for any matter relating to this Contract, neither party will seek or be entitled to an award of attorney's fees or other costs relating to the suit.

K. Severability. If a court finds or rules that any part of this Contract is invalid or unlawful, the remainder of the Contract continues to be binding on the parties.

L. Contractual Limitations Period. Any provision of the Contract that establishes a limitations period that does not run against the City by law or that is shorter than two years is void. (Sections 16.061 and 16.070, Texas Civil Practice and Remedies Code)

M. Conflicting Provisions. If there is a conflict between a provision in the Contractor's Additional Contract Documents and a provision in the remainder of this Contract, the latter controls.

N. Copyright. Any original work (the Work), including any picture, video, music, brochure, writing, trademark, logo or other work created by the Contractor for the use of the City under this Contract is a "work made for hire," as defined by federal copyright law. If the Work is not by law a "work made for hire," the Contractor by execution of this Contract assigns to the City all of its rights to the Work, including the copyright. The City, as the author and owner of the copyright to the Work, may alter, reproduce, distribute, or make any other use of the Work as it deems appropriate.

O. Disclosure of Interested Persons for Council-Approved Contracts. Contracts that require City Council approval, such as contracts that exceed \$50,000, are subject to the requirements of Section 2252.908, Tex Gov't Code. Under the provisions of this statute:

(1) The City may not enter into a contract with a business entity that requires Council approval unless the business entity submits a disclosure of interested persons at the time the business entity submits a signed contract to the City;

(2) A disclosure of interested parties must be submitted on a form prescribed by the Texas Ethics Commission (Commission) that includes:

- (a) A list of each interested party for the contract of which the contractor business entity is aware, an interested party being a person who has a controlling interest in the business entity or who actively participates in facilitating or negotiating the terms of the contract, including a broker, intermediary, adviser, or attorney for the business entity; and
- (b) The signature of the authorized agent of the contracting business entity, acknowledging that the disclosure is made under oath and under penalty of perjury.

The Commission has approved a Certificate of Interested Persons form, which must be filled out, signed and notarized by the Contractor and submitted to the City at the time of execution of this Contract, along with the certification of filing generated from the Commission's website at <https://www.ethics.state.tx.us/tec/1295-Info.htm> . The Certificate of Interested Persons form is available on the Commission's website and the Contractor must follow the Commission's filing process adopted pursuant to the statute.

P. Compliance with Laws. The Contractor must comply with the federal, state, and local laws, rules and regulations applicable to the Project and its services under this Contract

**IV. Additional Terms or Conditions.** None.

**V. Additional Contract Documents.** The following documents attached to this Contract are part of this Contract:

Exhibit A. Contractor's Additional Contract Documents:

- A-1. Certificate of Interested Persons with Certification of Filing
- A-2. (Name of attachment) (date) (pages)

Exhibit B. City's Additional Contract Documents:

- B-1. Requirements for all Insurance Documents (6 pages)
- B-2 (Name of attachment) (date) (pages)

**REQUIREMENTS FOR ALL INSURANCE DOCUMENTS**

The Contractor shall comply with each and every condition contained herein. The Contractor shall provide and maintain the minimum insurance coverage set forth below during the term of its agreement with the City. Any Subcontractor(s) hired by the Contractor shall maintain insurance coverage equal to that required of the Contractor. It is the responsibility of the Contractor to assure compliance with this provision. The City of Sugar Land accepts no responsibility arising from the conduct, or lack of conduct, of the Subcontractor.

**INSTRUCTIONS FOR COMPLETION OF INSURANCE DOCUMENT**

With reference to the foregoing insurance requirements, Contractor shall specifically endorse applicable insurance policies as follows:

- A. The City of Sugar Land shall be named as an additional insured with respect to General Liability and Automobile Liability on a separate endorsement
- B. A waiver of subrogation in favor of The City of Sugar Land shall be contained in the Workers Compensation and all liability policies and must be provided on a separate endorsement.
- C. All insurance policies shall be endorsed to the effect that The City of Sugar Land will receive at least thirty (30) days' written notice prior to cancellation or non-renewal of the insurance.
- D. All insurance policies, which name The City of Sugar Land as an additional insured, must be endorsed to read as primary and non-contributory coverage regardless of the application of other insurance.
- E. Chapter 1811 of the Texas Insurance Code, Senate Bill 425 82(R) of 2011, states that the above endorsements cannot be on the certificate of insurance. Separate endorsements must be provided for each of the above.
- F. All insurance policies shall be endorsed to require the insurer to immediately notify The City of Sugar Land of any material change in the insurance coverage.
- G. All liability policies shall contain no cross liability exclusions or insured versus insured restrictions.
- H. Required limits may be satisfied by any combination of primary and umbrella liability insurances.
- I. Contractor may maintain reasonable and customary deductibles, subject to approval by The City of Sugar Land.
- J. Insurance must be purchased from insurers having a minimum AmBest rating of B+.
- K. All insurance must be written on forms filed with and approved by the Texas Department of Insurance. (ACORD 25 2010/05) Coverage must be written on an occurrence form.
- L. Contractual Liability must be maintained covering the Contractors obligations contained in the contract. Certificates of Insurance shall be prepared and executed by the insurance company or its authorized agent and shall contain provisions representing and warranting all endorsements and insurance coverages according to requirements and instructions contained herein.
- M. Upon request, Contractor shall furnish The City of Sugar Land with certified copies of all insurance policies.
- N. A valid certificate of insurance verifying each of the coverages required above shall be issued directly to the City of Sugar Land within ten (10) business days after contract award and prior to starting any work by the successful contractor's insurance agent of record or insurance company. Also, prior to the start of any work and at the same time that the Certificate of Insurance is issued and sent to the City of Sugar Land, all required endorsements identified in sections A, B, C and D, above shall be sent to the City of Sugar Land. The certificate of insurance and endorsements shall be sent to:

City of Sugar Land  
Purchasing Office  
P. O. Box 110  
Sugar Land, TX 77487-0110

emailed to: [purchasing@sugarlandtx.gov](mailto:purchasing@sugarlandtx.gov)  
Faxed to: 281 275-2741

Questions, please contact Todd Reed, Purchasing Manager, City of Sugar Land 281 275-2734



# CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)

01/01/1900

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

**IMPORTANT:** If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

| <b>PRODUCER</b><br>ABC Insurance Agency<br>555 Main Street<br>Tampa, FL 33333-0000 |        | <b>CONTACT</b><br>NAME:<br>PHONE (A/C, No, Ext):<br>FAX (A/C, No):<br>E-MAIL:<br>ADDRESS:                                                                                                                                                                                                                                                                                                                                                                                                                                             |  |                               |        |                               |       |                               |       |                               |       |                               |       |                               |       |                               |       |
|------------------------------------------------------------------------------------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-------------------------------|--------|-------------------------------|-------|-------------------------------|-------|-------------------------------|-------|-------------------------------|-------|-------------------------------|-------|-------------------------------|-------|
| <b>INSURED</b><br>XYZ Company<br>123 Apple Street<br>Tampa, FL 22222-0000          |        | <table border="1"> <thead> <tr> <th>INSURER(S) AFFORDING COVERAGE</th> <th>NAIC #</th> </tr> </thead> <tbody> <tr> <td>INSURER A : Insurance Carrier</td> <td>00000</td> </tr> <tr> <td>INSURER B : Insurance Carrier</td> <td>00000</td> </tr> <tr> <td>INSURER C : Insurance Carrier</td> <td>00000</td> </tr> <tr> <td>INSURER D : Insurance Carrier</td> <td>00000</td> </tr> <tr> <td>INSURER E : Insurance Carrier</td> <td>00000</td> </tr> <tr> <td>INSURER F : Insurance Carrier</td> <td>00000</td> </tr> </tbody> </table> |  | INSURER(S) AFFORDING COVERAGE | NAIC # | INSURER A : Insurance Carrier | 00000 | INSURER B : Insurance Carrier | 00000 | INSURER C : Insurance Carrier | 00000 | INSURER D : Insurance Carrier | 00000 | INSURER E : Insurance Carrier | 00000 | INSURER F : Insurance Carrier | 00000 |
| INSURER(S) AFFORDING COVERAGE                                                      | NAIC # |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |  |                               |        |                               |       |                               |       |                               |       |                               |       |                               |       |                               |       |
| INSURER A : Insurance Carrier                                                      | 00000  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |  |                               |        |                               |       |                               |       |                               |       |                               |       |                               |       |                               |       |
| INSURER B : Insurance Carrier                                                      | 00000  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |  |                               |        |                               |       |                               |       |                               |       |                               |       |                               |       |                               |       |
| INSURER C : Insurance Carrier                                                      | 00000  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |  |                               |        |                               |       |                               |       |                               |       |                               |       |                               |       |                               |       |
| INSURER D : Insurance Carrier                                                      | 00000  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |  |                               |        |                               |       |                               |       |                               |       |                               |       |                               |       |                               |       |
| INSURER E : Insurance Carrier                                                      | 00000  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |  |                               |        |                               |       |                               |       |                               |       |                               |       |                               |       |                               |       |
| INSURER F : Insurance Carrier                                                      | 00000  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |  |                               |        |                               |       |                               |       |                               |       |                               |       |                               |       |                               |       |

## COVERAGES

## CERTIFICATE NUMBER:

## REVISION NUMBER:

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

| INSR LTR | TYPE OF INSURANCE                                                                                                                                                                                                                                                                                                                                       | ADDL SUBR INSR WVD | POLICY NUMBER | POLICY EFF (MM/DD/YYYY) | POLICY EXP (MM/DD/YYYY) | LIMITS                                                                                                                                                                                                                                         |
|----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|---------------|-------------------------|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| A        | <input checked="" type="checkbox"/> GENERAL LIABILITY<br><input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY<br><input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR<br>GEN'L AGGREGATE LIMIT APPLIES PER:<br><input type="checkbox"/> POLICY <input type="checkbox"/> PROJECT <input type="checkbox"/> LOCATION | Y Y                | X123456       | 01/01/1900              | 01/01/1900              | EACH OCCURRENCE \$ 1,000,000<br>DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 100,000<br>MED EXP (Any one person) \$ 5,000<br>PERSONAL & ADV INJURY \$ 1,000,000<br>GENERAL AGGREGATE \$ 2,000,000<br>PRODUCTS - COMP/OP AGG \$ 1,000,000<br>\$ |
| B        | <input checked="" type="checkbox"/> AUTOMOBILE LIABILITY<br><input checked="" type="checkbox"/> ANY AUTO<br><input type="checkbox"/> ALL OWNED AUTOS<br><input type="checkbox"/> HIRED AUTOS<br><input type="checkbox"/> SCHEDULED AUTOS<br><input type="checkbox"/> NON-OWN AUTOS                                                                      | Y Y                | 123456789     | 01/01/1900              | 01/01/1900              | COMBINED SINGLE LIMIT (Ea accident) \$ 1,000,000<br>BODILY INJURY (Per person) \$<br>BODILY INJURY (Per accident) \$<br>PROPERTY DAMAGE (Per accident) \$<br>\$                                                                                |
| C        | <input checked="" type="checkbox"/> UMBRELLA LIAB<br><input checked="" type="checkbox"/> EXCESS LIAB<br><input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR<br>DED RETENTION \$                                                                                                                                              | Y Y                |               |                         |                         | EACH OCCURRENCE \$<br>AGGREGATE \$<br>\$                                                                                                                                                                                                       |
| D        | <b>WORKERS COMPENSATION AND EMPLOYERS' LIABILITY</b><br>ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICE/MEMBER EXCLUDED? (Mandatory in NH)<br>If yes, describe under DESCRIPTION OF OPERATIONS below                                                                                                                                                            | Y/N N/A Y          | 01234         | 01/01/1900              | 01/01/1900              | <input checked="" type="checkbox"/> WC STATUTORY LIMITS<br>E.L. EACH ACCIDENT \$ 500,000<br>E.L. DISEASE - EA EMPLOYEE \$ 500,000<br>E.L. DISEASE - POLICY LIMIT \$ 500,000                                                                    |
| E        | <b>Builder's Risk</b><br>Professional Services                                                                                                                                                                                                                                                                                                          | Y Y                | 123456        | 01/01/1900              | 01/01/1900              | 100% Insurable Value, replacement cost basis<br>\$1,000,000 each claim / \$1,000,000 aggregate                                                                                                                                                 |

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (Attach ACORD 101, Additional Remarks Schedule, if more space is required)

Effective January 1, 2012 must be compliant with Chapter 1811, Tex. Ins. Code (SB 425 enacted by Texas Legislature 82(R) session in 2011).

## CERTIFICATE HOLDER

## CANCELLATION

|                                                                                                 |                                                                                                                                                                                                                                   |
|-------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| City of Sugar Land<br>P.O. Box 110<br>Sugar Land, TX 77487-0110<br>Attention: Purchasing Office | SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.<br>AUTHORIZED REPRESENTATIVE<br>AUTHORIZED SIGNATURE REQUIRED HERE |
|-------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

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(Instructions for completing and submitting a certificate to the City of Sugar Land)

Complete the certificate of insurance with the information

listed below:

- A) Certificate of Insurance date
- B) Producer (Insurance Agency) Information -complete name, address, telephone information, & email address.
- C) Insured's (Insurance Policy Holder) Information -complete name & address information
- D) Insurer (name/names of insurance company) \*\*(Remember the City requires all insurance companies to be Authorized to do business in the State of Texas and be rated by A.M. Best with a rating of B+ (or better) Class VI (or higher) or otherwise be acceptable to the City if not rated by A. M. Best)
- E) NAIC # (National Association of Insurance Commissioners, a # that is assigned by the State to all insurance companies)
- F) Insurer letter represents which insurance company provides which type of coverage from D
- G) General Liability Insurance Policy - must have an (x) in box. Also, "Occurrence" type policy - must have an (x) in the box (occurrence policy preferred but claims made policy can be accepted with special approval)
- H) This section shall be filled in with "Y" for yes under Additional Insured for all coverages, except for Professional Liability and Workers' Compensation. There shall also be a "Y" for yes under all coverages for subrogation waived.
- I) Automobile Liability Insurance – must be checked for Any Auto, All Owned Autos, Hired Autos
- J) Umbrella Coverage – must be checked in this section and by occurrence whenever it is required by written contract and in accordance with the contract value.
- K) Worker's Compensation and Employers Liability Insurance - information must be completed in this section of the certificate of insurance form (if applicable)
- L) Builder's Risk Policy – for construction projects as designated by the City of Sugar Land.  
Professional Liability Coverage – for professional services if required by the City of Sugar Land.
- M) Insurance Policy #'s
- N) Insurance policy effective dates (always check for current dates)
- O) Insurance Policy limits (**See Insurance Requirements Checklist**)
- P) This section is to list projects, dates of projects, or location of project. Endorsements to the insurance policy(ies) must be provided separately and not in this section. The following endorsements are required by the City of Sugar Land.
  - (1) Adding the City of Sugar Land as an additional insured. The "additional insured" endorsement is not required for professional liability and workers compensation insurance; and
  - (2) Waiver of Subrogation
  - (3) Primary and Non-Contributory
  - (4) Cancellation Notice
- Q) City of Sugar Land's name and address information must be listed in this section
- R) Notice of cancellation, non-renewal, or material change to the insurance policy(ies) must be provided to the City of Sugar Land in accordance with a cancellation notice endorsement to the policy and/or per the policy provisions based on the endorsement adding the City as an additional insured. (Sec. 1811.155, Tex. Ins. Code)
- S) The certificate must be signed by the Authorized Agent in this section of the certificate form.

### INSURANCE REQUIREMENTS INTEGRATED WATER RESOURCES PLAN

Items marked "X" are required to be provided if award is made to your firm.

#### Coverages Required & Limits (Figures Denote Minimums)

|                                        |                                                                                                           |                      |                 |
|----------------------------------------|-----------------------------------------------------------------------------------------------------------|----------------------|-----------------|
| <u>X</u> Workers' Compensation         | Statutory limits, State of TX.                                                                            |                      |                 |
| <u>X</u> Employers' Liability          | \$500,000 per employee per disease / \$500,000 per employee per accident / \$500,000 by disease aggregate |                      |                 |
| <u>X</u> Commercial General Liability: |                                                                                                           |                      |                 |
|                                        | <u>Very High/High Risk</u>                                                                                | <u>X</u> Medium Risk | <u>Low Risk</u> |
| Each Occurrence                        | \$1,000,000                                                                                               | \$500,000            | \$300,000       |
| Fire Damage                            | \$300,000                                                                                                 | \$100,000            | \$100,000       |
| Personal & ADV Injury                  | \$1,000,000                                                                                               | \$1,000,000          | \$600,000       |
| General Aggregate                      | \$2,000,000                                                                                               | \$1,000,000          | \$600,000       |
| Products/Compl Op                      | \$2,000,000                                                                                               | \$500,000            | \$300,000       |
| XCU                                    | \$2,000,000                                                                                               | \$500,000            | \$300,000       |

|                                                                                                 |                             |                        |                        |
|-------------------------------------------------------------------------------------------------|-----------------------------|------------------------|------------------------|
| <u>X</u> Automobile Liability: (Owned, Non-Owned, Hired and Injury & Property coverage for all) |                             |                        |                        |
|                                                                                                 | <u>Very High/ High Risk</u> | <u>X</u> Medium Risk   | <u>Low Risk</u>        |
| Combined Single Limits                                                                          | Combined Single Limits      | Combined Single Limits | Combined Single Limits |
| \$1,000,000 Bodily                                                                              | \$500,000 Bodily            | \$300,000 Bodily       |                        |

- Garage Liability for BI & PD  
 \$1,000,000 each accident for Auto, \$1,000,000 each accident Non-Auto  
 \$2,000,000 General Aggregate
- Garage Keepers Coverage (for Auto Body & Repair Shops)  
 \$500,000 any one unit/any loss and \$200,000 for contents
- Umbrella each-occurrence with respect to primary Commercial General Liability, Automobile Liability, and Employers Liability policies at minimum limits as follows:  
 Contract value less than \$1,000,000: not required  
 Contract value between \$1,000,000 and \$5,000,000: **\$4,000,000 is required**  
 Contract value between \$5,000,000 and \$10,000,000: **\$9,000,000 is required**  
 Contract value between \$10,000,000 and \$15,000,000: **\$15,000,000 is required**  
 Contract value above \$15,000,000: **\$20,000,000 is required**  
 Excess coverage over \$10,000,000 can be provided on "following form" type to the underlying coverages to the extent of liability coverage as determined by the City.
- X Professional Liability, including, but not limited to services for Accountant, Appraiser, Architecture, Consultant, Engineering, Insurance Broker, Legal, Medical, Surveying, construction/renovation contracts for engineers, architects, constructions managers, including design/build Contractors.  
 Minimum limits of \$1,000,000 per claim/aggregate  
 This coverage must be maintained for at least two (2) years after the project is completed.
- Builder's Risk (if project entails vertical construction, including but not limited to bridges and tunnels or as determined by the City of Sugar Land) Limit is 100% of insurable value, replacement cost basis
- Pollution Liability for property damage, bodily injury and clean up (if project entails possible contamination of air, soil or ground or as determined by the City of Sugar Land)
- Other Insurance Required: \_\_\_\_\_

NOTE: The nature/size of a contract/agreement may necessitate higher limits than shown above. These requirements are only meant as a guide, but in any event, should cover most situations. Check with Purchasing & Risk Management if you need assistance or need additional information.

**BIDDER CERTIFICATION AND ADDENDA ACKNOWLEDGEMENT**

By signature affixed, the bidder certifies that neither the bidder nor the firm, corporation, partnership, or institution represented by the bidder, or anyone acting for such firm, corporation, or institution has violated the anti-trust laws of this State, codified in Section 15.01, et seq., Texas Business and Commerce Code, or the Federal antitrust laws, nor communicated directly or indirectly the bid made to any competitor or any other person engaged in such line of business.

Bidder has examined the specifications and has fully informed themselves as to all terms and conditions. Any discrepancies or omissions from the specifications or other documents have been clarified with City representatives and noted on the bid submitted.

Bidder guarantees product offered will meet or exceed specifications identified in this RFQ.

**Bidder must initial next to each addendum received in order to verify receipt:**

Addendum #1\_\_\_\_\_ Addendum #2\_\_\_\_\_ Addendum #3\_\_\_\_\_

**Bidder Must Fill in and Sign:**

NAME OF FIRM/COMPANY: \_\_\_\_\_

AGENTS NAME: \_\_\_\_\_

AGENTS TITLE: \_\_\_\_\_

MAILING ADDRESS: \_\_\_\_\_

CITY, STATE, ZIP: \_\_\_\_\_

PHONE & FAX NUMBERS: \_\_\_\_\_

E-MAIL ADDRESS: \_\_\_\_\_

AUTHORIZED SIGNATURE: \_\_\_\_\_

DATE: \_\_\_\_\_

**RESPONDENT INFORMATION FORM**

FULL LEGAL FIRM/COMPANY NAME: \_\_\_\_\_

BUSINESS STREET ADDRESS: \_\_\_\_\_

BUSINESS MAILING ADDRESS: \_\_\_\_\_

BUSINESS TELEPHONE NUMBER: \_\_\_\_\_

BUSINESS FAX NUMBER: \_\_\_\_\_

COUNTY: \_\_\_\_\_ MINORITY OWNED: \_\_\_\_\_ #OF EMPLOYEES \_\_\_\_\_

\*\*\*\*\*

CORPORATION:\_\_\_ PARTNERSHIP:\_\_\_ PROPRIETORSHIP:\_\_\_ L.L.C. \_\_\_ L.L.P. \_\_\_\_\_

YEAR EST. \_\_\_\_\_ NO. OF YEARS IN BUSINESS \_\_\_\_\_ FEDERAL ID NO. \_\_\_\_\_

NATURE OF BUSINESS: \_\_\_\_\_

PRINCIPALS:

NAME: \_\_\_\_\_ TITLE: \_\_\_\_\_

NAME: \_\_\_\_\_ TITLE: \_\_\_\_\_

NAME: \_\_\_\_\_ TITLE: \_\_\_\_\_

\*\*\*\*\*

BANK REFERENCE: \_\_\_\_\_

ADDRESS / CITY / STATE / ZIP : \_\_\_\_\_

PHONE NO. \_\_\_\_\_

**RESPONDENT CUSTOMER / CLIENT REFERENCES FORM**

**1. COMPANY NAME:** \_\_\_\_\_

ADDRESS: \_\_\_\_\_

CITY / STATE / ZIP: \_\_\_\_\_

PHONE NO. \_\_\_\_\_

NAME OF CONTACT: \_\_\_\_\_

EMAIL ADDRESS: \_\_\_\_\_

DESCRIPTION OF PROJECT: \_\_\_\_\_

\_\_\_\_\_

**2. COMPANY NAME:** \_\_\_\_\_

ADDRESS: \_\_\_\_\_

CITY / STATE / ZIP: \_\_\_\_\_

PHONE NO. \_\_\_\_\_

NAME OF CONTACT: \_\_\_\_\_

EMAIL ADDRESS: \_\_\_\_\_

DESCRIPTION OF PROJECT: \_\_\_\_\_

\_\_\_\_\_

**3. COMPANY NAME:** \_\_\_\_\_

ADDRESS: \_\_\_\_\_

CITY / STATE / ZIP: \_\_\_\_\_

PHONE NO. \_\_\_\_\_

NAME OF CONTACT: \_\_\_\_\_

EMAIL ADDRESS: \_\_\_\_\_

DESCRIPTION OF PROJECT: \_\_\_\_\_

\_\_\_\_\_

**4. COMPANY NAME:** \_\_\_\_\_

ADDRESS: \_\_\_\_\_

CITY / STATE / ZIP: \_\_\_\_\_

PHONE NO. \_\_\_\_\_

NAME OF CONTACT: \_\_\_\_\_

EMAIL ADDRESS: \_\_\_\_\_

DESCRIPTION OF PROJECT: \_\_\_\_\_

\_\_\_\_\_

**CITY OF SUGAR LAND****CONTRACTOR INFORMATION**

Name: \_\_\_\_\_

Address: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Principal Contact: \_\_\_\_\_

Tax ID Number: \_\_\_\_\_

Project Number: \_\_\_\_\_

Project Name: \_\_\_\_\_

**Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion**

Indicate in the appropriate box which statement applies to the covered potential contractor:

- ☐ The potential contractor certifies, by submission of this certification, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this contract by any federal department or agency or by the State of Texas.
- ☐ The potential contractor is unable to certify to one or more of the terms in this certification. In this instance, the potential contractor must attach an explanation for each of the above terms to which he is unable to make certification. Attach the explanation(s) to this certification

The undersigned certifies that the potential contractor will not knowingly enter into any subcontract with a person who is excluded, debarred, suspended, declared ineligible or voluntarily excluded from participation in this covered transaction, unless authorized by the city of Sugar Land, Texas. The undersigned further certifies that the potential contractor will include this section regarding exclusion, debarment, suspension, ineligibility and voluntary exclusion without modification in any subcontracts or solicitations for subcontracts.

The undersigned swears that he/she is authorized to legally bind the prospective contractor to the above-described certification and is fully aware that this certification is made under penalty of perjury under the laws of the State of Texas.

\_\_\_\_\_  
Signature/Authorized Certifying Official\_\_\_\_\_  
Typed Name and Title\_\_\_\_\_  
Prospective Contractor/Organization\_\_\_\_\_  
Date Signed\_\_\_\_\_  
State Contractor License No. (if any)

| <b>CONFLICT OF INTEREST QUESTIONNAIRE</b><br><b>For vendor or other person doing business with local governmental entity</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | <b>FORM CIQ</b> |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| <p>This questionnaire reflects changes made to the law by H.B. 1491, 80th Leg., Regular Session.</p> <p>This questionnaire is being filed in accordance with Chapter 176, Local Government Code by a person who has a business relationship as defined by Section 176.001(1-a) with a local governmental entity and the person meets requirements under Section 176.006(a).</p> <p>By law this questionnaire must be filed with the records administrator of the local governmental entity not later than the 7th business day after the date the person becomes aware of facts that require the statement to be filed. See Section 176.006, Local Government Code.</p> <p>A person commits an offense if the person knowingly violates Section 176.006, Local Government Code. An offense under this section is a Class C misdemeanor.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | <b>OFFICE USE ONLY</b><br><br><div style="border: 1px solid black; height: 150px; margin-top: 5px;"></div>                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                 |
| <div style="border: 1px solid black; padding: 2px;">1</div> <b>Name of person who has a business relationship with local governmental entity.</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <div style="border: 1px solid black; padding: 2px;">2</div> <div style="display: flex; align-items: center;"> <input style="width: 20px; height: 20px; margin-right: 5px;" type="checkbox"/> <b>Check this box if you are filing an update to a previously filed questionnaire.</b> </div> <p style="margin-top: 10px;">(The law requires that you file an updated completed questionnaire with the appropriate filing authority not later than the 7th business day after the date the originally filed questionnaire becomes incomplete or inaccurate.)</p> |                 |
| <div style="border: 1px solid black; padding: 2px;">3</div> <b>Name of local government officer with whom filer has employment or business relationship.</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                 |
| <div style="text-align: center; margin-bottom: 10px;"> <div style="border-bottom: 1px solid black; width: 300px; margin: 0 auto;"></div> <p>Name of Officer</p> </div> <p>This section (item 3 including subparts A, B, C &amp; D) must be completed for each officer with whom the filer has an employment or other business relationship as defined by Section 176.001(1-a), Local Government Code. Attach additional pages to this Form CIQ as necessary.</p> <p>A. Is the local government officer named in this section receiving or likely to receive taxable income, other than investment income, from the filer of the questionnaire?</p> <div style="display: flex; justify-content: center; gap: 50px; margin-top: 5px;"> <div><input type="checkbox"/> Yes</div> <div><input type="checkbox"/> No</div> </div> <p>B. Is the filer of the questionnaire receiving or likely to receive taxable income, other than investment income, from or at the direction of the local government officer named in this section AND the taxable income is not received from the local governmental entity?</p> <div style="display: flex; justify-content: center; gap: 50px; margin-top: 5px;"> <div><input type="checkbox"/> Yes</div> <div><input type="checkbox"/> No</div> </div> <p>C. Is the filer of this questionnaire employed by a corporation or other business entity with respect to which the local government officer serves as an officer or director, or holds an ownership of 10 percent or more?</p> <div style="display: flex; justify-content: center; gap: 50px; margin-top: 5px;"> <div><input type="checkbox"/> Yes</div> <div><input type="checkbox"/> No</div> </div> <p>D. Describe each employment or business relationship with the local government officer named in this section.</p> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                 |
| <div style="border: 1px solid black; padding: 2px;">4</div> <div style="display: flex; justify-content: space-between; margin-top: 20px;"> <div style="width: 60%;"> <div style="border-bottom: 1px solid black; width: 100%; margin-bottom: 5px;"></div> <p>Signature of person doing business with the governmental entity</p> </div> <div style="width: 35%;"> <div style="border-bottom: 1px solid black; width: 100%; margin-bottom: 5px;"></div> <p>Date</p> </div> </div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                 |