

## CLMP179 Contracting Documents Index

- PSA General Conditions
  - Draft included
- Exhibit A – Project Description
  - Draft included
- Exhibit B – Non-Discrimination and Non-Retaliation Certification and Appendix A – Title VI Assurances
  - Draft Included
- Attachment 1 – Key Personnel
  - Draft included
- Attachment 2 – Request for Change in Key Personnel
  - Draft included
- Attachment 3 – Scope of Services
  - Draft included
- Attachment 4 – Quality Control Plan
  - Draft included
- Attachment 5 – Resource Allocation Plan
  - Draft included
- Attachment 6 – Maximum Not To Exceed by Tasks Updated
  - Draft included

**PROFESSIONAL SERVICES AGREEMENT BETWEEN CITY OF AUSTIN, TEXAS  
AND  
CDM Smith Inc.  
For  
Consulting Services for Integrated Water Resource Plan**

This AGREEMENT is made by and between City of Austin, Texas (OWNER) and CDM Smith Inc., (CONSULTANT) with its principal place of business at 12357-A Riata Trace Parkway, Suite 210, Austin, Texas 78727.

**SECTION 1 - CONSULTANT'S RESPONSIBILITIES**

**1.0 General**

The CONSULTANT will serve as the OWNER'S professional consultant for the PROJECT as described in Exhibit A – Project Description and will consult and advise the OWNER during the performance of the CONSULTANT's services. The OWNER agrees to compensate the CONSULTANT for those services in accordance with Section 4. CONSULTANT shall report to OWNER's designated PROJECT Manager.

**1.1 Performance of Services**

The CONSULTANT will perform services under this AGREEMENT with the degree of skill and care ordinarily provided by competent professional engineers, architects, or consultants practicing in the same or similar locality and under the same of similar circumstances and as expeditiously as is prudent, considering the ordinary professional skill and care of a competent engineer, architect, or other consultant.

The City is agreeing to contract with the CONSULTANT on the basis of its qualifications and proposal, including its proposed Key Personnel, who are the employees of the Consultant responsible for performing major aspects of the services to be provided under this AGREEMENT, and its designated Subconsultants, the other professional service providers, who will provide specialized services under this AGREEMENT.

1.1.1 The CONSULTANT's Key Personnel, including its Project Manager, and the CONSULTANT's associated Subconsultants to be employed in the performance of the PROJECT professional services shall not be changed except with the Owner's prior written approval, which will not be unreasonably withheld.

1.1.2 The CONSULTANT's Key Personnel are identified in Attachment 1, which may be subsequently modified in approved Request for Changes. Changes to Key Personnel require that the individual being added must be comparably as qualified as the individual being replaced. Request for changes to Key Personnel must be in writing using Attachment 2, Request for Changes in Key Personnel. Approved Requests for Changes to Key Personnel are made a part of this AGREEMENT by reference.

1.1.3 The CONSULTANT's Subconsultants are listed in the MBE/WBE Compliance Plan, which CONSULTANT submitted with its Statement of Qualifications, which may be subsequently modified in approved Request for Changes, in accordance with Subsection 1.1.8, and are made a part of this AGREEMENT by reference.

1.1.4 The CONSULTANT must disclose any potential conflict of interest relating to the CONSULTANT, the CONSULTANT's employees, a Subconsultant or supplier. Failure to disclose any such conflicts may be grounds for termination under Subsection 6.5 of this AGREEMENT.

1.1.5 The person identified as Project Manager by the CONSULTANT in Attachment 1, must be employed by the CONSULTANT.

1.1.6 The CONSULTANT is registered to do business with the OWNER and is responsible for ensuring that all Subconsultants are registered as vendors with the OWNER. All Subconsultants have been registered with the OWNER prior to execution of this AGREEMENT.

1.1.7 The CONSULTANT agrees not to modify any Subconsultant's design after Subconsultant's seal has been affixed, except with the written consent of the Subconsultant. The CONSULTANT is fully responsible for the Subconsultants' performance and obligations under this AGREEMENT.

1.1.8 The CONSULTANT shall obtain OWNER's written approval prior to terminating, adding or substituting subconsultants. In the event that the CONSULTANT proposes to add, substitute, terminate or change an identified "Minority Business Enterprise" (MBE) or a "Women Business Enterprise" (WBE) certified subconsultant firm from its employ on this PROJECT, the CONSULTANT shall comply with the City of Austin MBE/WBE Program, Chapter 2-9B, Austin City Code, and the goals established in the PROJECT solicitation. If the CONSULTANT is unable to substitute a subconsultant firm in compliance with the Austin City Code, the CONSULTANT shall provide OWNER with written documentation of their good faith efforts to acquire the services of a MBE/WBE replacement firm. All requests to change the CONSULTANT's MBE/WBE Compliance Plan must include documentation to support the request.

1.1.9 If the OWNER notifies the CONSULTANT that a member of the CONSULTANT's team, including subconsultants, is incompetent, disorderly, abusive, or disobedient, or has knowingly or repeatedly violated any federal, state, or local law, the CONSULTANT shall immediately remove any such person from performing work on the PROJECT. The OWNER's prior written consent must be obtained before any such person may be reinstated. Replacement of any subconsultant removed from the PROJECT must be in accordance with Subsection 1.1.8. The OWNER may report any breaches of professional codes of ethics to the appropriate licensing board.

1.1.10 The CONSULTANT will attend and, if directed by OWNER, draft complete minutes of each meeting between CONSULTANT, OWNER and other agencies, and submit them to OWNER for approval within seven (7) calendar days after each conference.

1.1.11 The CONSULTANT agrees to attend and make presentations, as specified in Attachment 3 - Scope of Services, as Basic Services, including (i) City Council and Board and Commission meetings, (ii) public meetings, and (iii) internal City of Austin meetings. Any other presentations required by OWNER will be considered Additional Services in accordance with Subsection 1.4 and paid for in accordance with Subsection 4.1.4.

1.1.12 The Scope of Services generally consists of all elements of work, material and equipment required for the professional development of the PROJECT satisfactory to the OWNER and in compliance with all applicable laws, rules, regulations, and ordinances and in accordance with the requirements, policies, and general practices of the OWNER.

1.1.13 If directed by OWNER, Consultant shall update OWNER provided record documents. If the OWNER provided record documents to be updated have been sealed by another Engineer, the CONSULTANT shall notify the Engineer of record of the agreement to update said documents. All updates and revisions to existing sealed documents shall be made as directed by OWNER and in accordance with the Texas Board of Professional Engineers rules.

1.1.14 The CONSULTANT agrees that record documents provided by the OWNER are to be used only for the intended purpose and to meet this contract's obligations. Use of these record documents for any other purpose not explicitly authorized by the OWNER is strictly prohibited.

1.1.15 The CONSULTANT shall prohibit discrimination in employment based upon race, creed, color, religion, national origin, sexual orientation, gender identity, disability, veteran status, sex or age, in compliance with Chapter 5-4-2, Austin City Code. The CONSULTANT has executed the Non-Discrimination and Non-Retaliation Certification and the Appendix A – Title VI Assurance, which are attached hereto as Exhibit B.

1.1.16 Confidentiality: In order to provide the Deliverables to the OWNER, CONSULTANT may require access to certain of the OWNER's and/or its licensors' confidential information (including inventions, employee information, trade secrets, confidential know-how, confidential business information, and other information which the OWNER or its licensors consider confidential) (collectively, "Confidential Information"). Consultant acknowledges and agrees that the Confidential Information is the valuable property of the OWNER and/or its licensor's and any unauthorized use, disclosure, dissemination, or other release of the Confidential Information will substantially injure the OWNER and/or its licensors. The CONSULTANT (including its employees, subcontractors, agents, or representatives) agrees that it will maintain the Confidential Information in strict confidence and shall not disclose, disseminate, copy, divulge, recreate, or otherwise use the Confidential Information without the prior written consent of the OWNER or in a manner not expressly permitted under this Contract, unless the Confidential Information is required to be disclosed by law or an order of any court or other governmental authority with proper jurisdiction, provided the CONSULTANT promptly notifies the OWNER before disclosing such information so as to permit the OWNER reasonable time to seek an appropriate protective order. The CONSULTANT agrees to use protective measures no less stringent than the CONSULTANT uses within its own business to protect its own most valuable information, which protective measures shall under all circumstances be at least reasonable measures to ensure the continued confidentiality of the Confidential Information.

1.1.17 If directed by OWNER, CONSULTANT shall update OWNER provided record documents.

1.1.18 The CONSULTANT agrees that record documents provided by the OWNER are to be used only for the intended purpose and to meet this contract's obligations. Use of these record documents for any other purpose not explicitly authorized by the OWNER is strictly prohibited.

## **1.2 Quality Control Plan (QCP)**

1.2.1 The CONSULTANT agrees to perform quality assurance-quality control reviews in accordance with the CONSULTANT's approved Quality Control Plan (QCP) developed in the format described in Attachment 4. The approved QCP will be incorporated by reference and will include any subsequent revisions approved by OWNER. The QCP is to be submitted to the OWNER for approval within fourteen (14) calendar days after the OWNER's issuance of a Notice to Proceed to the CONSULTANT. In addition to providing the reports required by the QCP, the CONSULTANT agrees to address any QCP comments from the OWNER and provide resolution to the OWNER's satisfaction. In the event the OWNER retains a separate consultant to perform additional QCP services for the OWNER, the CONSULTANT will provide all necessary information to the OWNER, address any comments from the OWNER's consultant, and provide resolution to the OWNER's satisfaction. The CONSULTANT shall include this language in all its subconsultant contracts to ensure subconsultants understand their responsibility for complying with the OWNER's or OWNER's consultant's QCP requirements.



1.2.2 The QCP reviews will be performed by a staff member of the CONSULTANT not involved in day-to-day PROJECT tasks. If the CONSULTANT does not have the internal staff capacity to provide for this independent review, the CONSULTANT must include a QCP subconsultant on the PROJECT team. The person performing the QCP reviews shall certify that the final documents have been drafted in full compliance with the QCP.

1.2.3 The CONSULTANT will perform QCP reviews at intervals during the PROJECT, specified in the QCP, to ensure documents satisfy accepted quality standards and meet the requirements of the PROJECT scope. Based on the findings of the QCP reviews, the CONSULTANT must reconcile the PROJECT scope and budget as needed. Documentation will be included that verifies interdisciplinary coordination has occurred.

1.2.4 Acceptance and/or approval of the CONSULTANT's QCP documentation by the OWNER do not constitute a release of the responsibilities and liability of the CONSULTANT for the accuracy and competency of its QCP reviews and final construction documents.

### **1.3 Basic Services**

The CONSULTANT will perform the basic Scope of Services described in Subsections below. This Scope of Services shall be performed only as authorized by the OWNER.

1.3.1 The CONSULTANT will perform the Basic Services as described in 1.3.1.1 through 1.3.1.11 below, in Exhibit A – Project Description, in the Scope of Services, which is Attachment 3 to the Agreement and in conformance with the approved PROJECT Resource Allocation Plan (RAP) (Attachment 5) and the Maximum Not to Exceed Contract Amounts by Task which is Attachment 6 of this Agreement.

1.3.1.1 Attend and, if requested by OWNER, conduct preliminary conferences and public meetings with OWNER and other interested or involved entities regarding the alternatives for the PROJECT. Report progress to the OWNER relative to approved PROJECT Resource Allocation Plan (RAP) at **monthly** intervals as prescribed by the OWNER.

1.3.1.2 Attend and/or arrange for conferences **monthly** with the OWNER for the purposes of explaining completed task activities and review of RAP for completion of remaining activities.

1.3.1.3 Conduct or otherwise acquire the necessary field surveys, soils tests, geotechnical tests, and additional analysis that, in the opinion of the CONSULTANT, are required for the proper execution of the PROJECT.

1.3.1.4 Identify any special permits or approvals required by regulatory agencies for which the OWNER must apply.

1.3.1.5 Contacts with neighborhood associations, boards, and/or committees related to land acquisition issues, such as land development and feasibility studies.

1.3.1.6 Provide final documents, which incorporate the OWNER's comments, to the OWNER within thirty (30) calendar days from OWNER's written approval. Final documents will not be printed until OWNER authorizes the CONSULTANT to do so.

1.3.1.7 Obtain OWNER'S acceptance of the deliverables and provide one (1) electronic pdf\_set of final documents.

1.3.1.8 For all Tasks services, the CONSULTANT shall submit written progress reports at least monthly. If the required reports are not received within seven (7) calendar days of the end of the month, the OWNER may withhold payment, in accordance with Subsection 4.2.4, until the reports are received.

1.3.1.9 For all Tasks services, the CONSULTANT must comply with the applicable laws, rules, and regulations of City, State and federal governments. The CONSULTANT must request variances or waivers of any such requirements as appropriate.

1.3.1.10 For all Tasks services, the CONSULTANT shall follow the approved schedule and meet all milestone requirements specified in the PROJECT RAP.

1.3.1.11 For all Tasks services, the CONSULTANT shall provide all required Quality Control Plan (QCP) documentation.

## **1.4 Additional Services**

1.4.1 Unless otherwise stated in this AGREEMENT, the Services listed in Subsections below are Additional Services. Additional Services authorized in writing by the OWNER will be paid for by the OWNER as provided in this AGREEMENT, in addition to the compensation for Basic Services. Additional Services authorized by the OWNER in writing will be incorporated in the RAP, and all applicable articles of the Agreement will apply to the Additional Services. If CONSULTANT identifies a need for Additional Services, the CONSULTANT will submit a proposal for those services to the OWNER within fourteen (14) calendar days of identifying the need.

1.4.1.1 Making revisions to documents when such revisions are required by the enactment or revision of codes, laws or regulations subsequent to the preparation of such documents.

1.4.1.2 Providing any other services not otherwise included in this AGREEMENT or not customarily furnished in accordance with generally accepted, regional consulting practices, including but not limited to, the following items:

1.4.1.2.1 Special investigations, including environmental impact studies, that involve detailed consideration of operation, maintenance and overhead expenses; rate schedules; earnings and expense statements; special feasibility studies; appraisals; evaluations; and material audits or inventories required for certifications of force account construction performed by CONTRACTOR or OWNER.

1.4.1.2.2 Legal proceedings, unless the CONSULTANT is a party to the proceedings.

1.4.1.3 Revising documents when such revisions are inconsistent with, or contradict, prior approvals or instructions given to the CONSULTANT by the OWNER.

1.4.2 For all Additional Services, the CONSULTANT shall follow the approved schedule and meet all milestone requirements specified in the RAP.

1.4.3 The following is **not** Additional Services:

1.4.3.1 Minor requests for information by the OWNER that clearly do not require extensive work by the CONSULTANT.

## **SECTION 2 - OWNER'S RESPONSIBILITIES**

### **2.1 The OWNER will:**

- 2.1.1 Provide its requirements for the PROJECT.
- 2.1.2 Designate the OWNER's Project Manager.
- 2.1.3 Assist CONSULTANT by placing at their disposal readily available reports.
- 2.1.4 Assist CONSULTANT by providing access to readily available (i) reports; (ii) property, boundary, easement, right-of-way, topographic and utility surveys; (iii) zoning and deed restrictions; and (iv) other data relevant to the development of the PROJECT.
- 2.1.5 Assist CONSULTANT in gaining entry to public property and private property, only when reasonably necessary, as may be required by the CONSULTANT in the performance of their services under this AGREEMENT.
- 2.1.6 Review and provide written comments on documents and questions presented by the CONSULTANT and render decisions pertaining thereto within seven (7) calendar days. OWNER shall immediately notify CONSULTANT if additional time is needed.
- 2.1.7 Give prompt written notice to the CONSULTANT whenever the OWNER observes or otherwise becomes aware of any defect in the CONSULTANT's work product or services.
- 2.1.8 Direct CONSULTANT, by way of written Supplemental Amendment to this AGREEMENT, to provide any necessary Additional Services beyond those authorized in the approved Scope of Services and PROJECT RAP.

## **SECTION 3 – SCOPE OF SERVICES AND RESOURCE ALLOCATION PLAN (RAP)**

**3.1** The OWNER will issue a request for proposal to the CONSULTANT for the phase(s) of services to be negotiated. The request for proposals will include a description of the requested Scope of Services, a schedule for the submittal of the proposal, and a proposed schedule for the performance of the services. The CONSULTANT will submit its proposal to the OWNER on a timely basis for its review and approval. Approved proposals will be included in Attachment 3, Scope of Services, and become a part of this AGREEMENT.

**3.2** The CONSULTANT agrees to complete the phases of services in accordance with the applicable standard of professional care, the approved proposal(s), the Project's Resource Allocation Plan ("RAP"), which is attached as Attachment 5 to this AGREEMENT and Maximum Not to Exceed by Task, which is attached as Attachment 6. The RAP describes the major tasks to be performed and work products to be delivered by the CONSULTANT, the estimated time to complete the tasks and work products, the amount of compensation allocated for the respective tasks and work products and an estimated allowance for reimbursable expenses. A specific time period will be set for the completion of each phase in the accepted proposal for the applicable services.

### **3.3 Reimbursable Expenses**

Reimbursable Expenses are part of Basic Services and include actual expenditures made by the CONSULTANT and the CONSULTANT's employees and Subconsultants in performing services for the PROJECT for the expenses listed in the following Subsections. CONSULTANT must submit invoices or other similar documentation for Reimbursable Expenses as part of a payment request. The OWNER is a tax exempt entity and will not reimburse the CONSULTANT for any tax expenses. The OWNER will consider exceptions on a case-by-case basis. Reimbursable Expenses are limited to these specific items:

3.3.1 By prior written approval of the OWNER, reasonable transportation and living expenses in connection with out-of-town travel.

3.3.1.1 All travel and lodging expenses in connection with the AGREEMENT for which reimbursement may be claimed will be reviewed against the City's Travel Policy and the current (at the time the travel occurs) the General Services Administration (GSA) Domestic Per Diem Rates (the "GSA Rates") at <http://www.gsa.gov/portal/category/26429>. Amounts in excess of the Travel Policy or GSA Rates will not be paid. All invoices must be accompanied by copies of itemized receipts (e.g. hotel bills, airline tickets).

3.3.1.2 Reimbursement will be made only for expenses actually incurred. Airline fares in excess of coach or economy will not be reimbursed.

3.3.1.3 Mileage charges for rental cars in connection with out-of-town travel may not exceed the amount permitted as a deduction in any year under the Internal Revenue Code or Regulations. Mileage costs for travel within the Austin metropolitan area are to be included in CONSULTANT's overhead rate and not billed separately as a reimbursable expense.

3.3.2 Fees paid for securing approval of authorities having jurisdiction over the PROJECT.

3.3.3 Reproduction expenses for drawings, specifications and all other documents required for bidding, OWNER submittals, and for file copies of CONSULTANT, Contractor, and OWNER and other parties approved by the OWNER.

3.3.4 Expense of renderings, models and mock-ups requested by the OWNER.

3.3.5 Expense of reproducing record drawings for the OWNER on sepia, mylars or plastic film.

3.3.6 Reproduction expense for drawings, specifications and any other documentation to be submitted to utility OWNERS and governmental authorities having jurisdiction over the PROJECT. Interim review plots or drawings for CONSULTANT and Subconsultants are not reimbursable.

**3.4** As the basis for establishing the CONSULTANT's compensation under the approved Scope of Services and RAP, the CONSULTANT will use the OWNER's standard job titles and the CONSULTANT's then current OWNER approved loaded hourly rates for each job title. The CONSULTANT's loaded hourly rate sheet will be attached to each approved fee proposal.

3.4.1 Loaded Hourly Rates: Loaded hourly rates for CONSULTANTS and Subconsultants will be approved by the OWNER on an annual basis. Future rate revisions will only apply to new proposals or assignments and will not impact previously negotiated fee proposals.

3.4.2 Principals may only bill at the hourly rate of Principals when acting in that capacity. Principals acting in the capacity of staff must bill at staff rates. The CONSULTANT shall provide CDM Smith, Inc.  
Professional Services Agreement

documentation with each payment request that clearly indicates how that individual's time is allocated and the justification for that allocation.

### **3.5 Period of Service**

3.5.1 This AGREEMENT will remain in force for that period required to complete the PROJECT (including required extensions thereto) unless discontinued by any of the several provisions contained elsewhere in this AGREEMENT.

3.5.2 CONSULTANT's failure to meet the approved PROJECT RAP may result in the assessment of remedies as described in Section 7 of this AGREEMENT.

### **3.6 Supplemental Amendments**

3.6.1 Before additional services may be performed or additional costs incurred beyond what is specified in the approved Scope of Services and PROJECT RAP, both parties must execute a written Supplemental Amendment. The OWNER is not responsible for actions by the CONSULTANT or any costs incurred by the CONSULTANT relating to additional work prior to the execution of the Supplemental Amendment. Any additional work must be performed within the time period established in the PROJECT RAP.

3.6.1.1 More Time Needed. If the CONSULTANT determines or reasonably anticipates that the PROJECT cannot be completed before the specified completion date, the CONSULTANT shall submit a RAP revision to the OWNER for approval. The OWNER may, at its sole discretion, extend the authorized PROJECT period.

3.6.1.2 Changes in Scope. Changes that would modify the scope of work authorized for the PROJECT must be established by a Supplemental Amendment. If the change in scope affects the schedule or CONSULTANT's fee for the PROJECT, the CONSULTANT shall prepare a revised PROJECT budget and RAP for the OWNER's approval using the CONSULTANT'S then current approved loaded hourly rate sheet.

3.6.2 The OWNER may ask the CONSULTANT to submit a proposal for additional work that is within the defined scope of work under this AGREEMENT. The amount to be paid for the proposed additional services will be a lump sum for each proposal. The CONSULTANT may, without penalty, elect not to submit a proposal. If both parties agree to the proposal for additional work, the parties must execute a written Supplemental Amendment and revise the RAP.

3.7 If the OWNER sustains actual damages as a result of willful or negligent failure of the CONSULTANT to furnish services in compliance with the approved Scope of Services and PROJECT RAP described in this Section 3 and subsequent approved amendments in accordance with Subsection 3.6, the CONSULTANT agrees to compensate the OWNER for the cost of such damages in accordance with Section 7, itemized costs of which will be provided to the CONSULTANT by the OWNER. The OWNER agrees to provide the CONSULTANT written notification of such damages as the cost is being incurred.

3.8 The CONSULTANT is not liable or responsible for OWNER delays or suspensions of services. If the CONSULTANT is delayed through no fault of its own, written time extension requests may be submitted to the OWNER for approval. These requests will be reviewed only if submitted to OWNER at least fourteen (14) calendar days of occurrence unless force majeure conditions exist.

**3.9** If the CONSULTANT fails to meet the approved PROJECT RAP schedule, including subsequently approved amendments, OWNER may elect to invoke remedies outlined in Section 7 of this AGREEMENT.

**3.10** Time required by the OWNER to review and return documents to the CONSULTANT following their submittal during and after each task will be included in the approved PROJECT RAP.

## **SECTION 4 - COMPENSATION**

### **4.1 Basis of Compensation**

**4.1.1 General.** The OWNER will compensate the CONSULTANT for the Scope of Services described in the approved PROJECT RAP, as it may be subsequently amended, in accordance with subsection 4.2, Payment to the Consultant, and the other Terms and Conditions of this AGREEMENT, as follows:

**4.1.1.1** No advance payment will be paid to the CONSULTANT prior to rendering services.

**4.1.1.2** Payments for Basic Services will be made monthly in proportion to services performed within each phase of services, as shown in the PROJECT RAP.

**4.1.1.3** Basic Services of Subconsultants, may be billed a CONSULTANT a multiple of one and five hundredth (1.05) times the amount billed to the CONSULTANT for such services.

**4.1.2 Total Compensation.** The total amount of compensation to be paid the CONSULTANT will not exceed the amount stated in this paragraph without amendment to this AGREEMENT. The total amount of compensation to be paid the Consultant will not exceed XXX Dollars (\$XXXX). (Fill in the amount once negotiations are complete.)

**4.1.3** Compensation for Basic Services for the PROJECT will be determined on a Stipulated Sum fee basis, as shown in the approved Project RAP.

**4.1.3.1** Stipulated Sum for Basic Services, as described in Subsection 1.3, is as follows:

(1) The Stipulated Sum includes all labor, overhead, and profit necessary to perform the requested services. Payments will be made on the basis of the proportion of services performed for each phase.

(2) Phases of services and percentages of the total Basic compensation payable per Task will be included in the approved RAP.

**4.1.4** Compensation for Additional Services, as described in Subsection 1.4, will be determined on a Stipulated Sum fee basis.

**4.1.4.1** For *PROJECT REPRESENTATION BEYOND BASIC SERVICES* as described in Subsection 1.4 of this AGREEMENT, compensation will be made for Additional Services in accordance with the basis for compensation established in the PROJECT RAP.

**4.1.4.2** For *ADDITIONAL SERVICES OF SUBCONSULTANTS*, a multiple of one and five hundredth (1.05) times the amounts billed to the CONSULTANT for such services will be paid.

4.1.5 Principals may only bill at the hourly rate of Principals when acting in that capacity. Principals acting in the capacity of staff must bill at staff rates. The CONSULTANT shall provide documentation with each payment request that clearly indicates how that individual's time is allocated and the justification for that allocation.

#### 4.1.6 *Compensation for Reimbursable Expenses*

4.1.6.1 For *REIMBURSABLE EXPENSES*, as described in Subsection 3.3, may be billed at a multiple of one and five hundredths (1.05) times the amounts expended by the CONSULTANT, the CONSULTANT'S employees and subconsultants in the interest of the PROJECT.

4.1.6.2 The OWNER is a tax-exempt organization as defined by Chapter 11 of the Property Tax Code of Texas. OWNER will furnish CONSULTANT with a Sales Tax Exemption Certification to be issued to suppliers in lieu of tax. If payment of the sales tax is unavoidable in a specific case, the CONSULTANT will be reimbursed by the OWNER for any such costs incurred.

4.1.7 OWNER and the CONSULTANT agree in accordance with the Terms and Conditions of this AGREEMENT that:

4.1.7.1 If OWNER determines the scope of the PROJECT or CONSULTANT's Services are changed materially, compensation will be equitably adjusted through negotiation.

4.1.7.2 If OWNER determines the Services covered by this AGREEMENT have not been completed within the time specified in the PROJECT RAP, through no fault of the CONSULTANT, the amounts of compensation, rates and multiples set forth herein may be adjusted through negotiation.

## 4.2 **Payments to the Consultant**

#### 4.2.1 *Retainage*

The OWNER will withhold 10% retainage from all payments until completion of the work required by the AGREEMENT. The CONSULTANT's invoice shall indicate the amount due, less the retainage. Upon final acceptance of the work, the CONSULTANT shall submit an invoice for the retainage to the OWNER and payment will be made as specified in the AGREEMENT. Payment of the retainage by the OWNER shall constitute nor be deemed a waiver or release by the OWNER of any of its rights and remedies against the CONSULTANT for recovery of amounts improperly invoiced or for defective, incomplete or non-conforming work under the AGREEMENT. City of Austin will release retainage upon completion of each interim deliverable/milestone.

#### 4.2.2 *Payments for Basic Services*

Payments for Basic Services, including Reimbursable Expenses, will be made monthly in accordance with the approved PROJECT RAP on the basis set forth in Subsections 4.1. CONSULTANT shall submit the application for payment using the form supplied by OWNER.

#### 4.2.3 *Payments for Additional Services*

Payments for the CONSULTANT'S Additional Services as defined in Subsection 1.4 may be made no more often than monthly upon presentation by CONSULTANT of an acceptable statement of Additional Services rendered and/or expenses incurred. Each statement must include the from supplied by the OWNER, copies of supporting invoices, time sheets, and any other evidence of expense as required by the OWNER.

#### *4.2.4 Payments Withheld*

The OWNER may withhold, amend, or nullify any request for payment by the CONSULTANT under conditions described below.

4.2.4.1 Failure of the CONSULTANT to follow the approved schedule and meet all task and milestone requirements specified in the PROJECT RAP.

4.2.4.2 OWNER'S receipt of notice that, despite payment to CONSULTANT for services rendered by subconsultants, CONSULTANT has not paid subconsultants for services invoiced to and paid by OWNER within fourteen (14) calendar days of CONSULTANT's receipt of payment from OWNER.

4.2.4.3 Payments for subconsultants' costs when those subconsultants are not included in the approved MBE/WBE compliance plan.

4.2.4.4 Failure of the CONSULTANT to submit timely and complete records of PROJECT conference proceedings as specified in Subsection 1.3.1.1.

4.2.4.5 Failure of the Consultant to submit timely and complete reports containing detailed information as specified in Subsection 1.1.8.

4.2.4.6 Failure to make timely payment to the City of Austin for taxes.

#### *4.2.5 Prompt Payments*

4.2.5.1 The OWNER shall make payment to CONSULTANT of the sum named in a payment application within thirty (30) calendar days after the day on which the OWNER received the mutually acceptable payment application. If the OWNER fails to make such prompt payment, then OWNER will pay CONSULTANT, in addition to the amount owed for the payment application, interest thereon at the rate specified in Government Code, Section 2251.025(b) from date due until fully paid, which shall fully liquidate any injury to CONSULTANT growing out of such delay in payment.

4.2.5.2 The OWNER cannot make a partial payment on an invoice in dispute. The CONSULTANT may resubmit an invoice for the undisputed amount or wait for payment until the dispute has been resolved. The thirty (30) calendar days restarts after the OWNER receives a corrected payment application.

#### *4.2.6 Payment for Project Suspension or Termination*

If the PROJECT is suspended or abandoned in whole or in part for more than three months, the CONSULTANT will be compensated for all services performed prior to receipt of written notice from the OWNER of such suspension or abandonment, together with Reimbursable Expenses then due. If the PROJECT is resumed after being suspended for more than three months, the CONSULTANT'S compensation may be equitably adjusted through negotiation. If the parties cannot agree on an adjustment, OWNER may terminate the AGREEMENT in accordance with Subsection 6.6.



### **4.3      *Payment Applications***

4.3.1      Payment applications must be submitted on a monthly basis.

4.3.2      For PROJECTS that are to be compensated on a Stipulated Sum basis, the CONSULTANT's statement of services must include a brief summary of the progress and completion of tasks to substantiate the percentage of completion of services by Phase during the time period covered by the payment application.

4.3.3      Each payment application from the CONSULTANT will be reviewed to ensure the following information is included and/or is correct. Without this information, the OWNER will not approve the payment. CONSULTANT will be notified, within fourteen (14) calendar days after OWNER's receipt of the payment application, if the payment application is inaccurate and/ or incomplete. An "accurate and complete payment application" means:

4.3.3.1      That the critical figures included on the payment application have been accurately calculated.

4.3.3.2      That the labor rates, reimbursables, fixed fee, subconsultant's rates, overhead and fringe benefits listed on the payment application are consistent with the terms of the AGREEMENT or the most recent Supplemental Amendment.

4.3.3.3      That the charges included on the payment application reflect activity for which the CONSULTANT has actually performed work.

4.3.3.4      That the charges included on the payment application are for work included in the AGREEMENT or an amendment, and the charges are tied directly to tasks outlined in the AGREEMENT.

4.3.3.5      That the CONSULTANT's principals are billing at staff rates when acting in that capacity.

4.3.3.6      That for subconsultant activity, the subconsultant is recognized as an approved sub-consultant in the approved MBE/WBE compliance plan for the AGREEMENT or amendment.

4.3.3.7      That for subconsultant activity, the subconsultant approved for a specific discipline is being used/ paid when the work in that discipline is performed.

4.3.3.8      That for subconsultant or subcontractor activity on federally funded projects is being reimbursed at invoice cost.

4.3.3.9      That any reimbursable expenses claimed are permitted by the terms of the AGREEMENT.

4.3.3.10      That for any allowed reimbursable expense, supporting documentation is attached to the invoice.

4.3.3.11      That the CONSULTANT is billing the City for all work performed by both the CONSULTANT and subconsultants within 45 calendar days of when the work was performed.

4.3.4 The OWNER shall review the first payment application in detail with the CONSULTANT to explain OWNER's payment requirements and to ensure payment application is accurate and complete.

4.3.5 Any costs in excess of approved maximum not-to-exceed contract amount(s) incurred prior to OWNER's written consent will be at CONSULTANT's risk and OWNER will not pay such costs unless such costs were incurred at the OWNER's direction. The OWNER is not required to increase the approved maximum not-to-exceed contract amount(s) established under this AGREEMENT.

## **SECTION 5 - INSURANCE REQUIREMENTS**

**5.1** The CONSULTANT shall carry insurance in the types and amounts indicated below for the duration of the AGREEMENT:

5.1.1 Workers' Compensation and Employers' Liability Insurance coverage with limits consistent with statutory benefits outlined in the Texas Workers' Compensation Act (Section 401) and minimum policy limits for Employers Liability Insurance of \$100,000 bodily injury each accident, \$500,000 bodily injury by disease policy limit and \$100,000 bodily injury by disease each employee. The CONSULTANT's policy must be issued by an insurer licensed or approved to do business in the State of Texas and include these endorsements in favor of the OWNER:

- (1) Waiver of Subrogation, form WC 420304, or equivalent.
- (2) 30 day Notice of Cancellation, form WC 420601, or equivalent.

5.1.2 Commercial General Liability Insurance with a minimum combined bodily injury and property damage per occurrence limit of \$1,000,000 for coverages A & B. The policy must contain the following provisions:

- (1) Blanket contractual liability coverage for liability assumed under this AGREEMENT and all contracts relative to this PROJECT.
- (2) Products/Completed Operations Liability for the duration of the warranty period
- (3) If the project involves digging or drilling, Explosion, Collapse, and Underground (XCU) coverage.
- (4) Independent Contractors coverage.
- (5) OWNER listed as an additional insured, endorsement CG 2010, or equivalent.
- (6) 30 day Notice of Cancellation in favor of the OWNER, endorsement CG 0205, or equivalent.
- (7) Waiver of Transfer Right of Recovery Against Others in favor of the OWNER, endorsement CG 2404, or equivalent.
- (8) Aggregate limits of insurance per project, endorsement CG 2503, or equivalent.

5.1.3 Business Automobile Liability Insurance for all owned, non-owned and hired vehicles (1) with a minimum combined single limit of \$500,000 per accident for bodily injury and property damage; or (2) \$250,000 bodily injury per person, \$500,000 bodily injury per occurrence and at least \$100,000 property damage liability. The policy shall contain the following endorsements in favor of the OWNER:

- (1) Waiver of Subrogation endorsement CA 04444, or equivalent.
- (2) 30 day Notice of Cancellation endorsement CA 0244, or equivalent.
- (3) Additional Insured endorsement CA 2048, or equivalent.

5.1.4 CONSULTANT's Professional Liability Insurance to pay on behalf of the assured all sums which the assured becomes legally obligated to pay as damages by reason of any negligent act, error, or omission committed or alleged to have been committed with respect to plans, analyses, or reports prepared or alleged to have been prepared by the assured. The policy must provide for 30 day notice of cancellation in favor of the OWNER. The minimum limit is **\$1,000,000.00** per claim and in aggregate.

## **5.2 General Requirements**

5.2.1 The CONSULTANT must complete and forward the OWNER'S standard certificate of insurance to the OWNER before the AGREEMENT is executed, as verification of coverage required in Paragraphs 5.1.1 through 5.1.4 above. The CONSULTANT shall not commence services until the required insurance has been obtained and until such insurance has been reviewed by the OWNER's Capital Contracting Office. Approval of insurance by the OWNER does not relieve or decrease the liability of the CONSULTANT hereunder and must not be construed to be a limitation of liability on the part of the CONSULTANT.

5.2.2 Applicable to all insurance policies: If coverage is underwritten on a claims-made basis, the retroactive date must be coincident with or prior to the date of this AGREEMENT and the certificate of insurance must state that the coverage is claims made and the retroactive date. The CONSULTANT shall maintain continuous coverage for the duration of this AGREEMENT and for not less than twenty-four (24) months following substantial completion of the PROJECT. Coverage, including any renewals, must have the same retroactive date as the original policy applicable to the PROJECT. The CONSULTANT shall, on at least an annual basis, provide the OWNER with a certificate of insurance as evidence of such insurance.

5.2.3 The CONSULTANT's insurance coverage must be written by companies licensed to do business in the State of Texas at the time the policies are issued and must be written by companies with A.M. Best ratings of B+VII or better.

5.2.4 All endorsements naming the OWNER as additional insured, waivers, and notices of cancellation endorsements as well as the certificate of insurance will indicate: City of Austin, Capital Contracting Office, P.O. Box 1088, Austin, Texas 78767.

5.2.5 The "other" insurance clause will not apply to the OWNER where the OWNER is an additional insured shown on any policy. It is intended that policies required in the AGREEMENT, covering both the OWNER and the CONSULTANT, be considered primary coverage as applicable. In addition, any limitation in Subsection 5.2.6 below, notwithstanding, when the CONSULTANT names the City as an additional insured party under its general liability policy, the CONSULTANT require that the policy provided any defense provided by the policy.

5.2.6 If insurance policies are not written for amounts specified above, the CONSULTANT shall carry Umbrella or Excess Liability Insurance for any differences in amounts specified. If Excess Liability Insurance is provided, it must follow the form of the primary coverage.

5.2.7 The OWNER shall be entitled, upon request and without expense, to receive certified copies of policies and endorsements thereto and may make any reasonable requests for deletion or revision or modification of particular policy terms, conditions, limitations, or exclusions except where policy provisions are established by law or regulations binding upon either of the parties hereto or the underwriter on any such policies.

5.2.8 The OWNER reserves the right to review the insurance requirements set forth during the effective period of this AGREEMENT and to make reasonable adjustments to insurance coverage, limits and exclusions when deemed necessary and prudent by the OWNER based upon changes in statutory law, court decisions, the claims history of the industry or financial condition of the insurance company as well as the CONSULTANT.

5.2.9 The CONSULTANT shall not cause any insurance to be canceled nor permit any insurance to lapse during the term of the AGREEMENT or as required in the AGREEMENT.

5.2.10 The CONSULTANT shall be responsible for premiums, deductibles and self-insured retentions, if any, stated in policies. All deductibles or self-insured retentions shall be disclosed on the certificate of insurance.

5.2.11 The CONSULTANT shall provide the OWNER thirty (30) calendar days written notice of erosion of the aggregate limits below occurrence limits for all applicable coverages indicated within the AGREEMENT.

5.2.12 If OWNER-owned property is being transported or stored off-site by the CONSULTANT, the appropriate property policy will be endorsed for transit and storage in an amount sufficient to protect OWNER's property.

5.2.13 The insurance coverages required under this AGREEMENT are required minimums and are not intended to limit the responsibility or liability of the CONSULTANT.

**5.3** CONSULTANT shall determine appropriate types and levels of insurance coverage to be provided by subconsultants and advise the subconsultants of the documentation to be provided to CONSULTANT to verify coverage.

## **SECTION 6 - TERMINATION OF AGREEMENT**

**6.1** The rights to terminate this AGREEMENT provided in this Section are in addition to, and cumulative of, all other rights and remedies available to the parties at law or in equity.

**6.2** This AGREEMENT may be terminated by the CONSULTANT upon at least seven (7) calendar days written notice should the OWNER substantially fail to perform in accordance with the OWNER's responsibilities through no fault of the CONSULTANT.

### **6.3 Notice to Cure**

OWNER will provide a Notice to Cure to the CONSULTANT to cure an event of default described in this Section and/or an anticipatory breach of contract. The CONSULTANT must attend a meeting with the OWNER regarding the Notice to Cure, the event of default, and/or the anticipatory breach of contract. The Notice to Cure will set forth the time limit in which the cure is to be completed or commenced and diligently prosecuted. Upon receipt of any Notice to Cure, the CONSULTANT must prepare a report describing its program and measures to affect the cure of the event of default and/or anticipatory breach of contract within the time required by the Notice to Cure. The CONSULTANT's report must be delivered to the OWNER at least three (3) business days prior to the required Notice to Cure meeting with the OWNER.

**6.4** This AGREEMENT may be terminated by the OWNER upon at least seven (7) calendar days written notice to the CONSULTANT in the event that the PROJECT is abandoned or indefinitely postponed.

**6.5** This AGREEMENT may be terminated by the OWNER for cause upon seven (7) calendar days written notice. In the event OWNER terminates the AGREEMENT for cause, the OWNER may reject any and all proposals submitted by CONSULTANT for up to three (3) years. In the event that a termination for cause is found to be wrongful, the termination shall be converted to a termination without cause ("termination for convenience") as set forth in Subsection 6.6 and CONSULTANT's sole remedy for such termination will be limited to the recovery of payments permitted under Subsection 6.6. The OWNER may terminate for cause due to the occurrence of any one of the following:

6.5.1 If CONSULTANT persistently fails to perform the work in accordance with the AGREEMENT, in particular the approved PROJECT RAP;

6.5.2 If CONSULTANT disregards laws or regulations of any public body having jurisdiction;

6.5.3 If CONSULTANT makes fraudulent statements;

6.5.4 If CONSULTANT fails to make adequate progress and endangers timely and successful completion of the AGREEMENT, which failure includes failure of subconsultants to meet contractual obligations;

6.5.5 CONSULTANT's failure under this Section includes failure of subconsultants to meet contractual obligations; or

6.5.6 If CONSULTANT otherwise violates in any substantial way any provisions of the AGREEMENT.

**6.6** This AGREEMENT may be terminated at the OWNER'S convenience upon seven (7) calendar days written notice; in which event, the CONSULTANT will be compensated for all services performed to termination date, together with Reimbursable Expenses then due, in accordance with Subsection 6.7, and the OWNER retains the right to continue the PROJECT consistent with paragraph 10.2.4.

**6.7** In the event of termination not the fault of the CONSULTANT, the CONSULTANT will be compensated for all services performed to termination date, together with Reimbursable Expenses then due without the right to compensation for anticipated profits on services not completed. CONSULTANT will submit to the OWNER, within the timeframe set in the termination notice, all work and documents prepared to that point. Fixed-fee payment to the CONSULTANT, if applicable, shall be proportional to services performed to the date of termination.

## **SECTION 7 - OWNER REMEDIES**

**7.1** The OWNER and CONSULTANT agree that in the event of a delay in completion or other cause for which the OWNER suffers actual damages, the OWNER may elect to pursue its actual damages and any other remedy allowed by law. Conditions under which the OWNER may seek other damages include, but are not limited to:

7.1.1 Failure of the CONSULTANT to make adequate progress in accordance with Subsection 6.5.4 above.

7.1.2 Failure of the CONSULTANT to comply with the laws of City, State and federal governments such that subsequent compliance costs exceed expenditures which would have been involved had services been properly executed by the CONSULTANT.

7.1.3 Losses are incurred, despite the Quality Control Plan (QCP), because of defects, errors and omissions in the documents prepared by the CONSULTANT to the extent that the financial losses are greater than the OWNER would have originally paid had there not been defects, errors and omissions in the documents. The CONSULTANT will financially participate in the OWNER'S financial losses for those non-value added work costs.

**7.2** Pursuant to Section 5.1.4, the OWNER may assert a claim against the CONSULTANT's professional liability insurance as appropriate when other remedies are not available or offered for deficiencies discovered during and after PROJECT construction. When the OWNER incurs non-value added work costs due to errors or omissions, the OWNER will send the CONSULTANT a certified cost recovery claim letter that includes:

- (1) summary of facts with supporting documentation;
- (2) instruction for CONSULTANT to revise documents, if appropriate, at CONSULTANT's expense;
- (3) calculation of non-value added work costs incurred by the OWNER; and
- (4) deadline for CONSULTANT's response.

The CONSULTANT will provide a preliminary response to OWNER's cost recovery claim letter within seven (7) calendar days of receipt of the claim letter. The CONSULTANT must submit a formal documented response to the claim letter to the OWNER within fourteen (14) calendar days of the date of the preliminary response. The CONSULTANT will provide the payment requested by OWNER within thirty (30) calendar days of OWNER's acceptance of the CONSULTANT's formal response or the CONSULTANT will request alternative dispute resolution, as described in Subsection 9.2 of this AGREEMENT, within fourteen (14) calendar days of OWNER's rejection of the CONSULTANT's formal response.

**7.3** If the CONSULTANT materially fails to furnish services in compliance with the approved PROJECT RAP schedule or any subsequently approved amendments to the schedule or the CONSULTANT'S services or deliverables are unusable for their intended purpose and these failures are a material breach of this Agreement, then OWNER, in its reasonable discretion may contract with another consultant to complete the services or work product, and CONSULTANT shall pay the OWNER for the difference between the balance under CONSULTANT's agreement with OWNER had CONSULTANT completed its services and the amount charged by the replacing consultant to complete CONSULTANT's scope of work. OWNER will provide CONSULTANT with the itemized costs as they are being incurred. Prior to contracting with another consultant, the OWNER shall provide CONSULTANT with a Notice to Cure, as described in Section 6.3.

#### **7.4 Decisions to Withhold Payment**

OWNER may withhold or nullify the whole or part of any payment to such extent as may be necessary because of conditions outlined in Subsection 4.2.4 "Payments Withheld".

### **SECTION 8 - CONSULTANT REMEDIES**

**8.1** If the CONSULTANT is prevented from completing any part of the PROJECT within the time established in the RAP due to delays beyond the reasonable control of either the OWNER or the CONSULTANT, an extension of the PROJECT schedule in an amount equal to the time lost due to such CDM Smith, Inc.

delay shall be the CONSULTANT's sole and exclusive remedy. Performance interrupted by an act of god or the result of war, riot, civil commotion, sovereign conduct, or the conduct of a third party, will be excused for the period of time necessary to remedy the effect of the precipitating occurrence. In such cases, a conference will be held within three (3) working days of the end of the occurrence to establish a revised schedule in the RAP.

**8.2** CONSULTANT's requests for remedies arising from the terms of this AGREEMENT for conditions other than those specified in Subsection 8.1 must be done in accordance with the following:

8.2.1 Within thirty (30) calendar days after the CONSULTANT could be reasonably expected to know of the occurrence prompting the request for an extension of time, the CONSULTANT must deliver a preliminary written notice to the OWNER describing the general nature of the request. Within thirty (30) calendar days after the preliminary notice, the CONSULTANT must provide the OWNER written supporting documentation stating all known time extensions to which the CONSULTANT is entitled.

8.2.2 Within thirty (30) calendar days of receipt of notice of the amount of the requested remedy with supporting data, OWNER and CONSULTANT will meet to discuss the request, after which an offer of settlement or notification of no settlement offer will be made to CONSULTANT. If CONSULTANT is not satisfied with the proposal presented, CONSULTANT will have thirty (30) calendar days in which to

- (1) submit additional supporting data requested by the OWNER;
- (2) modify the initial request for remedy; or
- (3) request Alternative Dispute Resolution.

## **SECTION 9 - DISPUTE RESOLUTION**

### **9.1 Filing of Claims**

9.1.1 Claims arising from the circumstances identified in this AGREEMENT, or other occurrences or events, shall be made by Written Notice delivered by the party making the Claim to the other party within thirty (30) calendar days after the start of the occurrence or event giving rise to the Claim and stating the general nature of the Claim. Notice of the amount of the Claim with supporting data shall be delivered in writing within thirty (30) calendar days after Written Notice of Claim is delivered by claimant and shall represent that the adjustment claim covers all known amounts and/or extension of time to which claimant is entitled.

9.1.2 Within thirty (30) calendar days of receipt of notice of the amount of the Claim with supporting data, the OWNER and CONSULTANT shall meet to discuss the Claim, after which an offer of settlement or notification of no settlement offer will be made to claimant. If claimant is not satisfied with the proposal presented, claimant shall have thirty (30) calendar days in which to: (i) submit additional supporting data requested by the other party; (ii) modify the initial Claim; or (iii) request Alternative Dispute Resolution.

### **9.2 Alternative Dispute Resolution**

9.2.1 If a dispute exists concerning a CONSULTANT or OWNER, the parties agree to use the following procedure prior to pursuing any other available remedies.

9.2.2 Negotiating with Previously Uninvolved Personnel

Either party may make a written request for a meeting to be held between representatives of each party within fourteen (14) calendar days of the request or such later period that the parties may agree to. Each party shall endeavor to include, at a minimum, one (1) previously uninvolved senior level decision maker (an owner, officer, or employee of each organization) empowered to negotiate on behalf of their organization. If a previously uninvolved senior level decision maker is unavailable due to the size of the CONSULTANT's organization or any other reason, the CONSULTANT shall nonetheless provide an appropriate senior level decision maker for the meeting. The purpose of this and any subsequent meetings will be good faith negotiations of the matters constituting the dispute. Negotiations will be concluded within thirty (30) calendar days of the first meeting, unless mutually agreed otherwise.

### **9.3 Mediation**

9.3.1 If the procedure described in 9.2.2 proves unsuccessful or is waived pursuant to its terms, the parties shall initiate the mediation process. OWNER and CONSULTANT agree to select within thirty (30) calendar days a mediator trained in mediation skills and knowledgeable of the CONSULTANT's professional discipline, to assist with resolution of the dispute. OWNER and CONSULTANT agree to act in good faith in the selection of the mediator and to give consideration to qualified individuals nominated to act as mediator. Nothing in this AGREEMENT prevents the parties from relying on the skills of a person who also is trained in the subject matter of the dispute and/or a contract interpretation expert. Should the parties fail to agree on a mediator within thirty (30) calendar days of initiation of the mediation process, the parties agree to ask the Travis County Dispute Resolution Center to select a qualified individual, which selection is binding on the parties.

9.3.2 Mediation is a forum in which an impartial person, the mediator, facilitates communication between parties to promote reconciliation, settlement, or understanding among them. The parties hereby agree that mediation, at a minimum, shall provide for

- (1) conducting an on-site investigation, if appropriate, by the mediator for fact gathering purposes;
- (2) a meeting of all parties for the exchange of points of view; and
- (3) separate meetings between the mediator and each party to the dispute for the formulation of resolution alternatives.

The parties agree to participate in mediation in good faith for up to thirty (30) calendar days from the date of the first mediation session, unless mutually agreed otherwise. Should the parties fail to reach a resolution of the dispute through mediation, then each party is released to pursue other remedies available to them.

### **9.4 Resolution of Disputes between CONSULTANT and Subconsultant:**

The CONSULTANT agrees to follow the procedures paralleling those outlined in subsections 9.1, 9.2, and 9.3 in the event of a dispute with a subconsultant. The OWNER is not a party to the dispute resolution process between the CONSULTANT and subconsultants. However, if the OWNER is notified of a subconsultant claim, the OWNER will withhold payments to the CONSULTANT in accordance with subparagraph 4.2.4.2 until receiving notification that the claim has been resolved.

## **SECTION 10 - MISCELLANEOUS PROVISIONS**

### **10.1 Owner's Right to Audit**



10.1.1 "Records" means all records generated by or on behalf of CONSULTANT and each subconsultant, whether paper, electronic, or other media, which are in any way related to performance of or compliance with this Agreement, including, without limitation:

- (1) accounting records;
- (2) written policies and procedures;
- (3) subcontract files;
- (4) correspondence;
- (5) supplemental amendments to this AGREEMENT (as appropriate);
- (6) agreements between CONSULTANT and any subconsultant;
- (7) records necessary to evaluate contract compliance and any claim submitted by CONSULTANT or any of its subconsultants;
- (8) any other CONSULTANT record that may substantiate any charge related to this Agreement; and
- (9) technical work products in accordance with the approved PROJECT RAP.

10.1.2 CONSULTANT shall allow OWNER's agent or its authorized representative to inspect, audit, and/or reproduce all Records generated by or on behalf of CONSULTANT and each subconsultant, upon OWNER's written request. Further, CONSULTANT shall allow OWNER's agent or authorized representative to interview any of CONSULTANT's employees, all subconsultants, and all their respective employees.

10.1.3 CONSULTANT shall retain all its Records, and require all its subconsultants to retain their respective Records, during this AGREEMENT and for the longest of these specified periods: (i) three (3) years after final payment, (ii) until all audit and litigation matters that OWNER has brought to the attention of CONSULTANT are resolved, or (iii) longer if required by law. OWNER's right to inspect, audit, or reproduce Records (at no cost to OWNER), or interview employees of CONSULTANT or its respective subconsultants exists for the same period described in the preceding sentence.

10.1.4 CONSULTANT must provide sufficient and accessible facilities during its normal business hours for OWNER to inspect, audit, and/or reproduce Records, and to interview any person about the Records.

10.1.5 CONSULTANT shall insert these requirements in each written agreement between CONSULTANT and any subconsultant and require each subconsultant to comply with these provisions.

## **10.2 Ownership and Use of Documents**

10.2.1 All PROJECT Drawings and Reports produced by the CONSULTANT under this AGREEMENT are the property of the OWNER. The CONSULTANT shall also provide the OWNER and digital computer copies on CD or other OWNER-approved media of updated drawings and reports. The cost of such copies will be paid as specified in Section 4 of this AGREEMENT. The CONSULTANT may not provide copies of or otherwise use the work products covered by this Subsection 10.2 without the express prior written approval of the OWNER.

10.2.2 The CONSULTANT agrees that items such as plans, drawings, photos, designs, studies, specifications, computer programs, schedules, technical reports, or other work products which is/are specified to be delivered under this AGREEMENT, and which is/are to be paid for by the OWNER, is/are subject to the rights of the OWNER in effect on the date of this AGREEMENT. These rights include the right to use, duplicate and disclose such items in whole or in part, in any manner and for whatever purpose, and

to have others do so. The CONSULTANT shall not copyright or otherwise claim ownership of the work products covered by this subsection 10.2. The CONSULTANT shall include in its subconsultant contracts appropriate provisions to achieve the purpose of this Subsection 10.2. The CONSULTANT shall include in its Subconsultant contracts appropriate to achieve the purpose of this Subsection 10.2.

10.2.3 All such items furnished by the CONSULTANT pursuant to this AGREEMENT are considered instruments of its services in respect to the PROJECT. It is understood that the CONSULTANT does not represent such items to be suitable for reuse on any other project or for any other purpose(s). If the OWNER reuses such items without the CONSULTANT's specific written verification or adaptation, such reuse will be at the risk of the OWNER, without liability to the CONSULTANT.

10.2.4 Should the CONSULTANT be terminated under this AGREEMENT, the OWNER may continue the PROJECT and receive copies of the documents within fourteen (14) calendar days of the termination notice. Copies will be in the format designated by the OWNER. The OWNER may have these documents completed, corrected, revised or added to by another CONSULTANT in accordance with Title 22, Chapter 137.33(i) of the Texas Administrative Code.

10.2.5 Submission or distribution to meet official regulatory requirements or for other purposes in connection with the PROJECT is not to be construed as publication in derogation of the CONSULTANT's rights.

### **10.3 Venue**

10.3.1 In the event of any suit at law or in equity involving the AGREEMENT, venue will be exclusively in Travis County, Texas and the laws of the State of Texas shall apply to the interpretation and enforcement of this AGREEMENT.

### **10.4 Definitions**

10.4.1 Terms in this AGREEMENT will have the same meaning as those in the standard purchasing and construction documents for the City of Austin, Texas. The applicable definitions may be viewed at <http://www.ci.austin.tx.us/purchase/downloads/ifb0100.pdf> and <http://www.ci.austin.tx.us/aeservices/toc.htm> respectively.

### **10.5 Severability**

If any word, phrase, clause, sentence or provisions of this instrument, or the application of same to any person or set of circumstances is for any reason held to be unconstitutional, invalid or unenforceable, that finding only effects such word, phrase, clause, sentence or provision, and such finding does not effect the remaining portions of this instrument; this being the intent of the parties in entering into this instrument; and all provisions of this instrument are declared to be severable for this purpose.

### **10.6 Indemnification**

**10.6.1 Indemnification.** To the extent allowed by Section 271.904 of the Texas Local Government Code, The Consultant shall indemnify, protect, and save harmless the City and its officials, agents, and employees from and against all claims, demands, suits, causes of action, loss, damage, attorney's fees, costs, expenses, and liability of every kind and nature whatsoever, for personal injury or death or property damage to the extent that such injury, death or damage is caused by, results from, or arises in whole or in part from any negligent act, error or omission of the Consultant or any of its subconsultants or any other party for whom Consultant is responsible in connection with the performance of its services or failure to perform its services in conformance with the terms and conditions of this Agreements; provided, however, Consultant shall not be responsible for the negligence of any other parties.

**THIS INDEMNITY SHALL BE BROADLY CONSTRUED TO APPLY TO ALL LIABILITY ATTRIBUTED TO THE CONCURRENT AND SOLE NEGLIGENCE OF CONSULTANT, INCLUDING GROSS NEGLIGENCE, WILFULL MISCONDUCT, AND STRICT LIABILITY, AND SHALL SURVIVE TERMINATION OF THIS AGREEMENT.**

## **10.7 Notices**

10.7.1 Any and all notices under this AGREEMENT must be in writing and shall be delivered to the party entitled to receive the same by hand or U.S. Certified Mail, return receipt requested, addressed as specified below:

### **Mailed Notices to OWNER:**

City of Austin  
Capital Contracting Office  
P.O. Box 1088  
Austin, TX 78767

### **Hand Delivered Notices to OWNER:**

City of Austin  
Capital Contracting Office  
505 Barton Springs Road, Suite 1045A  
Austin, TX 78704

### **Mailed Notices to CONSULTANT:**

CDM Smith Inc.  
12357-A Riata Trace Parkway, Suite 210  
Austin, Texas 78727

### **Hand Delivered Notices to CONSULTANT:**

CDM Smith Inc.  
12357-A Riata Trace Parkway, Suite 210  
Austin, Texas 78727

10.7.2. Mailed notice will be deemed effective three (3) business days after such notice is mailed by Certified Mail with return receipt requested. Hand delivered notice will be effective when received and acknowledged by signed receipt.

#### **10.8 Successors and Assigns**

The OWNER and the CONSULTANT bind themselves, their partners, successors, assigns and legal representatives to the other party to this AGREEMENT with respect to all covenants of this AGREEMENT. Neither the CONSULTANT nor the OWNER may assign, sublet or transfer any interest in this AGREEMENT without the prior written consent of the other party.

#### **10.9 Extent of AGREEMENT**

This AGREEMENT represents the entire and integrated AGREEMENT between the OWNER and the CONSULTANT and supersedes all prior negotiations, representations or agreements, either written or oral. This AGREEMENT may be amended only by written instrument signed by authorized representatives of both OWNER and CONSULTANT.

The OWNER is represented herein for all purposes of this AGREEMENT by the Capital Contracting Officer, or such other representative as may be authorized by the City Manager of the City of Austin.

The CONSULTANT employs professionals duly licensed to practice in the State of Texas, has the professional abilities, experience, expertise and facilities to provide such professional services, and agrees to undertake and furnish said services in accordance with this AGREEMENT.

The CONSULTANT is bound by a Code of Ethics and guided by rules and restrictions of a State licensing board. Contact the appropriate licensing board if an issue regarding ethics or the practice of consulting arises.

This AGREEMENT is executed to be effective upon the date of the last party to sign.

Austin, Texas, OWNER  
P.O. Box 1088  
Austin, Texas 78767

CDM Smith Inc., CONSULTANT  
12357-A Riata Trace Parkway, Suite 210  
Austin, Texas 78727

By: \_\_\_\_\_

By: \_\_\_\_\_

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

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

Title: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

Date: \_\_\_\_\_

Approved As To Form:

Attest:

By: \_\_\_\_\_

By: \_\_\_\_\_

Assistant City Attorney

Secretary, if a Corporation

Exhibit A – Project Description  
Exhibit B – Non-Discrimination and Non-Retaliation Certification and Appendix A – Title VI Assurances  
Attachment 1 – Key Personnel  
Attachment 2 – Request for Changes in Key Personnel Form  
Attachment 3 – Scope of Services  
Attachment 4 – Quality Control Plan (QCP)  
Attachment 5 – Resource Allocation Plan (RAP)  
Attachment 6 – Maximum NTE Contract Amounts by Phase

**END**



## EXHIBIT A - PROJECT DESCRIPTION

Solicitation Number: CLMP179

Project Name: Consulting Services for Integrated Water Resource Plan

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### **PROJECT FOR:**

CITY OF AUSTIN, AUSTIN WATER UTILITY, THROUGH ITS CONTRACT MANAGEMENT DEPARTMENT

### **PROJECT TITLE:**

*Consulting Services for Integrated Water Resource Plan*

### **OBJECTIVES OF THE PROJECT:**

The Consultant will assist in the development of the Austin Water Integrated Water Resource Plan.

### **BACKGROUND:**

Austin Water (AW or Utility) serves a population of approximately 970,000 with water, wastewater, and reclaimed water services. The Utility serves retail customers and wholesale customers including Municipal Utility Districts (MUDs), Water Control and Improvement District (WCIDs), Cities, and private companies. The Utility's Impact Fee Service Area is approximately 544 square miles.

Utility customers are supplied with drinking water from three (3) surface water treatment plants, which draw water from the Colorado River as the river runs through Lake Travis and Lake Austin. The combined water treatment capacity is 335 million gallons per day (MGD). Wastewater is treated at two (2) major wastewater treatment plants with a combined capacity of 150 MGD and a number of small-scale treatment plants. The Utility operates and manages an expanding reclaimed water system providing reclaimed water to customers for a variety of non-potable uses.

Austin's main sources of supply are its own run-of-river water rights backed up by firm water supply contracts with the Lower Colorado River Authority (LCRA). In 1999, Austin entered into a long-term water supply agreement with LCRA for 325,000 acre-feet/year. Austin's current annual water use is in the range of approximately 137,500 acre-feet/year (Austin has been in Stage 2 no

more than one day per week watering restrictions nearly continuously since September 2011). In 1999 Austin pre-paid \$100 million to LCRA for firm water reservation and water use fees in accordance with the 1999 Agreement. Additional water payments by Austin will be triggered after average annual water use for two (2) consecutive years exceeds 201,000 acre-feet/year.

Despite recent rains, the Central Texas region is in the midst of unprecedented drought. Six of the ten lowest annual inflows on record (a key indicator of the drought's intensity) have occurred since 2008, when this drought began. These annual inflows are each considerably less than the lowest annual inflow during the 1950's drought of record. The Utility's conservation and reuse programs and outdoor watering restrictions have resulted in cumulative water savings of more than 180,000 acre-feet since 2011. The Austin community has responded to calls for water conservation and water use efficiency throughout the course of the drought. Overall water use on a gallons per capita basis has dropped from 190 gallons per capita per day (gpcd) in FY 2006 to 125 gpcd in FY 2014.

To help in addressing challenges posed by the ongoing drought, the Austin City Council created the Austin Water Resource Planning Task Force (2014 Task Force) in April 2014 to evaluate the City's water needs, to examine and make recommendations regarding future water planning, and to evaluate potential water resource management scenarios for Council consideration. The 2014 Task Force was charged with making recommendations on alternative water sources including conservation, reuse, regional transmission systems and partnerships, groundwater, aquifer storage, as well as other potential sources in the region. The 2014 Task Force presented a final report to Council in July 2014

One of the key recommendations of the 2014 Task Force was the development of an Integrated Water Resource Plan (IWRP), including an independent Conservation Potential Assessment. In September 2014, Austin Water presented a plan to Council to develop the IWRP, drawing from industry experts and academic partners and using in-house resources to conduct the project, in combination with independent Consultants for key tasks, which require specialized knowledge or when other additional resources are needed. In December 2014, the City Council passed a resolution that created the 2015 Austin Integrated Water Resource Planning Community Task Force (2015 Task Force) to support the IWRP development process.

IWRP will provide a mid- and long-term evaluation of, and plan for, water supply and demand management options for the City of Austin in a regional water supply context. Through public outreach and coordination of efforts between City departments and the Austin Integrated Water Resource Planning Community Task Force, the IWRP offers a holistic and inclusive approach to water resource planning. The plan embraces an innovative and integrated water management

process with the goal of ensuring a diversified, sustainable, and resilient water future, with strong emphasis on water conservation.

The Water Conservation Study will provide a qualitative assessment of Austin Water's conservation efforts and comparison to peer cities. Professional services contracts with two other Consultants are planned to be procured to support the development of the IWRP. The Utility plans to separately procure and project manage a Climate Consultant to develop forecast data for climate change impacts on supply and demand and a Hydrologist/Water Availability Modeling Consultant to perform Water Availability Modeling (WAM) analyses of supply and demand management portfolios. These two additional consultants are intended to work in collaboration with the Utility and the IWRP Consultant.

### **BASIC SERVICES:**

The following is a general list and may not be inclusive of all basic services. A number of meetings with the Utility are anticipated to be necessary over the course of the project. The Consultant shall be available to attend meetings by phone, teleconference, and/or in person to discuss project progress. The Consultant shall be expected to attend and/or present at a number of public meetings over the course of the project.

Work products for the tasks below are to be provided for review in the form of a draft technical memorandum.

### **Task 1 Conduct Public Outreach and Participation**

Throughout the IWRP process, the Consultant shall provide expertise, planning, and assistance to public outreach and public participation efforts, as directed by the City. This includes providing assistance as needed as the City works with the 2015 Task Force and others to develop and refine a framework for the public outreach and participation process. This framework will address the incorporation of public input into the plan development process and the identification of local and regional stakeholders. The City intends to provide multiple opportunities for meaningful public input on water demand-side and supply-side strategies and plan development, seeking stakeholder input that reflects the diversity of Austin's population.

Strategies to gather public input may include conducting focus groups to get targeted feedback from particular stakeholder groups as well as conducting customer surveys, including surveys of water use. Surveys must be approved in writing by the City prior to distribution. Targeted stakeholder groups may include all customer classes (including, but not limited to, large



businesses, homeowners, renters, multi-family property owners, larger institutions, commercial customers, and wholesale customers), developers, the environmental community, and the low-income community. The Consultant shall assist the City in developing a clear and publicly available outreach plan. On an as needed basis, the Consultant shall assist the Utility in coordination and implementation efforts to include meetings among City departments, programs, and local and regional stakeholders.

**Task 1 Deliverables**

- Public outreach and participation plan
- Documentation of public outreach process and participation
- Summary of documentation and feedback from stakeholder groups
- Assist Austin Water with coordination and implementation of stakeholder meetings as needed

**Task 2 Develop Methodology for Options Evaluation**

The Consultant shall review and refine the methodology proposed by the 2014 Task Force to provide a framework for the comparison of demand and supply side options. The Demand Management and Supply Management Evaluation Matrices developed by the 2014 Task Force will be used as the basis for the development of evaluation criteria (see Attachment 1 – Appendix A, B, and E from July 2014 Task Force Report to Council). The final methodology, developed by the City and the Consultant in partnership with the 2015 Task Force and others, should include consideration of, but not be limited to:

- Potential yield for demand and supply side options
- Water supply benefits (including consideration of supply diversification)
- Economic impacts/“apples to apples” cost comparisons (incl. capital costs and operations and maintenance costs, lifecycle costing including energy and carbon emissions, cost savings, cost benefit analysis, and consideration of potential financial incentives)
- Environmental impacts and considerations
- Social impacts
- Implementability (including intergovernmental partnerships, permitting and regulatory considerations, and the timing of implementation)
- Risk (including water availability)

**Task 2 Deliverables**

- Summary of methodology recommendations for options evaluation
- Standard template for comparison and evaluation of options

**Task 3 Evaluate and Forecast Disaggregated Water Demands****Task 3.1 Develop disaggregated demand forecasting model**

As an initial step, the Consultant shall develop process steps to forecast water demands that build on work performed by the Utility to disaggregate water demands. In developing these process steps, the Consultant shall consider both top-down and bottom-up approaches, among others. A top down approach could start the process by looking at demand on a system-wide scale and then disaggregate that demand into component parts, such as sectors; a bottom up approach could start at the end-use level and build up to the system-wide scale. The Consultant shall assist the City in developing a preliminary disaggregated demand forecasting model for the 2020, 2039/2040 (year 2039 included to match the City's bicentennial) planning horizons for use in the early stages of the project.

The Consultant shall build upon this initial model and expand the level of detail within the model to more comprehensively incorporate various factors that affect demand. This more detailed model will be used for projecting to the 2020, 2039/2040, 2070, and 2115 planning horizons. Potential disaggregation categories for demand may include, but not be limited to, Utility customer classes and end uses (including indoor and outdoor split), Austin Energy (AE) water demands at power plants and other uses (consumptive vs. non-consumptive), potable and non-potable demands (reclaimed and auxiliary water), and other regional water demands including direct lake withdrawals for parkland irrigation; water needed for trees, farms, and food; water needed for fire suppression and wildfire suppression in wildland/urban interface areas; and water needed to maintain environmental flows and provide for habitat protection.

The more detailed model may incorporate demand drivers including the impacts of climate change; economic drivers such as employment forecasts and water pricing; population growth and land use changes; variable demands due to seasonal factors and drought contingency plan (DCP) implementation (outdoor watering conservation stages); and changes in long-term water use patterns, such as recent declining trends in gallons per capita per day (GPCD).

**Task 3.2 Develop water needs budgeting options and approaches**

The Consultant shall use the model created in Task 3.1 to perform preliminary water needs identification, quantification, and benchmarking. In addition, the Consultant shall develop a baseline water budget/balance, incorporating demands developed in Task 3.1 in addition to existing water supply information.

### **Task 3 Deliverables**

- Preliminary disaggregated water demand forecasting model out to the 2020 and 2039/2040 planning horizons
- Detailed disaggregated water demand forecasting model combining the 2020, 2039/2040, 2070, and 2100 planning horizons
- Technical memorandum explaining water demand projection development
  - Methodology to develop disaggregated water demand forecasting model
  - Include background information regarding different methodology options considered, pros and cons of historical, current, and potential methodology options considered, and the influence of climate change on demand projections
- Preliminary water needs identification, quantification, and benchmarking for water needs budgeting

### **Task 4 Conduct Water Conservation Potential Assessment**

This analysis should be conducted according to the methodology developed in Task 2. As applicable, the Consultant shall also consider the results of the Water Conservation Study project that will be developed for the City by a separate consultant and project-managed by the City's Office of Sustainability.

#### **Task 4.1 Identify demand management options for matrix evaluation**

The Consultant, in collaboration with the Utility, will develop a screening process to determine which options will be fully evaluated within the matrix (see Task 2) from a wide array of demand management options.

#### **Task 4.2 Evaluate demand management options**

The Consultant shall develop an independent analysis of current and potential demand management options according to the methodology developed in Task 2. The evaluation of individual conservation programs conducted by the Consultant shall potentially include, but are not limited to, rates and price elasticity, rebates and incentives, water meter options, tools for customers (water report software, etc.), outreach and education, conservation audits, water loss reduction for customers, leak detection and reduction programs for the City, and potentially incentivizing water conserving development through Impact fees or other fees. The Consultant may, at the direction of the City, evaluate codes and ordinances and recent changes and offer recommendations for additional code changes. The Consultant shall also evaluate other demand-side management options not listed.

**Task 4.3 Develop benchmarks**

The Consultant shall review current benchmark information and use the results of the demand management options evaluation performed in Task 4.2 to develop locally-appropriate benchmarks for water conservation programs, to include cost-benefit and other factors.

**Task 4.4 Identify potential for demand reduction opportunities**

Using information developed in Task 3 and Task 4.2, the Consultant shall identify potential demand reduction opportunities. The evaluation of potential demand reductions should include identification of potential impacts on wastewater collection and treatment systems (pipe flow rate reductions and/or impacts to waste constituent concentrations).

**Task 4.5 Develop cost and yield data**

The Consultant shall develop cost and yield information for individual conservation programs and shall also develop cost-benefit analyses for each conservation program. The Consultant shall also develop cost curves as appropriate.

**Task 4.6 Identify opportunities for coordination and cooperative conservation improvements**

The Consultant shall identify and recommend opportunities to coordinate with local and regional entities such as the Lower Colorado River Authority (LCRA), Barton Springs Edwards Aquifer Conservation District (BSEACD), wholesale water customers, and neighboring utilities and communities in evaluating and developing potential demand management program options. The Consultant shall also identify potential opportunities for cooperative conservation improvements with intra-basin users, including users other than municipal users.

**Task 4.7 Summarize AW Conservation progress to date**

The Consultant shall prepare a summary of AW Conservation history, capturing progress and accomplishments to date to establish a starting point for future conservation efforts. The Consultant shall review the 2012 statistical analysis report that was the basis for the City of Austin pro rata curtailment plan and develop a list of implemented conservation programs and estimated savings from those programs.

**Task 4 Deliverables**

- Conservation Potential Assessment including benchmarks and cost benefit analysis results
- Recommendations for coordination with local and regional entities
- Summary of AW Conservation history and list of implemented conservation programs and estimated savings

## **Task 5 Incorporate Impacts of Climate Change on Water Supply and Demand**

### **Task 5.1 Incorporation of climate change impacts on water supply options**

The Consultant shall coordinate with the Climate Consultant (procured by the City separately outside of this scope of work) to incorporate climatic and hydrologic forecast data into the evaluation of water supply options.

### **Task 5.2 Evaluation of climate change impacts on demand forecasting**

The Consultant shall evaluate climate change impacts on demand and coordinate with the Climate Consultant (procured outside of this scope of work) to incorporate climatic forecast data into the evaluation of disaggregated demand modeling and forecasting.

#### **Task 5 Deliverables**

- Summary of incorporation of climatic and hydrologic forecast data in water supply options evaluation
- Summary of climate change impacts on demand and incorporation of climate change data into disaggregated demand modeling

## **Task 6 Evaluate Water Supply and Diversification Options**

### **Task 6.1 Identify water supply options for matrix evaluation**

The Consultant, in collaboration with the Utility, shall develop a screening process to determine which options will be fully evaluated within the matrix (see Task 2) from a wide array of water supply options.

### **Task 6.2 Evaluate water supply options**

The Consultant shall assist the Utility in evaluating water supply options according to the methodology developed in Task 2. Potential supply options for evaluation include, but are not limited to lake storage and operations, off-channel reservoir storage and operations, direct potable reuse, direct non-potable reuse, indirect reuse (for potable and non-potable), outflow from Barton Springs/other local springs and creeks into Lady Bird Lake, green infrastructure, on-site systems for stormwater, graywater, wastewater, AC condensate, recycled process water, etc. (decentralized concepts), desalination of brackish groundwater or other saline water sources, groundwater, aquifer storage and recovery (ASR), surface water rights, water rights transfers, and other potential regional projects.

The evaluation of water supply options should take into account key factors of water supply options, including the Lower Colorado River Authority (LCRA) Water Management Plan, and plan revisions, emergency orders, and LCRA environmental flow requirements; water supply agreements between the City and LCRA in the form of firm contracts for stored water and run-of-river backup, and additional supplies for steam-electric demands; energy-water nexus dynamics; surface and groundwater law/permitting; City of Austin return flows and the Joint Application for Reuse (JAR) pending at TCEQ; potable/non-potable connection standards and public health and safety; end use water quality; potential policy and financial incentives; climate change impacts; environmental and water quality impacts, flows, and habitat; identification of potential impacts on wastewater collection and treatment systems (pipe flow rate reductions and/or impacts to waste constituent concentrations); and wastewater, graywater, and rainwater use, codes, and ordinances.

In performing this evaluation, the Consultant may develop cost curves as appropriate.

The Consultant shall coordinate with the Hydrologist/ Water Availability Modeling Consultant (procured by the City separately outside of this scope of work) to incorporate the results of Water Availability Modeling (WAM) analyses, primarily for surface water on a regional/basin-wide scale, into the evaluation of water supply options.

### **Task 6.3 Perform comprehensive reuse analysis**

The Consultant shall perform a comprehensive reuse analysis, in collaboration with Austin Water, to help guide future decision making. As part of this comprehensive analysis, the Consultant shall develop direct reuse (purple pipe) decision model options, which will include consideration of system type options, financial/business model considerations, and water supply aspects in a region/basin-wide context. The comprehensive reuse analysis will also include an evaluation of decentralized water reuse options, which may include but are not limited to sewer mining, distributed and outlying satellite systems, and combined rain/gray/blackwater on-site reuse systems. The Consultant shall evaluate potential for on-site stormwater management to offset water demand. The Consultant shall identify potential need for code changes associated with this task. This task may include a geospatial analysis of future supply sources (including auxiliary and decentralized supply sources) similar to the geospatial analysis performed in the Sydney Decentralised Water Master Plan.

### **Task 6 Deliverables**

- Supply options evaluation results in template for each strategy as described in Task 2
- Comprehensive reuse analysis summary

**Task 7 Score Demand and Supply Side Options****Task 7.1 Score options**

The Consultant shall score water supply and demand side options as an intermediate step to help guide the development of portfolios in later tasks. This will include scoring the results of the Conservation Potential Assessment performed in Task 4 and the results of the evaluation of water supply options performed in Task 6 as per the evaluation methodology developed in Task 2. For each demand or supply side strategy, the Consultant shall develop drill-down summaries of the data to be presented within the template developed in Task 2.

**Task 7.2 Perform reconciliation of scoring parameters**

The Consultant shall use the results of Task 7.1 to develop a scored list of demand and supply side options. The Consultant shall perform reconciliation of scoring parameters, including costs, for demand and supply side options as needed to ensure “apples-to-apples” comparisons.

**Task 7 Deliverables**

- Scored list of demand and supply side options
- Completed templates with background information for each demand and supply-side option

**Task 8 Develop and evaluate water supply and demand management portfolios****Task 8.1 Develop process to create, evaluate, and select portfolios**

The Consultant shall assist the City in developing a process to create, evaluate, and select water supply and demand management portfolios. This will include determining performance objectives for portfolios including defining acceptable levels of risk and reliability for customers and stakeholders, identifying evaluative criteria, and identifying water supply and demand management portfolio themes. Evaluative criteria may align with the methodology developed in Task 2.

**Task 8.2 Assist in creation and prioritization of portfolios for further evaluation**

The Consultant shall assist the City in creating preliminary portfolios made up of demand and supply side options scored in Task 7. The Consultant shall coordinate with the Hydrologist/Water Availability Modeling Consultant (procured by the City separately outside of this scope of work) who will conduct WAM analysis of preliminary and further refined portfolios. The Consultant shall assist the City in developing prioritized option portfolios for financial analysis in Task 9 and scoring in Task 10.

**Task 8 Deliverables**

- Recommended scoring methodology for demand and supply side portfolios
- Prioritized option portfolios with quantitative and qualitative information including, but not limited to, combined storage graphs using WAM-based conditional reliability modeling results
- List of selected and prioritized option portfolios for further evaluation

**Task 9 Conduct Financial Analysis and Evaluation****Task 9.1 Evaluate financial considerations**

The Consultant shall evaluate financial considerations of the supply and demand side portfolios selected in Task 8. This evaluation will include capital costs, operation and maintenance lifecycle costs, and other financial considerations, as needed. A present value analysis of the different portfolios should be conducted to compare and evaluate long-term financial impacts. Other financial considerations may include a high-level summary of potential rate impacts for different portfolios.

**Task 9.2 Evaluate financing options**

In consultation with City staff, the Consultant shall summarize, at a high level, potentially implementable financing options including alternate project delivery methods. This summary may identify opportunities for regional partnerships and cooperation, technology cost sharing, and revenue-positive or revenue-neutral opportunities for consideration in infrastructure and facilities planning. Financing options to be explored should include expansion of the use of impact fees to support projects aimed at improving water use efficiency.

The Consultant shall evaluate funding mechanisms and requirements for decentralized, graywater, and rainwater harvesting options, exploring the use of private capital options to finance decentralized infrastructure throughout the city, including a potential Service Extension Request (SER) process approach. The Consultant shall conduct a survey of other cities and summarize the implications of decentralized infrastructure on other cities' revenue streams, and approaches taken to develop fee for service models. The Consultant shall also investigate and summarize funding options for up-front capital costs as well as long-term operations and maintenance cost approaches.

The Consultant shall evaluate and summarize, at a high level, public financing options, public-private partnership financing options, and the suite of financing programs available from the Texas Water Development Board.



**Task 9.3 High-level summary of alternative utility rate structure business model approaches**

The Consultant shall develop case studies that summarize alternative utility rate structure business models from three cities and analyze the effects of these business models on water demand. If sufficient information is not available to develop case studies from three cities, additional exploration of recent business model research may also be required. This primarily qualitative analysis will include high-level points for possible consideration to incorporate as part of Austin Water’s ongoing business model adaptation process. The Consultant shall also identify opportunities for future analysis including implementability.

**Task 9 Deliverables**

- Summary of findings from financial analysis and evaluation of portfolios
- Summary of findings from financing options evaluation
- High-level summary of alternative utility rate structure business model approaches and case studies

**Task 10 Score demand and supply side portfolios**

The Consultant shall score portfolios comprised of both demand and supply-side options using methodology developed in Task 8 and develop a scored list of portfolios.

**Task 10 Deliverables**

- Scored list of portfolios comprised of both demand and supply-side options

**Task 11 Develop Plan Recommendations**

The Consultant shall assist the City in developing plan recommendations that incorporate consideration of the community’s values, quality of life, social equity, affordability, supply diversity, sustainability, water conservation, drought resilience, and environmental protection. This will potentially include a review of implementation triggers for short-term water supply augmentation strategies based on the City’s ongoing drought response planning work. The Consultant shall assist the City in developing medium and long term plan recommendations with time horizons and potentially triggered by conditions. The Consultant shall assist the City in identifying case studies to support and showcase supply and demand management options and identifying emerging supply and demand management issues.

**Task 11 Deliverables**

- Supply and demand management plan recommendations
- Updated short-term tiered drought management plan
- Medium and long term plan recommendations
- Case studies for demand and supply side options

**Task 12 Develop Plan Report**

The Consultant, with assistance from the City, shall develop the final plan report. The Consultant shall develop, compile, and format content to be included in the report, including but not limited to graphics, diagrams, tables, and written materials. The Consultant, in partnership with the City, shall develop implementation plan recommendations to serve as a roadmap to accomplish plan recommendations. The Consultant shall also develop process options for plan updates to revisit issues (potentially every 5 years) and strategies to foster innovation within the plan process. This process will identify items for potential consideration within subsequent planning cycles.

**Task 12 Deliverables**

- Final plan report, including implementation plan and process options

**MAJOR AND OTHER SCOPES OF WORK:**

Below is a list of the major scopes of work that the City has identified for this project. In addition, the City has identified Other Scopes of work that MAY materialize during the course of the project. The City does not guarantee that the scopes listed under Other Scopes of work will materialize on this contract. If the prime Consultant intends to enter into a subconsulting agreement on a scope of work not listed below, the prime Consultant is required to contact SMBR and request an updated availability list of certified firms in each of the scopes of work for which the prime Consultant intends to utilize a subconsultant.

**\* Major Scopes of Work**

Communications: Public Relations Consulting  
Water/Wastewater Conservation Services  
Civil Engineering  
Environmental Engineering  
Environmental Consulting (Incl. Sustainability)  
Finance/Economics Consulting

Water Supply, Treatment, and Distribution Engineering

**Notes:**

- In order to avoid creating a conflict of interest, participation at the prime level will necessitate exclusion from consideration for any contracts resulting from the work performed on this project. Participation at the subconsultant level may create a conflict of interest and necessitate exclusion from any contracts resulting from the work performed on this project and a determination will be made prior to the release of any future projects.
- If the City determines that a conflict of interest exists at the prime or subconsultant level, the City reserves the right to replace/remove the prime or instruct the prime Consultant to remove the subconsultant with the conflict of interest and to instruct the prime Consultant to seek a post-award change to the prime Consultant's compliance plan as described in City Code § 2-9B-23. Such substitutions will be dealt with on a case-by-case basis and will be considered for approval by Small and Minority Business Resources (SMBR) in the usual course of business. The City's decision to remove a prime or subconsultant because of a conflict of interest shall be final.
- A Consultant performance evaluation will be performed on all professional services contracts.
- Please review the City of Austin's Public Participation Principles (<http://austintexas.gov/page/public-participation-principles>)

**FORM 3****Prime Firm's EEO Program and Title VI Assurances****Solicitation No:** CLMP179**Project Name:** Consulting Services for Integrated Water Resource Plan**City of Austin, Texas****NON-DISCRIMINATION AND NON-RETALIATION CERTIFICATION**

To: City of Austin, Texas, ("OWNER")

I hereby certify that our firm conforms to the Code of the City of Austin, Section 5-4-2, and the City's Non-Retaliation Policy as reiterated below:

**A. Chapter 5-4. Discrimination in Employment by City Contractors, Section 5-4-2:** As an Equal Employment

Opportunity (EEO) employer, the Contractor will conduct its personnel activities in accordance with established federal, state and local EEO laws and regulations and agrees:

- (1) Not to engage in any discriminatory employment practice defined in this chapter.
- (2) To take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without discrimination being practiced against them as defined in this chapter. Such affirmative action shall include, but not be limited to: all aspects of employment, including hiring, placement, upgrading, transfer, demotion, recruitment, recruitment advertising; selection for training and apprenticeship, rates of pay or other form of compensation, and layoff or termination.
- (3) To post in conspicuous places, available to employees and applicants for employment, notices to be provided by OWNER setting forth the provisions of this chapter.
- (4) To state in all solicitations or advertisements for employees placed by or on behalf of the Contractor, that all qualified applicants will receive consideration for employment without regard to race, creed, color, religion, national origin, sexual orientation, gender identity, disability, veteran status, sex or age.
- (5) To obtain a written statement from any labor union or labor organization furnishing labor or service to Contractors in which said union or organization has agreed not to engage in any discriminatory or retaliation employment practices as defined in this chapter and to take affirmative action to implement policies and provisions of this chapter.
- (6) To cooperate fully with OWNER's Human Rights Commission in connection with any investigation or conciliation effort of said Human Rights Commission to ensure that the purpose of the provisions against discriminatory employment practices are being
- (7) To require compliance with provisions of this chapter by all subcontractors having fifteen or more employees who hold any subcontract providing for the expenditure of \$2,000 or more in connection with any contract with OWNER subject to the terms of this chapter.

**B. Minimum Standard Non-Discrimination and Non-Retaliation in Employment Policy:** For the purposes of this Offer and any resulting Contract, Contractor adopts the provisions of the City's Minimum Standard Non-Discrimination and Non-Retaliation Policy set forth below.

- (1) *As an Equal Employment Opportunity (EEO) employer, the Contractor will conduct its personnel activities in accordance with established federal, state and local EEO laws and regulations.*



- (2) *The Contractor will not discriminate against any applicant or employee based on race, creed, color, national origin, sex, age, religion, veteran status, gender identity, disability, or sexual orientation. This policy covers all aspects of employment, including hiring, placement, upgrading, transfer, demotion, recruitment, recruitment advertising, selection for training and apprenticeship, rates of pay or other forms of compensation, and layoff or termination.*
- (3) The Contractor agrees to prohibit retaliation, discharge or otherwise discrimination against any employee or applicant for employment who has inquired about, discussed or disclosed their compensation.

*Further, employees who experience discrimination, retaliation, sexual harassment, or another form of harassment should immediately report it to their supervisor. If this is not a suitable avenue for addressing their complaint, employees are advised to contact another member of management or their human resources representative. No employee shall be discriminated against, harassed, intimidated, nor suffer any reprisal as a result of reporting a violation of this policy. Furthermore, any employee, supervisor, or manager who becomes aware of any such discrimination or harassment should immediately report it to executive management or the human resources office to ensure that such conduct does not continue.*

Contractor agrees that to the extent of any inconsistency, omission, or conflict with its current non-discrimination and non-retaliation employment policy, the Contractor has expressly adopted the provisions of the City's Minimum Non-Discrimination Policy contained in Section 5-4-2 of the City Code and set forth above, as the Contractor's Non-Discrimination Policy or as an amendment to such Policy and such provisions are intended to not only supplement the Contractor's policy, but will also supersede the Contractor's policy to the extent of any conflict.

UPON CONTRACT AWARD, THE CONTRACTOR SHALL PROVIDE A COPY TO THE CITY OF THE CONTRACTOR'S NON-DISCRIMINATION AND NON-RETALIATION POLICIES ON COMPANY LETTERHEAD, WHICH CONFORMS IN FORM, SCOPE, AND CONTENT TO THE CITY'S MINIMUM NON-DISCRIMINATION AND NON-RETALIATION POLICIES, AS SET FORTH HEREIN, OR THIS NON-DISCRIMINATION AND NON-RETALIATION POLICY, WHICH HAS BEEN ADOPTED BY THE CONTRACTOR FOR ALL PURPOSES (THE FORM OF WHICH HAS BEEN APPROVED BY THE CITY'S EQUAL EMPLOYMENT/FAIR HOUSING OFFICE), WILL BE CONSIDERED THE CONTRACTOR'S NON-DISCRIMINATION AND NONRETALIATION POLICY WITHOUT THE REQUIREMENT OF A SEPARATE SUBMITTAL

- C. **Sanctions:** Our firm understands that non-compliance with Chapter 5-4 and the City's Non-Retaliation Policy may result in sanctions, including termination of the contract and suspension or debarment from participation in future City contracts until deemed compliant with the requirements of Chapter 5-4 and the Non-Retaliation Policy.
- D. **Term:** The Contractor agrees that this Non-Discrimination and Non-Retaliation Certificate of the Contractor's separate conforming policy, which the Contractor has executed and filed with the Owner, will remain in force and effect for one year from the date of filing. The Contractor further agrees that, in consideration of the receipt of continued Contract payment, the Contractor's Non-Discrimination and Non-Retaliation Policy will automatically renew from year-to-year for the term of the underlying Contract.

**DATED THIS 4th DAY OF** September, 2015.

**CONSULTANT:** CDM Smith Inc.

**AUTHORIZED SIGNATURE:**



**TITLE:** Project Principal

END



## APPENDIX A

## OF THE TITLE VI ASSURANCES

During the performance of this contract, the contractor, for itself, its assignees and successors in interest (hereinafter referred to as the "contractor" agrees as follows:

1. Compliance with Regulations: The contractor shall comply with the Regulations relative to nondiscrimination in Federally-assisted programs of the Department of Transportation (hereinafter, "DOT") Title 49, Code of Federal Regulations, Part 21, as they may be amended from time to time, (hereinafter referred to as the Regulations), which are herein incorporated by reference and made a part of this contract.
2. Nondiscrimination: The contractor, with regard to the work performed by it during the contract, shall not discriminate on the grounds of race, color, or national origin in the selection and retention of subcontractors, including procurements of materials and leases of equipment. The contractor shall not participate either directly or indirectly in the discrimination prohibited by section 21.5 of the Regulations, including employment practices when the contract covers a program set forth in Appendix B of the Regulations.
3. Solicitations for Subcontracts, Including Procurements of Materials and Equipment: In all solicitations either by competitive bidding or negotiation made by the contract for work to be performed under a subcontract, including procurements of materials or leases of equipment, each potential subcontractor or supplier shall be notified by the contractor of the contractor's obligations under this contract and the Regulations relative to nondiscrimination on the grounds of race, color, or national origin.
4. Information and Reports: The contractor shall provide all information and reports required by the Regulations or directives issued pursuant thereto, and shall permit access to its book, records, accounts, other sources of information, and its facilities as may be determined by the Recipient or the Texas Department of Transportation to be pertinent to ascertain compliance with such Regulations, orders and instructions. Where any information required of a contractor is in the exclusive possession of another who fails or refuses to furnish this information the contractor shall so certify to the Recipient, or the Texas Department of Transportation as appropriate, and shall set forth what efforts it has made to obtain the information.
5. Sanctions for Noncompliance: In the event of the contractor's noncompliance with the nondiscrimination provisions of this contract, the Recipient shall impose such contract sanctions as it or the Texas Department of Transportation may determine to be appropriate, including, but not limited to:
  - (a) withholding of payments to the contractor under the contract until the contractor complies, and or (b) cancellation, termination or suspension of the contract, in whole or in part.
6. Incorporation of Provisions: The contractor shall include the provisions of paragraphs (1) through (6) in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Regulations, or directives issued pursuant thereto. The contractor shall take such action with respect to any subcontract or procurement as the Recipient or the Texas Department of Transportation may direct as a means of enforcing such provisions including sanctions for non-compliance: Provided, however, that, in the event a contractor becomes involved in, or is threatened with, litigation with a subcontractor or supplier as a result of such direction, the contractor may request the Recipient to enter into such litigation to protect the interests of the Recipient, and, in addition, the contractor may request the United States to enter into such litigation to protect the interests of the United States. (DOT 1050.2, 08/24/71)

SIGNATURE: 

PRINTED NAME: Tina Petersen

COMPANY: CDM Smith Inc.

TITLE: Project Principal

DATE: September 4, 2015

END

**ATTACHMENT 1 - KEY PERSONNEL**

<b>Legal Name of Firm</b>	<b>Titles</b>	<b>Name and Certification</b>
<b>CDM Smith</b>	<b>Project Principal</b>	<b>Tina Petersen</b>
<b>CDM Smith</b>	<b>Project Manager</b>	<b>Dan Rodrigo</b>
<b>CDM Smith</b>	<b>Professional Planner II</b>	<b>Jessica Fritschke</b>
<b>CDM Smith</b>	<b>Professional Planner II</b>	<b>Donie Grimsley</b>
<b>CDM Smith</b>	<b>Professional Planner I</b>	<b>Erin Gooch</b>
<b>CDM Smith</b>	<b>Managing Planner VI</b>	<b>Sue Morea</b>
<b>CDM Smith</b>	<b>Supervisory Engineer II</b>	<b>Chris Kurtz, P.E.</b>
<b>CDM Smith</b>	<b>Supervisory Engineer II</b>	<b>Lauren Starosta, P.E.</b>
<b>CDM Smith</b>	<b>Engineer in Training III</b>	<b>Andrea Zimmer</b>
<b>CDM Smith</b>	<b>Supervisory GIS IV</b>	<b>Nicole Bradstreet</b>
<b>CDM Smith</b>	<b>Supervisory Planner VI</b>	<b>Bill Davis</b>
<b>CDM Smith</b>	<b>Supervisory Planner</b>	<b>Dave Smith</b>

<b>Legal Name of Sub - consultants</b>	<b>Titles</b>	<b>Names and Certifications</b>
<b>Adisa Public Relations, Inc.</b>	<b>President/CEO</b>	<b>Shuronda Robinson</b>
<b>Adisa Public Relations, Inc.</b>	<b>Creative Director</b>	<b>Greg Barton</b>

Legal Name of Sub - consultants	Titles	Names and Certifications
Encotech	Principal	Ali R. Kataw
Encotech	Project Manager I	Carl Holiday
Encotech	Professional Engineer IV	Lynn Brown
Encotech	Professional Engineer IIC	R. Hawkins Maldonado
Encotech	Professional Engineer IIIA	Sharon Bickford
Encotech	Professional Engineer IIIB	Eugene Raanes
GHD	Managing Engineer VI	Mike Healy
GHD	Supervisory GIS III	Kate Williams
LBG Guyton	Environmental Services Compliance Manager	James Beach
Michael Barrett	Managing Engineer V	Michael Barrett
Rifeline	Principal	Lynda Rife
Rifeline	Community Engagement Consultant	Jessica Engelhardt
Susan Roth LLC	Managing Engineer V	Susan Roth



Attachment  
CITY OF AUSTIN  
Capital Contracting Office  
REQUEST FOR CHANGE ORDER SERVICES

<b><u>NAME OF ROTATION LIST OR STAND ALONE PROJECT AND CONTRACT #:</u></b>	Consulting Services for Integrated Water Resources Plan
<b><u>PRIME CONSULTANT:</u></b>	Firm Name: CDM Smith
<b><u>SUBCONSULTANT, if applicable:</u></b>	Firm Name:
<b><u>ADDED KEY PERSONNEL</u></b> <b>ATTACH:</b> <ul style="list-style-type: none"> <li>Qualifying resume</li> <li>Appropriate experience form (Form 7, 8, 9)</li> <li>Key Personnel Request for Hourly Rate Approval Form</li> </ul>	Personnel Name: Title: Loaded Hourly Rate: Registration or License #:
<b><u>REMOVED KEY PERSONNEL</u></b>	Personnel Name: Title: Loaded Hourly Rate: Registration or License #:
<b><u>REASON FOR CHANGE:</u></b>	

PRIME CONSULTANT PRINCIPAL OR AUTHORIZED CONTRACT SIGNATORY:

_____ Name (Please Print)	_____ Signature
_____ Title (Please Print)	_____ Date

\*\*\*CITY OF AUSTIN ONLY\*\*\*

<b>Contract Sponsor Approval</b>  _____ Name  _____ Signature Date	<b>CCO Procurement Approval</b>  _____ Name  _____ Signature Date
<b>Project Manager Approval</b>  _____ Name  _____ Signature Date	<b>CCO Contract Development &amp; Admin Approval</b>  _____ Name  _____ Signature Date

**NOTE: File in Contract File**

=====

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

Project Manager: \_\_\_\_\_

Current Years of Experience: \_\_\_\_\_

Experience (Note experience relevant to the contract.): \_\_\_\_\_

*(Use the following format. Provide no more than one page per project.)*

**Project #1 Name/Location:** \_\_\_\_\_

Firm Name Work Performed Under: \_\_\_\_\_

Year Completed: \_\_\_\_\_ Construction Cost: \_\_\_\_\_

Client or Owner's Representative: \_\_\_\_\_

Title of person named above: \_\_\_\_\_

Address of person named above: \_\_\_\_\_

Phone number of person named above: \_\_\_\_\_

Project Description: \_\_\_\_\_

Work performed by Individual: \_\_\_\_\_

**Project #2 Name/Location:** \_\_\_\_\_

Firm Name Work Performed Under: \_\_\_\_\_

Year Completed: \_\_\_\_\_ Construction Cost: \_\_\_\_\_

Client or Owner's Representative: \_\_\_\_\_

Title of person named above: \_\_\_\_\_

Address of person named above: \_\_\_\_\_

Phone number of person named above: \_\_\_\_\_

Project Description: \_\_\_\_\_

Work performed by Individual: \_\_\_\_\_

**Project #3 Name/Location:** \_\_\_\_\_

Firm Name Work Performed Under: \_\_\_\_\_

Year Completed: \_\_\_\_\_ Construction Cost: \_\_\_\_\_

Client or Owner's Representative: \_\_\_\_\_

Title of person named above: \_\_\_\_\_

Address of person named above: \_\_\_\_\_

Phone number of person named above: \_\_\_\_\_

Project Description: \_\_\_\_\_

Work performed by Individual: \_\_\_\_\_

**Project #4 Name/Location:** \_\_\_\_\_

Firm Name Work Performed Under: \_\_\_\_\_

Year Completed: \_\_\_\_\_ Construction Cost: \_\_\_\_\_

Client or Owner's Representative: \_\_\_\_\_

Title of person named above: \_\_\_\_\_

Address of person named above: \_\_\_\_\_

Phone number of person named above: \_\_\_\_\_

Project Description: \_\_\_\_\_

Work performed by Individual: \_\_\_\_\_

**Project #5 Name/Location:** \_\_\_\_\_

Firm Name Work Performed Under: \_\_\_\_\_

Year Completed: \_\_\_\_\_ Construction Cost: \_\_\_\_\_

Client or Owner's Representative: \_\_\_\_\_

Title of person named above: \_\_\_\_\_

Address of person named above: \_\_\_\_\_

Phone number of person named above: \_\_\_\_\_

Project Description: \_\_\_\_\_

Work performed by Individual: \_\_\_\_\_

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

Project Principal: \_\_\_\_\_

Current Years of Experience: \_\_\_\_\_

Experience (Note experience relevant to the proposed contract.): \_\_\_\_\_

*(Use the following format. Provide no more than one page per project.)*

**Project #1 Name/Location:** \_\_\_\_\_

Firm Name Work Performed Under: \_\_\_\_\_

Year Completed: \_\_\_\_\_ Construction Cost: \_\_\_\_\_

Client or Owner's Representative: \_\_\_\_\_

Title of person named above: \_\_\_\_\_

Address of person named above: \_\_\_\_\_

Phone number of person named above: \_\_\_\_\_

Project Description: \_\_\_\_\_

Work performed by Individual: \_\_\_\_\_

**Project #2 Name/Location:** \_\_\_\_\_

Firm Name Work Performed Under: \_\_\_\_\_

Year Completed: \_\_\_\_\_ Construction Cost: \_\_\_\_\_

Client or Owner's Representative: \_\_\_\_\_

Title of person named above: \_\_\_\_\_

Address of person named above: \_\_\_\_\_

Phone number of person named above: \_\_\_\_\_

Project Description: \_\_\_\_\_

Work performed by Individual: \_\_\_\_\_

**Project #3 Name/Location:** \_\_\_\_\_

Firm Name Work Performed Under: \_\_\_\_\_

Year Completed: \_\_\_\_\_ Construction Cost: \_\_\_\_\_

Client or Owner's Representative: \_\_\_\_\_

Title of person named above: \_\_\_\_\_

Address of person named above: \_\_\_\_\_

Phone number of person named above: \_\_\_\_\_

Project Description: \_\_\_\_\_

Work performed by Individual: \_\_\_\_\_

**Project #4 Name/Location:** \_\_\_\_\_

Firm Name Work Performed Under: \_\_\_\_\_

Year Completed: \_\_\_\_\_ Construction Cost: \_\_\_\_\_

Client or Owner's Representative: \_\_\_\_\_

Title of person named above: \_\_\_\_\_

Address of person named above: \_\_\_\_\_

Phone number of person named above: \_\_\_\_\_

Project Description: \_\_\_\_\_

Work performed by Individual: \_\_\_\_\_

**Project #5 Name/Location:** \_\_\_\_\_

Firm Name Work Performed Under: \_\_\_\_\_

Year Completed: \_\_\_\_\_ Construction Cost: \_\_\_\_\_

Client or Owner's Representative: \_\_\_\_\_

Title of person named above: \_\_\_\_\_

Address of person named above: \_\_\_\_\_

Phone number of person named above: \_\_\_\_\_

Project Description: \_\_\_\_\_

Work performed by Individual: \_\_\_\_\_

=====

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

Project Engineer: \_\_\_\_\_

*(List name as shown on registration with the Texas Board of Professional Engineers (TBPE))*

Registration No.: \_\_\_\_\_ Year of Registration: \_\_\_\_\_ Current Years of Experience: \_\_\_\_\_

(Note experience relevant to the proposed contract.): \_\_\_\_\_

*(Use the following format. Provide no more than one page per project.)*

**Project #1 Name/Location:** \_\_\_\_\_

Firm Name Work Performed Under: \_\_\_\_\_

Year Completed: \_\_\_\_\_ Construction Cost: \_\_\_\_\_

Client or Owner's Representative: \_\_\_\_\_

Title of person named above: \_\_\_\_\_

Address of person named above: \_\_\_\_\_

Phone number of person named above: \_\_\_\_\_

Project Description: \_\_\_\_\_

Work performed by Individual: \_\_\_\_\_

**Project #2 Name/Location:** \_\_\_\_\_

Firm Name Work Performed Under: \_\_\_\_\_

Year Completed: \_\_\_\_\_ Construction Cost: \_\_\_\_\_

Client or Owner's Representative: \_\_\_\_\_

Title of person named above: \_\_\_\_\_

Address of person named above: \_\_\_\_\_

Phone number of person named above: \_\_\_\_\_

Project Description: \_\_\_\_\_

Work performed by Individual: \_\_\_\_\_

**Project #3 Name/Location:** \_\_\_\_\_

Firm Name Work Performed Under: \_\_\_\_\_

Year Completed: \_\_\_\_\_ Construction Cost: \_\_\_\_\_

Client or Owner's Representative: \_\_\_\_\_

Title of person named above: \_\_\_\_\_

Address of person named above: \_\_\_\_\_

Phone number of person named above: \_\_\_\_\_

Project Description: \_\_\_\_\_

Work performed by Individual: \_\_\_\_\_

**Project #4 Name/Location:** \_\_\_\_\_

Firm Name Work Performed Under: \_\_\_\_\_

Year Completed: \_\_\_\_\_ Construction Cost: \_\_\_\_\_

Client or Owner's Representative: \_\_\_\_\_

Title of person named above: \_\_\_\_\_

Address of person named above: \_\_\_\_\_

Phone number of person named above: \_\_\_\_\_

Project Description: \_\_\_\_\_

Work performed by Individual: \_\_\_\_\_

**Project #5 Name/Location:** \_\_\_\_\_

Firm Name Work Performed Under: \_\_\_\_\_

Year Completed: \_\_\_\_\_ Construction Cost: \_\_\_\_\_

Client or Owner's Representative: \_\_\_\_\_

Title of person named above: \_\_\_\_\_

Address of person named above: \_\_\_\_\_

Phone number of person named above: \_\_\_\_\_

Project Description: \_\_\_\_\_

Work performed by Individual: \_\_\_\_\_



11490 Westheimer, Suite 700  
Houston TX 77077  
tel: 713-423-7300  
fax: 713-840-0173

April 28, 2016

Ms. Teresa Lutes  
City of Austin, Austin Water  
625 East 10th Street, Suite 800  
Austin, TX 78701

Subject: Consulting Services for Integrated Water Resource Plan  
Solicitation Number: CLMP179  
Draft Proposal and Fee Estimate – Revision 2

Dear Ms. Lutes:

CDM Smith Inc. appreciates the opportunity to provide engineering and consulting services to Austin Water (AW) for their Integrated Water Resource Plan (IWRP). Enclosed is a draft Scope of Work in **Attachment A**. Services will begin as soon as authorization is received and we understand that the project is anticipated to extend for 18 months, from approximately July 2016 through December 2017.

This submittal incorporates the following changes:

- Updated scope of work from Encotech, GHD, Rifeline and Susan Roth Communications
- Updated scope to address AW and IWRP Task Force Comments
- Updated schedule based on scope changes

CDM Smith will perform this project on a “Stipulated Sum” basis as defined in the contract for a lump sum amount of \$999,969. We have prepared a revised fee estimate summary and it is included as **Attachment B**. The rates used for billing the scope of work listed above will use the City of Austin approved Category 2 rates for CDM Smith as of April 11, 2016. Draft proposals from subconsultants who will be supporting this effort are included in **Attachment C**.







Consulting Services for Integrated Water Resource Plan  
April 28, 2016

On behalf of the entire CDM Smith Team, Dan Rodrigo and I are extremely excited about this opportunity to work with Austin Water on this marquee IWRP. Please do not hesitate to contact Dan or myself should you have any questions regarding the enclosed proposal.

Very truly yours,

A handwritten signature in black ink, reading "Tina Petersen".

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

A handwritten signature in black ink, reading "Dan Rodrigo".

Dan Rodrigo, Senior Vice President  
Project Manager  
CDM Smith Inc.





Consulting Services for Integrated Water Resource Plan  
April 28, 2016

## **Attachment A**

### **Draft Scope of Work - Consulting Services for Integrated Water Resource Plan**

## SCOPE OF WORK

# Consulting Services for Development of an Integrated Water Resources Plan

April 29, 2016

This scope of work is to provide assistance to Austin Water (AW) with the development of the Austin Integrated Water Resource Plan (IWRP). Austin Water will work with the IWRP Task Force and others, including other City departments, stakeholder groups, and the public, in development of the IWRP. The Austin IWRP will be a planning document that will include the following:

- Open and participatory decision-making process with stakeholders (internal, public, or both) in meaningful ways;
- Demand-side (e.g., water conservation) and supply-side options for meeting water needs;
- Portfolios (combinations of options) against multiple, sometimes competing, objectives, instead of just supply reliability and cost;
- Risk and uncertainty, such as climate change; and
- Societal impacts, including benefits and costs to the environment.

### Task 1: Conduct Public Outreach and Participation

CDM Smith will use the IWRP Public Outreach Framework as a guide throughout our work, focusing on an objectives driven process that will be geared towards gathering meaningful public input to develop a plan that is representative of Austin community values. For this task we will:

1. Develop a Public Outreach and Participation Plan – This outreach plan presents our overall approach in engaging the public for the duration of the IWRP and will guide our activities. The plan will identify key public stakeholder groups that reflect the diversity of Austin's population and the methods of the proposed public engagement. CDM Smith will assist AW in identifying key stakeholder groups and, if applicable, where and how often they formally meet. For the Key Public Stakeholder Groups, the CDM Smith Team will recommend how best to engage these groups.
2. Assist with developing up to ten (10), 2 hour Outreach events, which may include attending existing stakeholder group meetings and/or small group meetings with targeted groups of stakeholders identified in the Participation Plan. Assistance will include helping AW plan

the events, identifying existing community meetings to attend, providing ideas for public interaction, and reviewing materials for events, including surveys. Customer surveys will be collected at stakeholder events, and a summary report will be provided. Surveys will be developed by AW and the CDM Smith team will review and provide feedback.

3. Conduct three (3) Public Workshops – In addition to Austin Water attending scheduled meetings of Key Public Stakeholder Groups, CDM Smith will plan and facilitate three IWRP Public Workshops. These workshops, with an anticipated duration of up to 3 hours, will allow stakeholders and members of the public to interact and share ideas amongst themselves in addition with Austin Water. Draft suggestions for workshop topics are:
  - Workshop #1 – Objectives of IWRP, Review Criteria
  - Workshop #2 – Baseline Water Balance, Demand-side and Supply Options
  - Workshop #3 – Portfolio Development and scoring, Initial Recommendations

#### Assumptions:

- CDM Smith Team will provide planning assistance for three (3) Public Workshops, including helping to select venue and recommending layout for room, and identification of equipment needs; and helping to identify key stakeholders to invite.
- CDM Smith Team will provide professional facilitator from sub-consultant Rifeline for 3 Public Workshops. CDM Smith PM and sub-consultant facilitator from Rifeline will participate in workshop planning calls. They will provide a scribe and note taker for the workshops to provide documentation and feedback from the meetings. In addition to Rifeline facilitator, CDM Smith PM and Principal will attend three workshops in person as will sub-consultants Susan Roth and up to one staff member from Adisa.
- CDM Smith's public outreach sub-consultants (e.g., Rifeline, Adisa, and Susan Roth) will attend up to ten (10) stakeholder events, which can be a combination of targeted stakeholder group meetings, Community Events, or Outreach Events.
- CDM Smith Team will provide technical content for all stakeholder outreach for inclusion in materials, guidance on material development, and review of collateral developed by AW. CDM Smith will also provide up to five (5) printed poster boards and up to 500 color prints for use in public meetings.
- AW will be responsible for reserving/paying for the venues for the Public Workshops, mailing out invitations and noticing of the 3 Public Workshops, providing refreshments (if so needed), providing audio/video equipment, and providing support staff for room and audio/video set up.
- AW will be responsible for reserving/paying for venues for Outreach Events, noticing/invitations for Outreach Events, and providing the majority of printed materials and other logistics for the events.
- Subconsultants supporting this task include Rifeline, Susan Roth Consulting, and Adisa Communications.

#### Deliverables:

- Public Outreach and Participation Plan
- Summary report of public outreach and participation
  - Meeting notes for 3 Public Workshops
  - Summary Report for up to 10 Outreach Events prepared by CDM Smith's public outreach sub-consultants (e.g., Rifeline, Adisa, and Susan Roth) which will include documentation of demographic data provided and participation rates
  - Summary documentation provided by AW on outreach events conducted by AW

## Task 2: Develop Methodology for Options and Portfolio Evaluation

CDM Smith will provide the City with a methodology to conduct a fair comparison of demand-side and supply-side options, as well as scoring portfolios. The 2014 task force previously identified a set of criteria which includes water supply benefit, economic impacts, environmental impacts, social impacts, implementability, and risk of alternative supplies. This will be used as a starting point. CDM Smith will work with AW (who will coordinate input from the IWRP Task Force) to refine these criteria and identify a final set of performance measures.

The methodology will first provide a review of the IWRP criteria. Formal decision-making science outlines characteristics of good criteria: (1) they should not be redundant, (2) they should be easily understood, (3) they should be measurable, and (4) they should not be large in numbers. CDM Smith will review the IWRP criteria with these characteristics in mind. The methodology will also recommend major performance metrics for the criteria.

The methodology will detail how demand-side and supply options will be characterized, screened, and compared (using metrics which provide a fair comparison). The methodology will also address whether an option is categorized as a demand- or supply-side option. CDM Smith will work closely with AW to define how options should be screened (e.g., what criteria should be used to eliminate unfeasible options), and which metrics are important for comparing the final list of options. Also included in this methodology is the process for cost-estimation of the options.

The methodology will lay out how portfolios are to be constructed (using themes which will be constructed in Task 8 with input from AW), and which technique for portfolio scoring and ranking will be used.

CDM Smith will work with AW (who will coordinate input from the IWRP Task Force) to identify water supply and demand management options for screening. The initial lists, not to exceed 25 demand management options and 22 water supply options, will potentially include selected options identified by the 2014 Task Force, the IWRP Task Force, CDM Smith, AW or others. CDM Smith will perform screening of options to select no more than 10 demand management options and 10 water supply options for evaluation.

Finally, the methodology will summarize the available tools needed for scoring options and portfolios. These tools will include CDM Smith recommended spreadsheets, as well as climate models and Water Availability Model (WAM) used by AW's other consultants to support this effort.

#### Assumptions:

- As a starting point, the IWRP criteria will be based on the Demand Management and Supply Management Evaluation Matrices developed by the 2014 Task Force.
- One in person working meeting with AW to summarize criteria and recommended performance metrics, and review methodology for scoring options and portfolios. In-person meeting will have 3 CDM Smith staff attending for up to 4 hours. This meeting will also include elements of the Project Quality Management Workshop, as described in the Project Management Task (PM.4)
- One remote working meeting with up to 2 CDM Smith staff attending for up to two hours.
- Attendance and presentation at an IWRP Task Force meeting is planned to be associated with this task. The budget assumes that the task force meeting will occur concurrently with another in-person meeting so no additional travel expenses are assumed for this task.
- A technical memorandum (TM) will be provided to AW for review. Comments received by AW on the TM will be incorporated into the IWRP report. TMs are not intended as final deliverables but working documents that will become the basis for the IWRP report. [this is assumed for all TMs throughout this scope of work. Additionally, it is assumed that for all memorandums AW gathers feedback from City of Austin staff and the IWRP Task Force and coordinates comments to develop a single, non-conflicting comprehensive document. When possible, comments will be made in “track changes” mode].
- 

#### Deliverables:

- Technical Memorandum (TM) on screening process, characterizing and scoring final criteria, performance metrics, and scoring methodology for both options and portfolios. . This will also include template for comparison of options.

### Task 3: Evaluate and Forecast Disaggregated Water Demands

CDM Smith will review and enhance AW’s 2020 and 2039/2040 water demand models and will use these models as a basis of the demand forecasting models for 2070 and 2115. The following tasks describe the specific tasks required to evaluate and forecast disaggregated water demands.

#### Task 3.1. Disaggregated Demand Forecasting Model.

CDM Smith will review AW’s existing disaggregated, end-use based water demand forecast model for the planning years 2020 and 2039/2040, including the underlying method, structure and data sources. It is anticipated that AW’s existing demand model will be an Excel-based model (with geospatial linkages) in draft form. CDM Smith’s review of the existing demand model will include coordination with GHD to characterize the data requirements and required linkages between the disaggregated demand model and the GHD Geospatial Process.

CDM Smith will enhance the 2020 and 2039/2040 demand model to include end uses for the multifamily and commercial sectors to include six commercial subsectors. This task will be achieved through assumptions of standard literature value end-uses for those sectors, with a calibration to AW’s customer overall consumption data. The end uses will be developed considering the needed data linkages between the GHD Geospatial Tool and the conservation end use analysis.

For the multifamily sector, six (6) end uses will be developed. For the commercial sector, a maximum of eight end uses will be developed per commercial subsector. .

Additionally, CDM Smith will conduct a statistical analysis of AW's historical water use to estimate elasticities for weather and price impacts. To the extent possible, given the readily available data and the best fit of the model, CDM Smith will conduct this analysis on the indoor/outdoor components of water use for the sectors. CDM Smith will enhance AW's existing demand model for the single-family sector and will develop the other sector models as such to allow for the weather and price impacts to be estimated.

To address the 2070 and 2115 planning periods, CDM Smith will build from the modified 2020 and 2039/2040 disaggregated, spatially-referenced demand model. Likewise, the 2070 and 2115 demand models will be an Excel-based model disaggregated to the Delphi Trends and Imagine Austin (DTI) polygon level by sector. The implemented level of detail in the model will be driven by the requirements of the GHD Geospatial Process, reasonable level of accuracy that can be achieved for the projections of the drivers of demand. Projecting the drivers of demand, such as employment, population, and housing, to the long-range planning horizons will rely heavily on resources such as input from AW and the City demographer, DTI projections, US Census, County Business Patterns, and zoning data sets. CDM Smith will develop an Excel-based modeling tool that includes options to select alternative model inputs for future demographic growth, water rates, median household income, weather conditions and a range of elasticities as well as climate factors which will be based on results from AW's Climate Consultant.

### **Task 3.2. Water Needs, Budgeting Options, and Approaches.**

The water demand model developed by AW and CDM Smith will be applied to perform preliminary water needs identification and quantification. In addition, the Consultant will develop a baseline water balance schematic, incorporating demands developed in Task 3.1 in addition to existing water supply information.

It is anticipated that the demand models developed in Task 3.1 will serve as the basis for this task and that additional Excel-based tools will be developed so that aggregated results can easily be reviewed. CDM Smith will work with AW to define the desired aggregations and will take into consideration the requirements of the study when developing the aggregated demands and various displays of the results.

#### **Assumptions**

- AW will develop preliminary disaggregated water demand forecasting model out to the 2020 and 2039/2040 planning horizons, with CDM Smith review. Any agreed upon revisions to the model will be carried out by AW staff. The model, or a subset thereof, will be provided to CDM Smith in MS Excel format for use in developing the extended model. AW will provide a geospatial summary of sector water demands (single-family, multifamily, commercial, wholesale, large volume, irrigation meters, City of Austin, and City of Austin irrigation meters).
- CDM Smith will enhance the 2020 and 2039/2040 models to include end uses for the commercial and multi-family residential sectors. The sector models will be enhanced to incorporate analysis of climate change and price impacts.

- AW will provide end use estimates for the single family, wholesale, large volume, irrigation meters, City of Austin, and City of Austin irrigation meters sectors.
- CDM Smith will develop the extended demand forecasting model, building from the 2020 and 2039/2040 models, for 2070 and 2115. The extended models will be developed in MS Excel format with geospatial linkages. Demographic projections will be developed with input from AW and the City demographer.
- Two working meetings with AW staff, of which one will be an in person working meeting to review AW's demand model. The other meeting will be a remote meeting to present CDM Smith's extended forecast.
- All data requested related to this task will be provided by AW in an analysis ready format that requires minimal clean up or processing by CDM.
- AW's WAM Consultant will provide a baseline, existing water supply for comparison to forecasted water demands.
- Subconsultants supporting this task will include GHD will provide feedback and guidance on the desired input format for the decentralized reuse evaluation model.

#### Deliverables

- TM on CDM Smith's review/recommendations for AW Water Demand Forecast Model
- TM and MS Excel model with geospatial linkage on the following:
  - CDM Smith's 2020 and 2039/2040 demand model incorporating climate change, price elasticity, and end use for commercial and multi-family residential.
  - CDM Smith's extended demand forecast to 2070 and 2115, which will include a methodology to develop disaggregated water demand forecasting model.
  - Preliminary water needs identification, and quantification
  - Baseline water balance schematic

### Task 4: Conduct Water Conservation Potential Assessment

Water conservation programs (i.e., demand management) have been and will continue to be a critical element in Austin's management of water resources. Accordingly, AW and the IWRP Task Force have established water conservation as a major focal point for the IWRP. The purpose of Task 4 is to describe existing conservation measures implemented by AW, identify potential new measures for future implementation, screen the existing and proposed measures to a list of those considered for the future, and characterize and quantify those measures.

#### Task 4.1. Demand Management Screening.

Building off the criteria established by the 2014 task force and refined and finalized in Task 2, CDM Smith will work with AW to screen the universe of demand management options down to those measures which should be evaluated. The initial list, not to exceed 25 measures, will be developed by CDM Smith based on the existing measures already implemented or planned within the AW service area, as identified in Task 4.7, and potentially include selected additional measures identified by the 2014 Task Force, IWRP Task Force, CDM Smith or AW which have potential for success within the AW service area. The list of measures may also include any cooperative



conservation arrangements identified in Task 4.6. This analysis will consider results of the Water Conservation Study developed by the City's Office of Sustainability.

Each potential measure initially identified will be screened according to the factors defined in Task 2. The review of these measures will be cursory, based on the expertise and knowledge of the CDM Smith team and AW staff. The result of this task will be an approved list of no more than 10 demand management measures to be fully evaluated and thereby carried forth into the subsequent tasks.

#### **Task 4.2. Evaluate Demand Management Options.**

Working from the final list developed in Task 4.1 the criteria and methodology developed in Task 2, and using the demand models developed in Task 3.1, CDM Smith will evaluate and characterize the demand management measures under consideration. The evaluation will include the characterization needed to properly rank and score each measure within the matrix and details needed to quantify the demand reduction opportunity (Task 4.4) and develop the cost and yield data (Task 4.5). CDM Smith will build upon the conservation program assessments conducted by AW staff, utilizing, to the extent practical, existing calculations, assessments, and data.

At the onset of this task, CDM Smith will review all data previously provided to by AW in support of other tasks and will identify any additional data requirements to be provided by AW.

#### **Task 4.3. Developing Cost Benchmarks.**

CDM Smith will work with AW to establish a set of cost benchmarks. The basis for this analysis will be discussed with AW at the onset of this task. AW has previously developed cost benchmarks for water conservation programs and will provide details to CDM Smith for review. CDM Smith will review the existing AW water conservation cost benchmarks and, with discussion with AW, create new or update the existing benchmarks as agreed upon.

#### **Task 4.4. Identify Demand Reduction Opportunities.**

The demand management strategies identified in Task 4.2 and the demand model developed in Task 3, CDM Smith will identify the potential demand reduction opportunities for the evaluated measures. The demand savings will be calculated in close coordination so that potential impacts, such as reduced wastewater, are quantified. Savings will be calculated based on parameters of the demand forecast model for the 2020, 2039/2040, 2070, and 2115 planning horizons.

#### **Task 4.5. Develop Cost and Yield Data.**

Implementation costs and resulting savings will be developed for up to 10 demand management measures. CDM Smith will conduct an economic benefit-cost assessment that will include calculation of the net present value, benefit-cost ratio, levelized unit cost (e.g., dollars per thousand gallons saved), pay-back period, and return on investment for each measure. These economic indicators will be used to further rank the measures on the basis of economic benefit. The unit cost of measures will be compared with unit costs of current water and other supply alternatives in Task 7 and later tasks for a fair comparison.

#### **Task 4.6. Coordination and Cooperative Conservation Improvements.**

CDM Smith will evaluate and recommend opportunities for coordination of demand management measures between LCRA (wholesale raw water provider) and AW, City of Pflugerville, Barton

Springs Edwards Aquifer Conservation District and potentially other adjacent communities. This type of coordinated approach may identify additional measures to be evaluated in Task 4.1.

#### **Task 4.7. Summarize Conservation Progress.**

CDM Smith will summarize AW's progress to date, starting with the program's genesis in 1985 and summarizing achievements as documented in the 2006 and 2009 Citizen Water Conservation Implementation Task Force, the 2012 Report prepared as part of AW's pro-rata curtailment plan, and supplement with input from AW staff. This task will summarize the conservation measures implemented, both past and current, and serve as a foundation for Task 4.1 through Task 4.5.

#### **Assumptions**

- One in person working meetings with AW staff, one to select the measures for full evaluation as stated in Task 4.1. One remote meeting is planned to review the results from Task 4.5.
- Attendance and presentation at a IWRP Task Force meeting is planned. The budget assumes that the task force meeting will occur concurrently with another in-person meeting so no additional travel expenses are assumed for this task.
- The number of individual measures to screen will not exceed 25. Not more than 10 demand side options will be identified for evaluation.
- CDM Smith will provide AW a data requirements request at the onset of Task 4.2. Data will be provided in the requested format by AW to the extent possible.
- Amy Vickers (to be replaced by Peter Mayer) will provide support on Task 4. Susan Roth who will lead Tasks 4.6 and 4.7 and development of Task 4 memorandum.
- Subject to further appropriations and written authorizations from the Owner, in accordance with Section 3.6 of the Professional Services Agreement for Consulting Services for Integrated Water Resource Plan between Austin, Texas and CDM Smith, Inc., the Consultant agrees to provide the following scope of services in the amounts specified below:
  - Additional demand management options can be included in the initial screening step for \$3,500 per option, and in the evaluation step for \$10,500 per option.

#### **Deliverables**

- TM on Conservation Potential Assessment, which will include information on Tasks 4.6 and 4.7.

### **Task 5: Incorporate Impacts of Climate Change on Water Supply and Demand**

Climate change is projected to cause changes in both long-term trends as well as the frequency and magnitude of extreme events associated with temperature and precipitation (floods, drought, heat, and fires). There is uncertainty associated with these changes, and the changes in the Colorado River basin that may impact Austin's supply may be different from the changes in Austin's service

zone that may impact demand. A robust climate-resilient water plan will address these four aspects of climate change: trends, extremes, regional variations, and uncertainty.

### **Task 5.1. Impacts of Climate Change on Supply- and Demand-Side Options.**

CDM Smith will work with AW's climate science (Dr. Katherine Hayhoe) and hydrology consultants (Dr. Richard Hoffpauir) to incorporate climatic and hydrologic forecast data into the evaluation of supply- and demand-side options identified in Tasks 4 and 6 – including making the recommendation to develop a set of climate ensembles specific to AW to characterize the following:

- Hotter Temperature, Lower Precipitation
- Warmer Temperature, Higher Precipitation

CDM Smith will conduct a vulnerability assessment of supply-side and demand-side options. A climate resiliency score that indicates how well the option would perform under projected climate changes (including trends and extreme events) will be generated for different water supply (both supply-side and demand-side) options. The climate resiliency score may be a qualitative score that is informed by quantitative information.

Climate-change adjusted streamflow and evaporation time series will be developed by ATMOS Research and Consulting (Dr. Katherine Hayhoe) using statistical regression relationships between local hydrology and climate. CDM Smith will work with Dr. Hoffpauir to implement the new streamflow and evaporation patterns into the WAM analysis and evaluate changes to reservoir storage, availability, and reliability as well as establish the strategy's dependence on climatic conditions as input to both supply –and demand-side scoring in Task 7 and as input to portfolio evaluation in Task 8.

### **Task 5.2. Water Demand Impacts.**

Using the same selected climate change scenarios for supply impacts, CDM Smith will evaluate changes to monthly demands using demand forecast models developed in **Task 3** based on normal weather conditions—keeping all variables the same except future weather variables. The resulting demand forecasts will then be evaluated in various portfolios to assess climate change impacts on reliability under projected climate changes (again including trends, extreme events, and regional variations).

#### **Assumptions**

- Up to two climate change scenarios will be incorporated into the water supply and demand evaluations.
- The CDM Smith team will provide guidance regarding selection of the two climate change scenarios; however, responsibility for the evaluation and final selection of these scenarios belongs to AW, AW's Climate Consultant (Dr. Katherine Hayhoe), and AW's WAM Consultant (Dr. Richard Hoffpauir).
- Two remote meetings with AW staff, one to establish water supply impacts and one to establish water demand impacts
- Climate change impact analysis will be provided by Dr. Katherine Hayhoe who is procured by the City separately outside of this scope of work

- WAM support will be provided by Dr. Richard Hoffpauir who is procured by the City separately outside of this scope of work
- Assessment of extreme events impacts on water supply options and water demand may not have robust data projections and thus may require a more qualitative approach, including looking at thresholds or sensitivities. CDM Smith will provide guidance on the best available practices for this effort with the analysis being performed by ATMOS Research and AW.

#### Deliverables

- TM on Incorporating Climate Change, which will include incorporation of water supply and water demand into option scoring and portfolio evaluation

### Task 6: Evaluate Water Supply and Diversification Options

Given Austin's reliance on a single source that is vulnerable to climate change and drought, evaluation of water supply and diversification options is of critical importance for the IWRP.

#### Task 6.1. Identify Water Supply Options for Matrix Evaluation.

CDM Smith will work with AW to identify no more than 22 water supply options for screening. AW will work with the Task Force and others to gather input on potential options to be included in the screening process. CDM Smith will perform screening of options to select no more than 10 options for evaluation in Task 6.2.

#### Task 6.2. Evaluate Water Supply Options.

CDM Smith will use performance measures to evaluate the selected water supply options. Potential supply options for evaluation include, but are not limited to:

Surface water supply options such as:

- lake storage and operations,
- off-channel reservoir storage and operations,
- outflow from Barton Springs/other local springs and creeks into Lady Bird Lake,

Reuse options such as:

- direct potable reuse,
- direct non-potable reuse,
- indirect reuse (for potable and non-potable)

Decentralized options (analyzed in **Task 6.3** below) such as:

- green infrastructure,
- on- site systems for stormwater, graywater, black water, wastewater skimming, AC condensate, recycled water package plants

Groundwater options such as:

- desalination of brackish groundwater or other saline water sources,
- aquifer storage and recovery (ASR)

The evaluation of water supply options will take into account the objectives defined in **Task 2** and other considerations that are important to AW such as the Lower Colorado River Authority (LCRA) Water Management Plan (and revisions), emergency orders, and LCRA environmental flow requirements; water supply agreements between the City and LCRA in the form of firm contracts for stored water and run- of-river backup, and additional supplies for steam-electric demands; energy-water nexus dynamics; surface and groundwater law/permitting; City of Austin return flows and the Joint Application for Reuse (JAR) pending at TCEQ; potable/non-potable connection standards and public health and safety; end use water quality; potential policy and financial incentives; climate change impacts; environmental and water quality impacts, flows, and habitat; identification of potential impacts on wastewater collection and treatment systems (pipe flow rate reductions and/or impacts to waste constituent concentrations); and wastewater, graywater, and rainwater use, codes, and ordinances, and incorporation of Net Zero concepts.

In performing this evaluation, CDM Smith will estimate planning-level costs for the options.

CDM Smith will coordinate with Dr. Richard Hoffpauir and Dr. Katherine Hayhoe (procured by the City separately outside of this scope of work) to incorporate the results of WAM analyses, primarily for surface water on a regional/basin-wide scale, into the evaluation of water supply options.

### **Task 6.3. Perform Comprehensive Distributed Supply Analysis.**

GHD will utilize its Geospatial Process to analyze the supply yield and cost-effectiveness of distributed, alternative water supplies to include avoided costs of deferring large water and wastewater treatment plant expansions due to an alternative supply (stormwater, graywater, blackwater, and wastewater skimming). End use water demands will be matched with potential sources and availability of supplies for a pre-defined resolution of spatial disaggregation. GHD and CDM Smith work with AW to develop the level of geospatial disaggregation based on availability of data (both in terms of water demands, and GIS layers for water, wastewater, recycled water and stormwater systems).

The geospatial analysis will start by developing a baseline map, including data such as zoning, flood plains, major infrastructure, and boundaries. Maps will be generated for both potable and non-potable water consumption for the current and future scenarios to show hot spots that will inform opportunities for water conservation and alternative water supply. We will then work with AW's hydrology consultant to evaluate impacts of storm/gray/black water capture scenarios on environmental and return flows. From this analysis, we will integrate our findings into a decision making framework for reuse to provide guidance on the effective uses of reclaimed water by AW.

Distributed options will be summarized by location, potential supply yield, and cost. Additional information to be used to populate the Options Template developed in Task 2 will be summarized and may include cost-effectiveness, impact on return flows to River, water quality, and other impacts (energy and environment).

#### **Assumptions**

- GHD and CDM Smith will provide AW a data requirements request at the onset of this task. Data will be provided in the requested format by AW to the extent possible. All data requested related to this task will be provided by AW in an analysis ready format that requires minimal clean up or processing by CDM Smith.

- The number of initial individual supply side options to screen will not exceed 22. Not more than 10 supply side options will be identified for characterization for use in portfolio development. This includes options developed as part of Task 6.3.
- Supply-side options will be screened using data generated from previous work completed by AW. CDM Smith will review this data and identify cost and other data may need to be updated for use in the evaluation process. AW will work with CDM Smith to update provided cost and other information as necessary. CDM Smith understands some of these options may not have previous studies or cost data completed. Our budget includes CDM Smith conceptualizing up to six (6) supply options, including options identified in Task 6.3, that have little to no information from previous studies. Conceptual level evaluations will include development of information to populate the Options Template developed in Task 2, which may include identification of estimated yield (to be performed by WAM consultant), source water, estimated water quality, end use, yield, high level cost estimate, and infrastructure requirements.
- WAM support will be provided by Richard Hoffpauir who is procured by the City separately outside of this scope of work
- Two in person working meetings with AW staff, one to review results of water supply option evaluation (with up to two CDM Smith staff in attendance) and one to review results of the decentralized supply analysis (with two CDM Smith staff in attendance as well as two staff from GHD)
- Subconsultants supporting this task will include the following:
  - Task 6.2: Crespo and LBG Guyton will support water supply option evaluations
  - Task 6.3: GHD will lead Task 6.3 with review from Dr. Michael Barrett
- Attendance and presentation at a IWRP Task Force meeting is planned. The budget assumes that the task force meeting will occur concurrently with another in-person meeting so no additional travel expenses are assumed for this task.
- Subject to further appropriations and written authorizations from the Owner, in accordance with Section 3.6 of the Professional Services Agreement for Consulting Services for Integrated Water Resource Plan between Austin, Texas and CDM Smith, Inc., the Consultant agrees to provide the following scope of services in the amounts specified below:
  - Additional supply options can be included in the initial screening step for \$5,000 per option, included in the evaluation step for \$12,000 per option and included as a new option that requires conceptualization for \$16,500 per option.

#### Deliverables

- TM on water supply options evaluation results and associated option templates for each strategy, as defined in Task 2
- TM on comprehensive distributed supply analysis.
- All Geospatial Process datasets and results, including geospatial map products in ArcGIS compatible format (shapefiles, geodatabases or other similar formats).

## Task 7: Characterize Demand and Supply Side Options

CDM Smith will use the process described in Task 2 to score the demand and supply side options identified for characterization.

CDM Smith will prepare a matrix that compares the screened options against the performance measures identified in Task 2, such as supply yield, climate resiliency, water quality, and environmental impacts. A unit-cost metric will also be developed that normalizes the comparison of these options. For example, some options provide a consistent supply throughout the year and under most hydrologic conditions, while other options only provide supplies when water is captured and not uniform throughout the year. The unit cost methodology will allow for a fair comparison of the options.

### Assumptions

- A total of 20 options combined from Task 4 (demand side) and Task 6 (supply side) will be fully characterized and reconciled.
- One in person meeting with AW to review options matrix with up to two CDM Smith staff in attendance.
- One coordination meetings (remote) with AW.
- Subconsultants supporting this task will include Crespo, Susan Roth, Michael Barrett, and LBG Guyton.

### Deliverables

- TM on Comparison of Options which will include a reconciled list of demand and supply side options

## Task 8: Develop and Evaluate Portfolios

### Task 8.1. Process to Develop Portfolios.

CDM Smith will work closely with AW to build portfolios from the strategies and options evaluated in Task 7 that satisfy baseline conditions (no climate change impacts). As described in Task 2, AW and the IWRP Task Force input is a critical aspect to this process.

The portfolios will consider different mixes of the characterized options from Task 7 (both demand side and supply side). Themes, to be developed in this task, will be used to develop the portfolios, such as: high resiliency, lower cost, higher sustainability. Up to five (5) initial portfolios will be developed, with the potential for creating up to two (2) hybrid portfolios (re-combining the initial portfolios) to develop super performing ones.

### Task 8.2. Portfolio Evaluation.

CDM Smith will use a spreadsheet-based evaluation to add up the supplies for each portfolio, identify and eliminate any “competing” options, and ultimately compare to projected demands. As part of this evaluation, we will work with Dr. Hoffpauir to conduct WAM analyses that will provide input to the portfolio evaluation process. Reliability of the portfolios will be assessed using the WAM model under 3 future conditions (1 baseline + 2 climate change scenarios).

### Assumptions



- Up to 5 initial portfolios will be developed and evaluated using the portfolio evaluation spreadsheet with up to 2 hybrid portfolios
- One in person meetings with AW with one meeting to obtain input on the portfolio screening, for up to four hours with up to two staff attending
- One remote meeting with AW one meeting to present results, for up to four hours with up to two staff attending
- One coordination meetings (remote) with AW
- Attendance and presentation at a IWRP Task Force meeting is planned. The budget assumes that the task force meeting will occur concurrently with another in-person meeting so no additional travel expenses are assumed for this task.
- Each portfolio will be evaluated for two timeframes (mid and long-term, and for 1 baseline scenario and 2 climate change scenarios (discussed in Task 5).
- The CDM Smith team will provide portfolio definitions and guidance; however, responsibility for each required WAM simulation belongs to AW and AW's WAM Consultant (Dr. Richard Hoffpauir). The reliability analysis in WAM may require up to 15 WAM simulations (3 scenarios x 5 portfolios).
- Task 8, including WAM analysis, may involve up two additional iterations in sequence with Task 9 and 10 to account for development of hybrid portfolios

#### Deliverables

- TM to summarize portfolio evaluation which will include:
  - Prioritized option portfolios with quantitative and qualitative information including, but not limited to, storage graphs using WAM-based conditional reliability modeling results
  - List of selected and prioritized option portfolios for further evaluation

### Task 9: Conduct Financial Analysis and Evaluation

#### Task 9.1. Evaluate Financial Considerations.

To create a comprehensive estimate of the supply and demand-side portfolios selected in Task 8, CDM Smith will develop a cost spreadsheet that will be used to evaluate financial considerations for each of the portfolios. The Unified Cost Model (UCM), an MS Excel based spreadsheet which was developed by the Texas Water Development Board for regional water planning, will form the basis of the costing spreadsheet. Once cost analysis is complete on these projects, the resulting cost estimate will be organized into a summary spreadsheet.

#### Task 9.2. Financing Options.

CDM Smith will summarize, at a high level, potential financing options including alternate project delivery methods. This summary will identify potential opportunities for regional partnerships and cooperation, cost sharing, and revenue-positive or revenue-neutral opportunities for consideration in infrastructure and facilities planning when feasible. Financing options to be explored will include expansion of the use of impact fees to support projects aimed at improving water use efficiency.

CDM Smith will also evaluate funding mechanisms and requirements for decentralized, graywater, and rainwater harvesting options, exploring the use of private capital options to finance



decentralized infrastructure throughout the city, including a potential Service Extension Request (SER) process approach.

CDM Smith will conduct a survey of other cities and summarize the implications of decentralized infrastructure on other cities revenue streams, including revenue opportunities, and approaches taken to develop fee for service models. It is assumed that the cities used for the case studies in Task 9.3 will be used to conduct the survey.

### **Task 9.3. Alternative Utility Rate Structure and Business Model Approaches.**

CDM Smith will develop case studies for up to three water-conscious cities with recent alternative rate structure innovations that are intended to address revenue variability while maintaining a conservation incentive. This qualitative analysis will examine techniques from cities that will be determined in coordination with AW.

#### **Assumptions**

- The IWRP Cost Spreadsheet will be of a similar level of detail to and build on previous cost tools developed by the Consultant (Colorado) and also the Unified Costing Model developed by the Texas Water Development Board. The IWRP Cost Spreadsheet will include both capital and O&M costs.
- Up to three (3) case studies will be included in Task 9.3.
- Two coordination meetings (remote) with AW with up to 2 CDM Smith Staff attending)
- Subconsultants supporting this task will include Encotech, who will use the Cost Spreadsheet to prepare cost estimates for each supply and demand-side portfolio, Susan Roth who will assist with Financing Options and GHD, who will assist with the Australian case study.
- Task 9 may involve up two additional iterations in sequence with Task 8 and 10.

#### **Deliverables**

- TM to include the following:
  - financial evaluation for up to five (5) portfolios (and up to two (2) hybrid portfolios) which will be provided as a Populated IWRP Cost Spreadsheet and Unified Costing Model
  - case studies on financing options.
  - case studies on up to three alternative utility rate structure business model approaches.

### **Task 10: Score Portfolios**

CDM Smith will score and rank portfolios using a process called multi-criteria decision analysis (MCDA). This process will use the criteria and criteria weighting developed from Task 2, along with performance measures, to compare the portfolios. A simple spreadsheet tool will be used to add up the supplies from each portfolio to meet specified water demands.

CDM Smith will use Criterium Decision Plus ([www.infoharvest.com](http://www.infoharvest.com)) software to rank the portfolios. This software converts the uniquely measured units for the criteria into a standardized units for

easy comparison and ranking of alternatives. Because metrics are measured in different units (e.g, supply in acre-feet, cost in dollars, water quality in milligrams per liter) it is necessary to convert these metrics into standardized scores so they can be compared to each other. The ranking of portfolios will easily show trade-offs between them and allow for stakeholders to understand the advantages and disadvantages of the portfolios.

#### Assumptions

- Up to 5 initial portfolios will be developed and evaluated using the portfolio evaluation spreadsheet with up to 2 hybrid portfolios
- One in person meeting with AW with one meeting to obtain discuss outcomes of Portfolio scoring with up to two CDM Smith staff attending
- One coordination meeting (remote) with AW
- Each portfolio will be evaluated for two planning periods (mid and long-term) and for 1 baseline scenario and 2 climate change scenarios (discussed in Task 5).
- The CDM Smith team will provide portfolio definitions and guidance; however, responsibility for each required WAM simulation belongs to AW and AW's WAM Consultant (Dr. Richard Hoffpauir). The reliability analysis in WAM may require up to approximately 15 WAM simulations (3 scenarios x 5 portfolios).
- Task 10 may involve up two additional iterations in sequence with Task 8 and 9.

#### Deliverables

- TM summarizing outcomes of Portfolio Scoring
- Populated Criterium Decision Plus software file and spreadsheet summary of portfolio rankings. (If desired, AW will be responsible for purchasing Criterium Decision Plus software separately for future use.)

### Task 11: Develop Plan Recommendations

At the conclusion of the scoring processes for supply/demand options and portfolios, we will arrive at a set of recommendations that reflect the community's values in terms of affordability, supply diversity, sustainability, environmental protection, and drought resilience. These will be organized as short-, medium-, and long-term recommendations, consistent with previous AW concepts. We will also identify short term strategies that have potential as drought response options.

We will prepare three case studies that highlight how similar strategies within the Plan recommendations have been implemented by other cities/agencies and found to have been successful. AW will work with CDM Smith to identify the strategies and cities to be included in the case studies.

#### Assumptions

- One in-person meeting with AW on initial recommendations with up to three staff attending
- One coordination meeting (remote) with AW(with up to three CDM Smith staff attending)

- Attendance and presentation at a IWRP Task Force meeting is planned. The budget assumes that the task force meeting will occur concurrently with another in-person meeting so no additional travel expenses are assumed for this task.

#### Deliverables

- TM that includes
  - Supply and demand management plan recommendations
  - Updated short-term tiered drought management plan
  - Medium and long term plan recommendations
  - Case studies for demand and supply side options

### Task 12: Develop Plan Report

The CDM Smith Team views the Austin IWRP report as a document that will be developed throughout the 18-month timeframe for the contract. We will develop the deliverables for each task as technical memoranda, which will be compiled into a comprehensive report at the conclusion of the study. The report will be a cohesive document that tells a complete picture of the planning process, evaluation of options and portfolios, and recommendations.

CDM Smith will identify potential risk triggers and uncertainties that may impact the implementation of Plan recommendations developed in Task 11. The City envisions the potential for plan updates every 5 years—we propose to develop a process to revisit the plan which is timed to coincide with the Texas Regional Water Planning process and update the IWRP in a structured and comprehensive manner.

#### Assumptions

- One in-person meeting with AW for up to 2 hours, up to 2 CDM Smith staff attending.
- One coordination meeting (remote) with AW with up to 2 CDM Smith staff attending
- AW will provide a style guide to CDM Smith at project inception detailing the “look and feel” of memorandum and report text, mapping/figures, and tables.
- One set of comments will be provided for the Draft Plan and incorporated by CDM Smith. Upon approval by AW that the comments have been reflected and incorporated, a Final Plan will be developed.
- Subconsultants supporting this task will include K2, who will provide printing services on the project and Susan Roth, GHD, Michael Barrett who will provide written text for the report and/or review services.
- Final Plan will consist of 1 electronic version (PDF) and 10 hard copies

#### Deliverables

- Draft Plan (75% complete)
- Final Draft Plan, incorporating comments coordinated by AW

## **PM: Project Management**

The objective of this task is to assure the Project is delivered to the expectations of the AW Project Team. Only hours specifically related to project management are included in this task; technical task management is reflected in each individual task.

### **Task PM.1. Communications and Project Management Plan.**

CDM Smith will prepare a Communications and Project Management Plan to include procedures and protocols that will support effective coordination of the CDM Smith Project Team.

### **Task PM.2. Project Team eRoom.**

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

### **Task PM.3. Project Quality Control Plan.**

Under this task, a Quality Control Plan will be prepared. The goal of this plan will be to establish a Quality Assurance (QA) process that includes all activities to ensure that the Quality Control (QC) process for the Project is being followed. The following are key tenets of CDM Smith's quality process:

- Develop Project-specific QC processes and a schedule for their completion;
- Provide that the Quality Management Plan meets the requirements of the City;
- Assign an independent QA/QC manager to ensure that all quality control procedures are being followed and that products and services provided meet both CDM Smith and AW requirements.

### **Task PM.4. Project Quality Management Workshop.**

Quality Management (PQM) Workshop, which is a formal requirement of CDM Smith's Quality Assurance Program, and is a team-oriented working session designed to develop a deep understanding of the Project challenges and a sense of teamwork and commitment to Project success. The PQM Workshop will review two basic tenets of effective Project delivery: the importance of planning; and the value of a unified and motivated Project delivery team. The PQM Workshop will concern:

- Setting goals;
- Establishing critical success factors;
- Clarifying responsibilities; and
- Anticipating difficulties and managing risks, all of which will contribute to a successful Project.

The PQM process stresses a team approach – both to planning the Project and to executing delivery of the Project. Identifying all the key individuals that have a stake in the success of the Project and

having them actively participate in the PQM meeting is essentially a team building activity. Through the facilitated discussions, everyone develops a thorough understanding the Project and a sense of shared commitment to the Project success that cannot be accomplished by reading, phone calls or e-mails to team members. Beyond its value as a planning and a team building tool, the PQM truly is an effective Project quality management tool that is recommended for the Project.

The PQM will be incorporated into the in-person meeting held as part of Task 2 and facilitated by the CDM Smith Project Manager. The hours included in this task reflect the additional effort (2 hours for two CDM Smith staff) required to incorporate the PQM process goals into the technical workshop.

#### **Task PM.5. Bi-weekly meetings.**

Bi-weekly project management calls, which are budgeted as short (up to 30 minutes), focused calls on activities and potential issues. The bi-weekly calls will be between AW PM and CDM Smith PM, and CDM Smith Principal with others brought on if needed. This task includes preparation of agenda and meeting minutes. A detailed list of planned project meetings is included in **Attachment 1**.

#### **Task PM.6. Monthly Reporting and Project Administration.**

CDM Smith will prepare monthly status reports of Project progress, expenditures to date, cost-to-budget information, and WBE/MBE utilization and submit in conjunction with monthly services invoice. As project deliverables are submitted (i.e., technical memorandum) on a task-by-task basis, release of retainage will be requested.

#### **Task PM.7. Project Schedule.**

In order to conduct this Project in a manner consistent with the AW management team objectives, CDM Smith Project Team will develop a schedule using Microsoft Project. Once the Project schedule is established, it will be maintained throughout the Project to reflect actual progress and will include any changes requested by the AW management team. CDM Smith will provide AW access to project schedule in Microsoft Project format in Project Team eRoom. A preliminary schedule is provided in **Attachment 2**.

#### **Task PM.8. Task Force Meetings.**

This task provides in person attendance for up to five (5) Task Force meetings by one CDM Smith staff (for two hours), with the understanding that these would be limited to only when AW feels consultant would provide value in being there. It is assumed that these meetings will be coordinated with other in-person meetings conducted as part of the tasks described above and therefore, no additional travel funds have been allocated for this task.

#### **Assumptions**

CDM Smith will conduct internal coordination meetings as necessary within each phase of the Project to accomplish this goal. It is assumed that internal coordination meeting budget is incorporated into each of the technical tasks.



ATTACHMENT 1. SUMMARY OF PROJECT MEETINGS - SUBJECT TO CHANGE

TASK	TASK	In Person Meetings (1)	Remote Meetings (2)	Coordination Meetings (remote, 3)	Task Force Meetings (4)
Task 1	Conduct Public Outreach and Participation	3			
Task 2	Develop Methodology for Options Evaluation	1	1		1
Task 3	Evaluate and Forecast Disaggregated Water Demands (5)	1	1		
Task 4	Conduct Water Conservation Potential Assessment	1	1		1
Task 5	Incorporate Impacts of Climate Change on Water Supply and Demand		2		
Task 6	Evaluate Water Supply and Diversification Options (5)	2			1
Task 7	Score Demand and Supply Side Options	1		1	
Task 8	Develop and Evaluate Portfolios	1	1	1	1
Task 9	Conduct Financial Analysis and Evaluation			2	
Task 10	Score Portfolios	1		1	
Task 11	Develop Plan Recommendations	1		1	1
Task 12	Develop Plan Report	1		1	
PM	Project Management (6)			36	
	<b>Total</b>	<b>13</b>	<b>6</b>	<b>43</b>	<b>5</b>

Notes:

1. In person meetings include up to two CDM Smith staff attending a 2 hour meeting with AW staff. For Task 1, the in person meetings represent the three (3) Public Workshops (the ten Outreach Events are not included in the summary above).
2. Remote meetings include up to two CDM Smith staff attending a 2 hour meeting with AW staff.
3. Coordination meetings include up to two CDM Smith staff attending a 1 hour meeting with AW staff.
4. Task force meetings are assumed to occur concurrently with other in-person meetings. Therefore, no additional travel expenses have been budgeted for these meetings.
5. Includes participation (in person) with GHD for one meeting in this task.
6. Project management coordination meetings include up to two CDM Smith staff attending a 30-minute phone meeting with AW staff.



## ATTACHMENT 2. CDM SMITH PRELIMINARY PROJECT SCHEDULE - SUBJECT TO CHANGE

Month ---->		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
		7/16	8/16	9/16	10/16	11/16	12/16	1/17	2/17	3/17	4/17	5/17	6/17	7/17	8/17	9/17	10/17	11/17	12/17
	NTP	★																	
Task 1	Public Outreach and Participation																		
	Outreach events (estimated schedule)		❖		❖		❖		❖	❖	❖		❖		❖		❖		❖
	Workshops (estimated schedule)			◆					◆					◆					
Task 2	Options and Portfolio Methodology																		
	Meetings	◆	◇																
	Task Force Meeting (in person)	○																	
Task 3	Disaggregated Water Demands																		
	Demand Forecast through 2040																		
	Demand Forecast through 2115																		
	Water Needs																		
	Task Force Meeting (in person)	◆				◇													
Task 4	Water Conservation Potential Assessment																		
	Demand Screening																		
	Demand Management Options																		
	Performance Benchmarks																		
	Demand Reduction Opportunities																		
	Cost/Yield																		
	Coordination and Cooperative Improvements																		
	Conservation Progress																		
	Meetings	◆				◇													
	Task Force Meeting (in person)			○															
Task 5	Climate Change																		
	Supply Impacts																		
	Demand Impacts																		
	Meetings						◇		◇										

## ATTACHMENT 2. CDM SMITH PRELIMINARY PROJECT SCHEDULE - SUBJECT TO CHANGE

Month ---->		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
		7/16	8/16	9/16	10/16	11/16	12/16	1/17	2/17	3/17	4/17	5/17	6/17	7/17	8/17	9/17	10/17	11/17	12/17
Task 6	Supply Evaluation																		
	Evaluate Supply Options																		
	Decentralized Evaluation																		
	Meetings					◆		◆											
	Task Force Meeting (in person)					○													
Task 7	Characterize Demand and Supply Options																		
	Meetings							◆											
Task 8	Develop and Evaluate Portfolios																		
	Meetings									◆	◇								
	Task Force Meeting (in person)									○									
Task 9	Conduct Financial Analysis and Evaluation																		
	Financial Evaluation																		
	Financing Options																		
	Alternative Utility Rate Structure																		
	Meetings																		
Task 10	Score Portfolios																		
	Meetings												◆						
Task 11	Plan Recommendations																		
	Meetings														◆				
	Task Force Meeting (in person)														○				
Task 12	Plan Report																		
	Meetings																◆		

◇	Remote meeting
◆	In person meeting
❖	Outreach event
○	In person Task Force meeting (aligned with another in person meeting)

Schedule assumes the following:

1. Data identified during scoping meetings will be available at the start of Task 3 and will be in an analysis ready format that requires minimal clean up or processing by CDM Smith.
2. Geospatial data layers and billing data are also fully available.
3. The disaggregated demand model (which includes single family residential sector demands) will be provided within two weeks of the NTP
4. When feedback required to move on to next task, the schedule assumes 1 month for AW review coordination
5. NTP issued at the beginning of the month
6. Coordination meetings are not included on project schedule





Consulting Services for Integrated Water Resource Plan  
April 28, 2016

**Attachment B**  
**Engineering Level of Effort Fee Proposal - Subject to Change**



ENGINEERING LEVEL OF EFFORT FEE PROPOSAL - SUBJECT TO CHANGE

		Man-aging Planner VI	Super- visory Planner VI	Project Manager / Managing Planner VI	Principal / Managing Engineer IV	Supervisory Engineer II	Pro- fessional Planner II	Pro- fessional Planner II	Pro- fessional Planner I	CDM Smith Hours	CDM Smith Total Labor	Reimbur- sable Expenses	CDM Smith	Outside Professionals										Sub- consultant Mark Up	Total
		Rate/hour	\$302.24	\$171.50	\$299.13	\$201.88	\$148.26	\$108.10	\$98.42	\$111.81				Rifeline	Susan Roth	K2	Adisa	Amy Vickers (to be replaced with Peter Mayer)	Michael Barrett	Crespo	Encotech	GHD	Guyton	Total	TOTAL
TASK	DESCRIPTION												Total												
Task 1	Conduct Public Outreach and Participation	2	0	36	36	8	0	0	0	82	\$ 19,827	\$ 5,400	\$ 25,227	\$ 69,995	\$ 12,788	\$ -	\$19,150	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 5,097	\$ 132,257
Task 2	Develop Methodology for Options Evaluation	2	4	22	22	24	12	0	0	86	\$ 17,168	\$ -	\$ 17,168	\$ -	\$ 2,616	\$ -	\$ -	\$ -	\$ 770	\$ -	\$ -	\$ 4,298	\$ -	\$ 384	\$ 25,237
Task 3	Evaluate and Forecast Disaggregated Water Demands	8	12	28	24	0	248	208	4	532	\$ 65,424	\$ 4,200	\$ 69,624	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 17,011	\$ -	\$ 851	\$ 87,486
3.1	Disaggregated Demand Forecasting Model	8	12	16	20	0	224	168	0	448	\$ 54,049			\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 17,011	\$ -		\$ 71,060
3.2	Water Needs, Budgeting Options, and Approaches	0	0	12	4	0	24	40	4	84	\$ 11,376			\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -		\$ 11,376
Task 4	Conduct Water Conservation Potential Assessment	0	22	11	9	0	112	261	4	419	\$ 47,122	\$ -	\$ 47,122	\$ -	\$ 40,108	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 2,005	\$ 89,236
4.1	Demand Management Screening	0	0	1	0	0	16	16	0	33	\$ 3,603			\$ -	\$ 3,488	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -		\$ 7,091
4.2	Demand Management Options	0	6	1	1	0	24	24	0	56	\$ 6,486			\$ -	\$ 3,488	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -		\$ 9,974
4.3	Developing Water Use Benchmarks	0	6	4	2	0	24	24	0	60	\$ 7,586			\$ -	\$ 4,650	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -		\$ 12,236
4.4	Identify Demand Reduction Opportunities	0	4	1	1	0	20	76	0	102	\$ 10,829			\$ -	\$ 4,650	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -		\$ 15,479
4.5	Develop Cost and Yield Data	0	6	4	2	0	20	73	0	105	\$ 11,976			\$ -	\$ 3,488	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -		\$ 15,464
4.6	Coordination and Cooperative Conservation Improvements	0	0	0	1	0	4	24	0	29	\$ 2,996			\$ -	\$ 8,719	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -		\$ 11,716
4.7	Summarize Conservation Progress	0	0	0	2	0	4	24	4	34	\$ 3,645			\$ -	\$ 11,626	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -		\$ 15,271
Task 5	Incorporate Impacts of Climate Change on Water Supply and Demand	2	2	22	16	32	32	40	4	150	\$ 23,346	\$ -	\$ 23,346	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 7,499	\$ -	\$ -	\$ -	\$ 375	\$ 31,220
5.1	Water Supply Impacts	0	0	10	8	32	0	0	0	50	\$ 9,351			\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 7,499	\$ -	\$ -	\$ -		\$ 16,850
5.2	Water Demand Impacts	2	2	12	8	0	32	40	4	100	\$ 13,995			\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -		\$ 13,995
Task 6	Evaluate Water Supply and Diversification Options	16	0	24	84	122	24	0	8	278	\$ 50,549	\$ 3,600	\$ 54,149	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,541	\$ 65,004	\$ -	\$ 92,268	\$ 9,200	\$ 8,401	\$ 230,563
6.1	Identify Water Supply Evaluation Criteria	4	0	4	4	6	4	0	0	22	\$ 4,535			\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 11,994	\$ -		\$ 16,529
6.2	Evaluate Water Supply Options	8	0	8	60	92	0	0	6	174	\$ 31,235			\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 65,004	\$ -	\$ -	\$ 9,200		\$ 105,438
6.3	Perform Comprehensive Distributed Supply Analysis	4	0	12	20	24	20	0	2	82	\$ 14,780			\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,541	\$ -	\$ -	\$ 80,274	\$ -		\$ 96,595
Task 7	Score Demand and Supply Side Options	4	4	16	14	48	32	0	2	120	\$ 20,307	\$ 1,800	\$ 22,107	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 3,082	\$ -	\$ -	\$ 1,926	\$ 3,084	\$ 405	\$ 30,602
7.1	Score Options	2	4	10	8	32	16	0	0	72	\$ 12,371			\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,926	\$ 3,084		\$ 17,380
7.2	Reconciliation of Scoring	2	0	6	6	16	16	0	4	50	\$ 8,160			\$ -	\$ -	\$ -	\$ -	\$ -	\$ 3,082	\$ -	\$ -	\$ -	\$ -		\$ 11,241
Task 8	Develop and Evaluate Portfolios	10	2	20	20	48	16	0	4	120	\$ 22,679	\$ 1,800	\$ 24,479	\$ -	\$ 2,325	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 4,611	\$ 3,205	\$ 507	\$ 35,127
8.1	Process to Develop Portfolios	2	0	12	8	16	8	0	0	46	\$ 9,046			\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -		\$ 9,046
8.2	Portfolio Evaluations	8	2	8	12	32	8	0	4	74	\$ 13,633			\$ -	\$ 2,325	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 4,611	\$ 3,205		\$ 23,774
Task 9	Conduct Financial Analysis and Evaluation	6	0	52	32	96	24	0	4	214	\$ 41,103	\$ -	\$ 41,103	\$ -	\$ 16,276	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 29,988	\$ 6,589	\$ -	\$ 2,643	\$ 96,599
9.1	Evaluate Financial Considerations (tool development + analysis)	1	0	16	16	64	16	0	0	113	\$ 19,537			\$ -	\$ 2,325	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 29,988	\$ -	\$ -		\$ 51,850
9.2	Financing Options	1	0	24	8	16	4	0	0	53	\$ 11,901			\$ -	\$ 11,626	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -		\$ 23,527
9.3	Alternative Utility Rate Structure and Business Model Approaches	4	0	12	8	16	4	0	4	48	\$ 9,665			\$ -	\$ 2,325	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 6,589	\$ -		\$ 18,580
Task 10	Score Portfolios	8	2	12	8	32	0	16	2	80	\$ 14,508	\$ 1,800	\$ 16,308	\$ -	\$ 2,325	\$ -	\$ -	\$ -	\$ 1,541	\$ 9,964	\$ 18,998	\$ -	\$ -	\$ 1,641	\$ 50,777
Task 11	Develop Plan Recommendations	8	4	16	16	24	8	0	4	80	\$ 15,990	\$ -	\$ 15,990	\$ -	\$ 3,924	\$ -	\$ -	\$ -	\$ -	\$ 7,534	\$ -	\$ 8,460	\$ -	\$ 996	\$ 36,904
Task 12	Develop Plan Report	4	4	24	60	100	40	40	16	288	\$ 46,063	\$ 1,800	\$ 47,863	\$ -	\$ -	\$7,813	\$ -	\$ -	\$ 2,696	\$ -	\$ -	\$ 8,541	\$ -	\$ 953	\$ 67,866
PM	PM	4	0	50	110	0	8	0	124	296	\$ 53,102	\$ -	\$ 53,102	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 31,423	\$ -	\$ 1,571	\$ 86,095
PM.1	Communications and Project Plan	0	0	4	2	0	4	0	0	10	\$ 2,033			\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -		\$ 2,033
PM.2	Project Team eRoom	0	0	2	0	0	0	0	24	26	\$ 3,282			\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -		\$ 3,282
PM.3	Project Quality Control Plan	2	0	2	8	0	0	0	22	34	\$ 5,278			\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -		\$ 5,278
PM.4	Project Quality Management Workshop	2	0	2	2	0	0	0	0	6	\$ 1,607			\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -		\$ 1,607
PM.5	Bi-weekly PM Meeting	0	0	18	18	0	0	0	0	36	\$ 9,018			\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -		\$ 9,018
PM.6	Monthly Reporting and Project Administration	0	0	18	72	0	0	0	54	144	\$ 25,957			\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 31,423	\$ -		\$ 57,380
PM.7	Project Schedule	0	0	4	8	0	4	0	24	40	\$ 5,927			\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -		\$ 5,927
PM.8	Task Force Meetings	0	0	15	0	0	4	0	0	19	\$ 4,919			\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -		\$ 4,919
Total		74	56	333	451	534	556	565	176	2,449	\$ 437,188	\$ 20,400	\$457,588	\$ 69,995	\$ 80,362	\$7,813	\$19,150	\$ -	\$ 9,630	\$ 90,001	\$ 48,986	\$ 175,127	\$ 15,489	\$ 25,828	\$ 999,969



Consulting Services for Integrated Water Resource Plan  
April 28, 2016

**Attachment C**  
**Draft Subconsultant Proposals**



Consulting Services for Integrated Water Resource Plan  
April 28, 2016

**Adisa Communications**



Adisa Communications  
13492 Research Blvd  
120-631  
Austin TX 78750



CDM Smith  
Tina Perterson  
11490 Westheimer, Suite 700  
Houston TX 77077

Estimate # 0000129  
Estimate Date March 26, 2016  
PO # IRWP101 - Estimate  
**Estimate Total (USD) \$19,150.40**

Task	Time Entry Notes	Rate	Hours	Line Total
Project Management and Coordination	Participate in monthly planning meetings with the project team (CDM Smith, Rifeline) to provide consultation and strategy for the benefit of the project (President/CEO)	173.14	44	7,618.16
Public Involvement - Planning	Assist Rifeline in the development of a public involvement plan as follows: · Review and provide feedback on plan · Identify key stakeholders for the IWRP (Public Relations Assistant)	106.06	20	2,121.20
Creative and Graphic Design	Design related to Public involvement (Creative Director)	157.40	12	1,888.80
Outreach	Participate in 3 stakeholder meetings · Provide logistics for 3 stakeholder meetings · Attend planning meetings for stakeholder meetings (anticipated to be approximately 8 meetings) · Attend stakeholder meetings · Document stakeholder feedback. · Review summary of documentation and feedback. (Public Relations Assistant)	106.06	60	6,363.60
Reporting	Assist with drafting a summary report on stakeholder feedback from events (Public Relations Assistant/Specialist)	48.70	12	584.40
Reporting	Review and edit reports (Public Relations Assistant)	106.06	4	424.24

Item	Description	Unit Cost	Quantity	Line Total
Copies	Project related copies (internal)	0.15	500	75.00
Distribution	Mailing, deliveries	25.00	3	75.00

<b>Estimate Total (USD)</b>	<b>\$19,150.40</b>
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#### Notes

Revised 4/13/16 AM

Based on the budget allocation, Adisa is did not include support for the following tasks:

Participate in up to 12 outreach events. Austin Water will lead these events, but Adisa would provide the following:

- Provide guidance on appropriate public outreach opportunities
- Attend public events
- Document input from outreach event participants through surveys or other materials.

Solicit feedback from stakeholders

- Review proposed surveys (online or phone)
- Assist with conducting 30 surveys and provide feedback on surveys
- Review and provide feedback on survey summary report

This estimate was sent using  FRESHBOOKS



Consulting Services for Integrated Water Resource Plan  
April 28, 2016

**Michael Barrett, Ph.D., P.E.**



**Michael E. Barrett, Ph.D., P.E., D.WRE**  
**5104 Beverly Skyline**  
**Austin, TX 78731**

I will assist CDM Smith in the development of the City of Austin Integrated Water Resource Plan through participating in the following tasks:

**Task 2: Develop Methodology for Options and Portfolio Evaluation.** Review methodology to conduct an “apples-to-apples” comparison of demand-side and supply-side options, as well as scoring portfolios. (4 hours)

**Task 6: Evaluate Water Supply and Diversification Options, Task 6.3: Perform Comprehensive Distributed Supply Analysis.** Review a geospatial tool to analyze the supply yield and cost effectiveness of distributed, alternative water supplies (stormwater harvesting, graywater, blackwater, and wastewater skimming) prepared by GHD (8 hours).

**Task 7: Characterize Demand and Supply Side Options.** Participate in the process described in Task 2 to score the demand/supply side options against screening criteria to remove unfeasible options (8 hours) and review the memo developed as part of this task (8 hours).

**Task 10: Score Demand and Supply Side Portfolios.** Participate in an internal workshop to score and rank portfolios (combinations of options) using multi-criteria decision analysis (8 hours).

**Task 12: Develop Plan Report.** Review and critique the draft final report (14 hours).

Cost: This work will be done on a time and material basis. My approved City of Austin hourly billing rate is \$192.60/hr, which is inclusive of all direct costs. Total costs for this work will not exceed \$9,630 (50 hours).



## Notes

Revised 4/8/16 PM


Based on the budget allocation, Adisa is did not include support for the following tasks:

Participate in up to 12 outreach events. Austin Water will lead these events, but Adisa would provide the following:

- Provide guidance on appropriate public outreach opportunities
- Attend public events
- Document input from outreach event participants through surveys or other materials.

Solicit feedback from stakeholders

- Review proposed surveys (online or phone)
- Assist with conducting 30 surveys and provide feedback on surveys
- Review and provide feedback on survey summary report

This estimate was sent using  FRESHBOOKS



Consulting Services for Integrated Water Resource Plan  
April 28, 2016

## **Crespo Consulting Services**



April 8, 2016

Tina Petersen, Ph.D., P.E.  
CDM Smith, Inc.  
3050 Post Oak Blvd, Suite 300  
Houston, TX 77056

Project: Austin Water – Integrated Water Resource Plan

Dear Tina:

Crespo Consulting Services, Inc. (Crespo) appreciates the opportunity to provide engineering and consulting services to CDM Smith for the Austin Water (AW) Integrated Water Resource Plan (IWRP) development.

#### **SCOPE OF WORK**

Crespo will provide engineering, environmental, water supply and technical services to assist and support CDM Smith in the development of the IWRP. Crespo will provide assistance and support for four (4) tasks. The task numbers used below match the associated tasks in the overall project scope.

#### **Task 5. Incorporate Impacts of Climate Change on Water Supply and Demand**

##### **Task 5.1. Water Supply Impacts.**

Crespo will provide support to CDM Smith with interactions with the AW's climate scientist and hydrology consultant in relation to incorporation of climatic and hydrologic forecast data into the water supply evaluation. Crespo will also provide assistance with feedback regarding implementation of the climate change information in the WAM.

#### **Task 6: Evaluate Water Supply and Diversification Options**

##### **Task 6.1. Evaluate Water Supply Options.**

Crespo will assist with evaluation of selected water supply options using previous established performance measures. This effort will include support related screening of options associated with selection of further strategies. The performance measures that would be evaluated as part of this task would include: supply volume, drought resilience, yield, instream flow impacts, water quality, infrastructure requirements, and cost. For options that have been proposed but do not have the detail necessary to be evaluated under this task, Crespo would assist with development and evaluation of the options at a conceptual level.

#### **Task 10: Score Demand and Supply Side Portfolios**

In this task, the overall project team will prepare a matrix that compares the available portfolios and then use multi-criteria decision analysis to score and rank the portfolios. Crespo will assist with providing feedback on the developed portfolios, including potential competing supply issues that may need to be evaluated with the WAM.

### **Task 11: Plan Recommendations**

At the conclusion of the scoring processes for supply/demand options and portfolios, the overall project team will arrive at a set of recommendations that reflect the community's values in terms of affordability, supply diversity, sustainability, environmental protection, and drought resilience. These will be organized as short-, medium-, and long-term recommendations, consistent with previous AW concepts and will also identify short-term strategies that have potential as drought response options. Crespo will provide feedback on the recommended portfolios that may need to be further evaluated with the WAM considering the overall plan recommendations. This may include a meeting with the team and the AW's hydrology consultant.

### **EXCLUSIONS**

The following services are excluded from this scope of work except as specifically mentioned above:

- State and Federal Permitting
- Water Availability Modeling (WAM) or other simulations with WRAP
- Development of climate change impacts
- Water quality modeling
- Groundwater modeling
- Environmental Assessments (EAs) or Environmental Impacts Statements (EIS)
- Public outreach or attendance at public meetings

### **COST**

Crespo will perform this project on a time and materials basis for a total not-to-exceed-amount of \$90,000. The cost estimate is included as an attachment to this proposal. Services will begin as soon as authorization is received. The rates used for billing the scope of work listed above will use the City of Austin approved Category 1 rates for Crespo as of 4/1/2016. Any addenda or further authorizations will use the City of Austin approved rates at that time.

This proposal is valid for a period of 150 days from date of proposal.

Thank you for requesting these services and we look forward to working with CDM Smith again. Please call me if you have any questions or need additional information.

Sincerely,



L. Stephen Stecher, P.E.  
Crespo Consulting Services, Inc.  
President

Attachment



**CDM Smith - City of Austin IWRP  
Crespo Subconsultant Budget**

Description	Professional Engineer VI	Professional Engineer I	Engineer-in- Training I	Scientist Associate I	Professional Scientist IV	Total Labor	Copy Repro.	Large Scale Plots	Misc.	Total Expenses	Total Cost
	\$186.20	\$152.58	\$103.02	\$80.08	\$114.41	\$	\$	\$	\$	\$	\$
Task 5. Incorporate Impacts of Climate Change on Water Supply and Demand: Task 5.1. Water Supply Impacts.	16	4	36	1	1	\$7,493	6	0	0	\$6	\$7,499
Task 6: Evaluate Water Supply and Diversification Options: Task 6.1. Evaluate Water Supply Options.	120	60	160	161	36	\$64,994	10	0	0	\$10	\$65,004
Task 10: Score Demand and Supply Side Portfolios	20	4	41	16	1	\$9,954	10	0	0	\$10	\$9,964
Task 11: Plan Recommendations	20	0	35	1	1	\$7,524	10	0	0	\$10	\$7,534
<b>TOTAL HOURS</b>	176	68	272	179	39	734					
<b>TOTAL COST</b>	\$32,771	\$10,375	\$28,021	\$14,334	\$4,462	\$89,964	\$36	\$0	\$0	\$36	<b>\$90,000</b>

4/8/2016

4/1/2016 COA Approved Rates



Consulting Services for Integrated Water Resource Plan  
April 28, 2016

**Encotech**





April 20, 2016 (Revised)

**Christina Petersen, Ph.D., P.E.**  
CDM Smith  
11490 Westheimer, Suite 700  
Houston, TX 77077

D: (713) 423-7320  
C: (713) 816-7830  
E: [petersoncm@cdmsmith.com](mailto:petersoncm@cdmsmith.com)

**RE: INTEGRATED WATER RESOURCES PLAN, CLMP179**  
Structural and Plumbing & Electrical Engineering Services  
Consultation Services: Adding Task 9 and Task 10

Encotech Engineering Consultants (ENCOTECH) is pleased to submit this proposal for services on the above referenced project to CDM Smith (CLIENT) for consulting services for support of development of the Austin Water Integrated Water Resource Plan.

**I. SCOPE:**

**A. Probable Cost Estimating**

1. Infrastructure Related Items
2. Rainwater Harvesting
3. Gray Water Reuse Concepts

**B. Planning Level Concepts:**

1. Rainwater Harvesting
2. Gray Water Reuse Concepts

**II. BASIC SERVICES:**

1. Coordinating with CLIENT to determine project requirements.
2. Provide consultation support to CLIENT on Structural, Plumbing and Electrical related issues and requirements.
3. Attend project kick-off meeting.
4. TASK 9: Conduct Financial Analysis and Evaluation

Encotech will assist CDM Smith to develop a costing spreadsheet. The basis for the tool will be the Unified Cost Model (UCM), an MS Excel based tool which was developed by the Texas Water Development Board for regional water planning, and similar tools developed by CDM Smith for Colorado. Using the cost spreadsheet, Encotech will develop cost curves that will be used for calculating portfolio costs in Task 10.

To augment this effort, Encotech will work with CDM Smith and GHD to evaluate cost curves for decentralized reuse options that have been developed in Australia and validate the costs for Austin to the extent practical and possible.

Encotech will prepare summary tables and documentation that will be integrated into a technical memorandum documenting the development of the costing spreadsheet.

5. TASK 10: Score Demand and Supply Side Portfolios

Encotech will develop cost estimates using the costing spreadsheet and cost curves developed in Task 9 that will be input into the scoring/ranking process for the portfolio evaluation process. Encotech will input the cost data into the Portfolio Spreadsheet tool for use in portfolio scoring.

Encotech will prepare summary tables and documentation that will be integrated into a technical memorandum documenting the development of the portfolio financial evaluation.

**II. ASSUMPTIONS AND CONDITIONS:**

The scope of services presented herein and associated estimated budgets are based upon ENCOTECH'S understanding of the project. Changes in the project that affect the underlying contract assumptions may impact the required professional service fee.

Accordingly, ENCOTECH wishes to inform the CLIENT and/or the Owner that this proposal is based on the following assumptions and conditions:

1. Proposal is based on scope that is not clearly defined. Therefore, ENCOTECH will provide services on an hourly not to exceed basis.
2. Services provided will be limited to the usage of the available fees.
3. Scope related to Rainwater Harvesting and Gray Water Reuse Concepts will be refined once proposed by GHD
4. Electrical services is limited to any plumbing implications.
5. CLIENT will provide City of Austin standards as applicable to the scope.
6. This proposal does not provide for Preliminary Engineering, Design, Bidding, or Construction Administration services.

**III. COMPENSATION:**

The hourly not to exceed fee to provide the anticipated services outlined above shall be as follows:

**TASK 9** ..... **\$29,987.95**

**TASK 10** ..... **\$18,998.13**

**IV. REIMBURSABLE:**

Reimbursable expenses are defined as follows and shall be invoiced at direct cost. These include, but are not limited to:

1. Reproduction of documents.
2. Expedited shipping, mailing, courier expenses
3. Testing and Measurements

**V. ADDITIONAL SERVICES:**

It is recognized that certain elements within the scope of engineering work cannot be accurately predetermined or controlled entirely by ENCOTECH. Therefore, such engineering work will be performed as Additional Services.

ENCOTECH will perform Additional Services only with prior written approval/agreement from the CLIENT. Such work may include but not limited to:

1. Services required beyond the available fees.  
Note: Once scope is clearly defined, ENCOTECH reserves the right to further define items considered Additional Services.



**HOURLY RATES:** All Additional Services shall be conducted on an hourly rate basis per Attachment A:

**VI. EXCLUSIONS:**

Services that are not provided for in this Agreement specifically include, but are not limited to:

1. Preliminary Engineering, Design, Bidding, and Construction Administration services.
2. Means and methods of construction.
3. Testing and Inspections; a qualified testing and inspection firm shall conduct all inspections.
4. Assistance to the CLIENT as an expert witness in any litigation with third parties, arising from the planning, development or construction of the project.
5. Detailed Quantity Take-offs, Estimates or Construction Cost.

**VII. CLIENT PROVIDED SERVICES:**

1. CLIENT/Owner shall furnish ENGINEER with full information as to CLIENT/Owner project requirements including special considerations or special services needed, and also to make available all project pertinent data.
2. CLIENT shall be responsible for final printing and distribution of documents.

**VIII. RESPONSIBILITY OF OTHERS:**

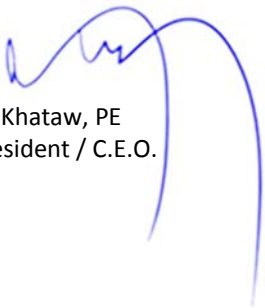
In accordance with accepted professional practice it is the responsibility of Owner to provide the design team with complete and accurate information concerning known existing physical and legal conditions of the site/building that are beyond the scope of the professional engineering services described in this document. Certain unusual or unforeseeable conditions may materially alter the scope of the project in a manner not provided for in this contract.

If the project is cancelled prior to completion of project design, then ENCOTECH shall be paid for percentage of work completed up to the date of cancellation.

Please call us if you have any questions. Thank you for giving us the opportunity to render our service to you. We are dedicated to making it a full success.

Sincerely,

Ali Khataw, PE  
President / C.E.O.



**AGREED & ACCEPTED:** CDM Smith

\_\_\_\_\_  
Authorized Corporate Officer (Please print name, title & sign)

**Date:** \_\_\_\_\_

Encotech / City of Austin 2016  
CDM - Water Management Strategies

Date: 04/20/2016

Integrated Water Resources Plan CLMP179 Project	Principal	Professional Engineer IV	Professional Engineer IIIB	Professional Engineer II	Project Manager I	Engineering Associate III	Engineering in Training IV	Total Hours by Task	Totals by Task
Task 9	3	8	45	36	62	29.5	18	201.5	\$29,987.95
Task 10	3	8	33	25	35	9	9	122	\$18,998.13
								0	\$0.00
Total Hours	6	16	78	61	97	38.5	27	323.5	
Billing Rate	\$277.50	\$232.80	\$177.06	\$137.25	\$140.13	\$125.86	\$110.19		
Total Fees	\$1,665.00	\$3,724.80	\$13,810.68	\$8,372.25	\$13,592.61	\$4,845.61	\$2,975.13		<b>\$48,986.08</b>



Consulting Services for Integrated Water Resource Plan  
April 28, 2016

**GHD**





11 April 2016

Christina Peterson, Ph.D., P.E.  
Associate Water Resources Engineer  
CDM Smith  
11490 Westheimer, Suite 700  
Houston TX 77077

Our ref: 21/0917071/

Your ref:

Dear Tina

## **Austin Integrated Water Resource Plan Proposal**

Please find enclosed our proposal to, in partnership with CDM Smith, provide consultancy services to the City of Austin over the period June 2016 to December 2017 for the development of their Integrated Water Resource Plan.

This proposal comprises two documents, *GHD's Methodology and Scope* (06 April 2016) and *GHD's Fee Estimate* (06 April 2016). These are based on the City's request for tenders dated 13 July 2015 (CLMP179) and subsequent discussions between GHD, CDM Smith and the City of Austin.

We note that the following matters are yet to be resolved:

- Management and costs associated with disbursements – Travel and accommodation for Australian staff
- Contractual matters documented in previous correspondents.

GHD's legal entity in the United States will be GHD Inc 2889127.

If you or the City of Austin have any further questions or would like to further discuss this proposal, please don't hesitate to contact either myself (+61 3 8687 8827 or [ryan.brotchie@ghd.com](mailto:ryan.brotchie@ghd.com)) or Mike Healey (+61 2 9239 7342 or [mike.healey@ghd.com](mailto:mike.healey@ghd.com)).

Kind regards

A handwritten signature in black ink, appearing to read 'Mike Healey', with a stylized flourish at the end.

Mike Healey  
Manager - Water Systems Planning  
0418 426 137

**GHD Pty Ltd**

# Austin IWRP

## GHD's tasks & methodology

### 1. Purpose

GHD is partnering with CDM Smith in providing consultancy services to the City of Austin for the development of their Integrated Water Resource Plan (IWRP), as per their request for tenders dated 13 July 2015 (CLMP179).

The purpose of this document is to provide the CDM Smith with a revised methodology and scope based on CDM Smith's discussions with the City of Austin, and revised request to GHD.

### 2. Methodology

The following section outlines GHD's understanding of the City of Austin's brief and the tasks that CDM Smith has indicated that GHD will either undertake or contribute to. It provides an overview of how we will approach these tasks, who will be involved, a broad timeline, and key assumptions.

#### 2.1 Project Management

Task 0-A	Project Management
<b>Description</b>	<p>GHD has assigned Ryan Brothie as our project manager. Mike Healy will be GHD's Project Director. Mike and Ryan will lead the GHD involvement and manage tasks undertaken in Australia, with Ryan managing the day-to-day requirements of the project.</p> <p>During the intensive task periods allocated to GHD, Ryan and Mike will report to and meet with CDM Smith on a monthly basis via Webex/Video-conference, and with the City of Austin as required. Ryan will also have more informal weekly to fortnightly discussions during periods of GHD activity via telephone with the CDM Smith task manager, Chris Kurtz.</p> <p>Ryan will manage monthly reporting and invoicing throughout the project.</p> <p>Ryan and Mike will attend a start-up meeting with CDM Smith and City of Austin, via Webex/Video-conference, in Texas in May or June 2016 to develop a strong working relationship and build understanding with the wider project team. Ryan and Mike will also attend a project close out meeting, via Webex/Video-conference, at the conclusion of the project.</p>

<b>Inputs</b>	<p>Templates from CDM Smith, including:</p> <ul style="list-style-type: none"> <li>• Monthly progress reporting</li> <li>• Invoicing resource allocation sheet</li> </ul> <p>Use guidelines and access details for e-room.</p>
<b>Outputs</b>	<p>Monthly written reports</p> <p>Monthly invoices</p>
<b>Assumptions</b>	<p>Project will run for 18 months only</p> <p>Monthly invoicing based on project progress</p> <p>GHD will liaise with CDM Smith primarily, and directly with City of Austin as required by CDM Smith.</p>
<b>Key Team members</b>	<p>Ryan Brochie</p> <p>Mike Healy</p>
<b>Timing</b>	<p>Throughout the project, specifically during GHD allocated major tasks.</p>

## 2.2 Project Inception

<b>Task 0-B</b>	<b>Project Inception</b>
<b>Description</b>	<p>It is expected that Ryan and Mike will attend a start-up meeting with CDM Smith in Texas in May or June 2016 to develop a strong working relationship and build understanding with the wider project team. They will then brief the GHD team on project requirements.</p> <p>Kate Williams and Ryan will liaise with CDM Smith and the City of Austin to collate the required input datasets.</p> <p>Kate Williams, lead spatial analyst, will meet with CDM Smith and City of Austin to collate the required data and fully understand the input and output requirements of GHDs scope of works.</p> <p>Data will be collated and documented in a data register for sharing throughout the life of the project.</p> <p>GHD will develop a mapping style guide and map template which will be agreed upon with CDM Smith and City of Austin at this point.</p>
<b>Inputs</b>	<p>CDM Smith to provide agenda for start up meetings.</p>
<b>Outputs</b>	<p>Inception Meeting</p> <p>Project Plan including:</p> <ul style="list-style-type: none"> <li>• Agreed scope</li> <li>• Timelines</li> <li>• Communication protocols</li> </ul> <p>Data Library</p> <p>Data Register</p> <p>Agreed Map Template and Style Guide</p>

	Agreed Report Template
<b>Assumptions</b>	All data will be provided at no cost to the project team All data will be provided in digital analysis ready format Data will be supplied as per correspondence from Tina Peterson dated 15 <sup>th</sup> of March
<b>Key Team members</b>	Ryan Brochie Mike Healy Kate Williams
<b>Timing</b>	Month 1

### 2.3 Task 1 – Conduct Public Outreach and Participation

No GHD input required

### 2.4 Task 2 - Develop Methodology for Options Evaluation

<b>Task 2</b>	<b>Develop Methodology for Options Evaluation</b>
<b>Description</b>	While CDM Smith will lead this task, the methodology should be compatible with GHD's spatial approach for analysing and assessing alternative and decentralised supply options (See Task 6).  Therefore GHD will provide input to this task, drawing on our capability and experience on past integrated water management projects developing and applying spatially variable multi-criteria assessments and scoring.
<b>Input</b>	Draft evaluation method and criteria
<b>Outputs</b>	Memorandum - Advice on suitable evaluation criteria with respect to Task 6.3.
<b>Assumptions</b>	GHD will provide advice and review of CDM Smith developed method and criteria.  We assume that relates only to the evaluation method for Task 2 and excludes the options identification and analysis method that GHD will employ in Task 6.
<b>Key Team members</b>	Ryan Brochie Kate Williams Shane Tyrell
<b>Timing</b>	Month 1

### 2.5 Task 3 - Evaluate and Forecast Disaggregated Water Demands

<b>Task 3</b>	<b>Evaluate and Forecast Disaggregated Water Demands</b>
<b>Description</b>	<b><u>Develop disaggregated demand model (Task 3.1)</u></b> GHD will work with CDM Smith on the methodology for the disaggregated demand model, providing input to and review of the methodology and model.  This input will predominantly relate to the customer classes defined, how end use demands are defined, and the definition of the spatial scale of the disaggregated

demand forecast. This is to ensure the disaggregated demand forecast is suitable for integration in the geospatial analysis undertaken in Task 6.

### ***Demand mapping***

GHD understands that CDM Smith will provide GHD with demands disaggregated to the spatial scales required for the decentralised options analysis in Task 6. This will be for the future planning horizons and scenarios (i.e. climate change scenarios). GHD will liaise with CDM Smith on this task, and have made an allowance for this.

*Note:*

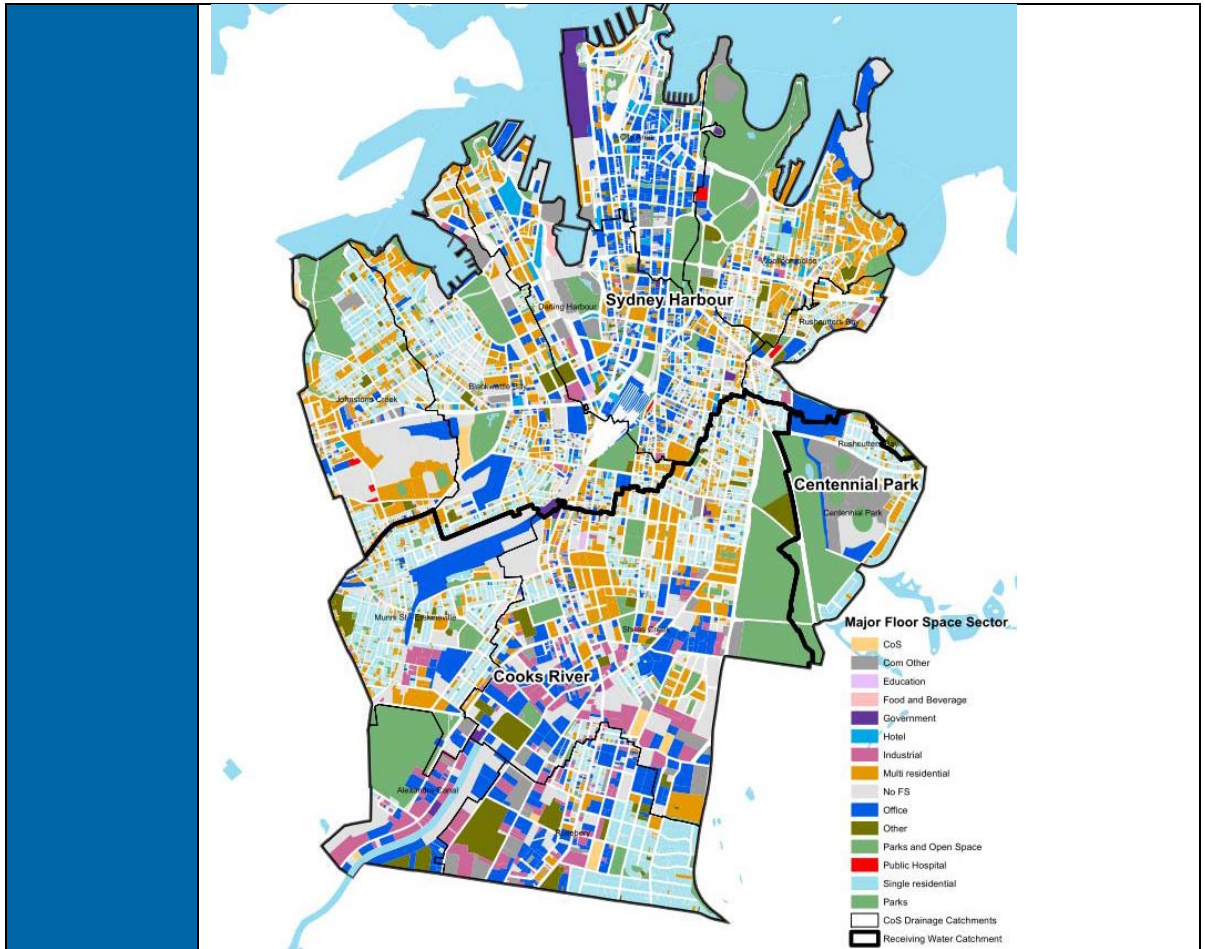
- *Bottom up demand estimation will be useful in the spatial analysis for certain customer segments. For example, large water users, golf courses or high water using public/green open spaces/parks/gardens. It is understood these demands may be aggregated to larger spatial units (e.g. neighbourhoods or water supply pressure zones), and this information pathway should be considered when undertaken Task 3.*
- *Similarly, aggregated water demands at large spatial units may not be suitable as an input to the spatial analysis in Task 6.3, and will require disaggregation to a fit for purpose spatial unit and customer class. For example, the location/presence of future high density developments in existing/developed areas.*

GHD assumes that CDM Smith will generate the demand maps/spatial datasets at a minimum for both potable and non-potable water consumption for the current and future planning horizons. These will show hot spots of water demands that will inform opportunities for alternative and decentralised water supply.

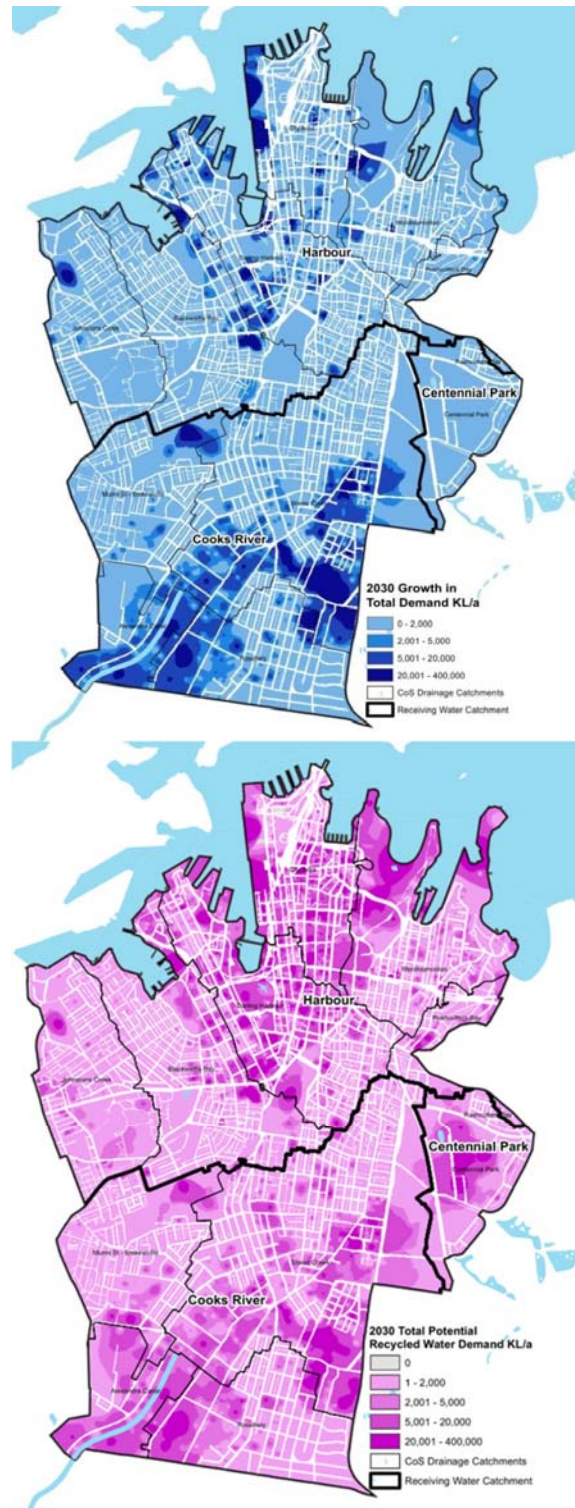
Figure 1 below shows an example of the land use mapping completed by GHD for the City of Sydney Decentralised Water Master Plan. Figure 2 below shows an example of demand mapping that was prepared for the City of Sydney Decentralised Water Master Plan.

GHD will have the opportunity to review and provide feedback on the draft demand mapping at this point.





**Figure 1** Example of land use baseline mapping for the City of Sydney



**Figure 2** Example of growth in potable (blue) and non-potable (purple) demand consumption

**Develop water needs budgeting options and approaches (Task 3.2)**

	No GHD input required
<b>Inputs</b>	Draft methodology describing spatial units, customer classes, end uses, etc. Draft demand forecasts, demand map and spatial datasets.
<b>Outputs</b>	Memoranda with feedback on draft products and advise.
<b>Assumptions</b>	Maximum 5 planning horizons. Ryan and Kate will meet with CDM Smith in Austin at the commencement of Task 3.
<b>Key Team members</b>	Ryan Brotchie Kate Williams
<b>Timing</b>	Months 2 and 3

## 2.6 Task 4 - Conduct Water Conservation Potential Assessment

No GHD input required

## 2.7 Task 5 – Evaluate Impacts of Climate Change on Water Supply and Demand

No GHD input required

## 2.8 Task 6 - Evaluate Water Supply and Diversification Options

Task 6	Evaluate Water Supply and Diversification Options
<b>Description</b>	<p>We have assumed that others will carry out the assessment of bulk water supplies. Our water supply related tasks will be limited to identification and evaluation of alternative supplies and decentralized water supply options using spatial analysis techniques.</p> <p><b><u>Identify Water Supply Options for Matrix Evaluation (Task 6.1)</u></b></p> <p>While CDM Smith will lead this task, GHD will provide input to this task. This will involve advise and review of the types of options that are considered, and the way in which they are formulated/described.</p> <p><b><u>Evaluation Water Supply Options (Task 6.2)</u></b></p> <p>No GHD input required.</p> <p><b><u>Identify and scale decentralized supply opportunities (Task 6.3)</u></b></p> <p><u>Overview</u></p> <p>The objective of this task is to identify, using spatial analysis techniques, infrastructure and non-infrastructure based alternative and decentralised supply opportunities. Key team members will work together to interrogate the results of earlier tasks to identify and scope opportunities.</p> <p>The options, determined from the matrix evaluation (Task 6.1), may include:</p> <ul style="list-style-type: none"> <li>Sewer mining, for example tapping into a large sewer main passing the site to extract wastewater generated elsewhere (i.e. wastewater reuse from existing sewers);</li> </ul>

- Blackwater reuse, for example capturing wastewater generated within a small development and recycling it back for reuse within that development
- Greywater reuse, for example separating toilet waste from other wastewater and treating it at the household scale for reuse within the dwelling
- Roof water capture and harvesting, for example property scale rain water tanks
- Stormwater harvesting, for example capturing runoff from roofs as well as hard surfaces such as footpaths and storing it in a large precinct scale underground storage (or in an existing storage site such as a lake, unused quarry or water supply tanks, or retarding basin), for reuse.
- Stormwater reliability, for example a case study assessment to provide an indicative level of reliability of stormwater supply for given catchment and demand characteristics

#### Opportunity Identification

For opportunities that can be assessed across the study area, GHD will develop a set of feasibility/suitability criteria that will allow for the rapid identification of a refined list of opportunities. This will include both spatial and non-spatial criteria and may potentially include technical, social, environmental, commercial, and economic criteria as part of a spatial multi criteria assessment (spatial MCA).

GHD will prepare a technical memorandum describing the basis for options identification and analysis, including description of the criteria.

CDM Smith and the City of Austin will have the opportunity to review and provide feedback on the draft criteria memorandum at this point.

#### Opportunity Analysis and Assessment

Following the identification of alternative water supply 'opportunities' (or 'projects' or 'schemes'), we will analyse and assess the opportunities, using the available spatial data. Spatial technology and tools that GHD has developed and applied for several water supply option assessment projects will be utilised on this project.

These processes will draw on the assessment criteria identified in Task 2, and confirmed in the reviewed technical memorandum. The information created is expected to include supply yields, costs (e.g. capital, operating, maintenance and lifecycle), greenhouse gas emissions, environmental impacts, etc.).

#### Opportunity Analysis and Assessment

The opportunities will each be scaled and aggregated, at different spatial scales and for the whole city, to provide an overview of the potential to use alternative/decentralised supply sources to meet non-potable water demands.

CDM Smith and the City of Austin will have the opportunity to review and provide feedback on the draft outcomes at this point.

#### Examples

Figure 3 below shows an example of criteria that have been used by GHD in the past to rapidly identify and assess locations for sewer mining as a potential supply source for non-potable demands in new development.

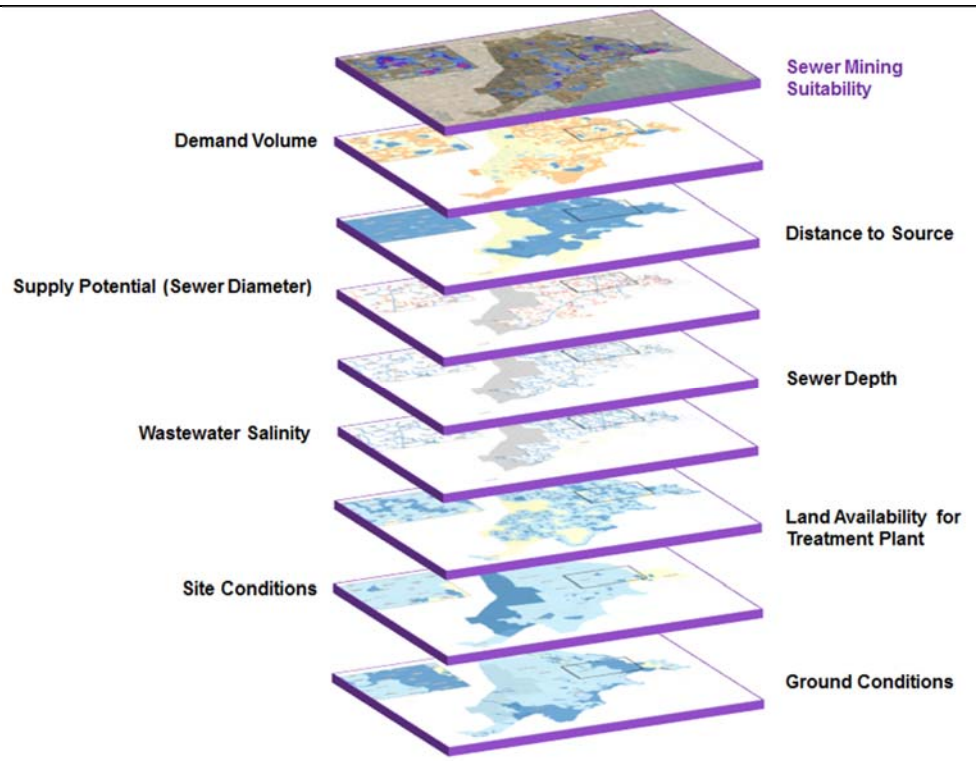


Figure 3 Example Spatial MCA used by GHD to identify sewer mining locations

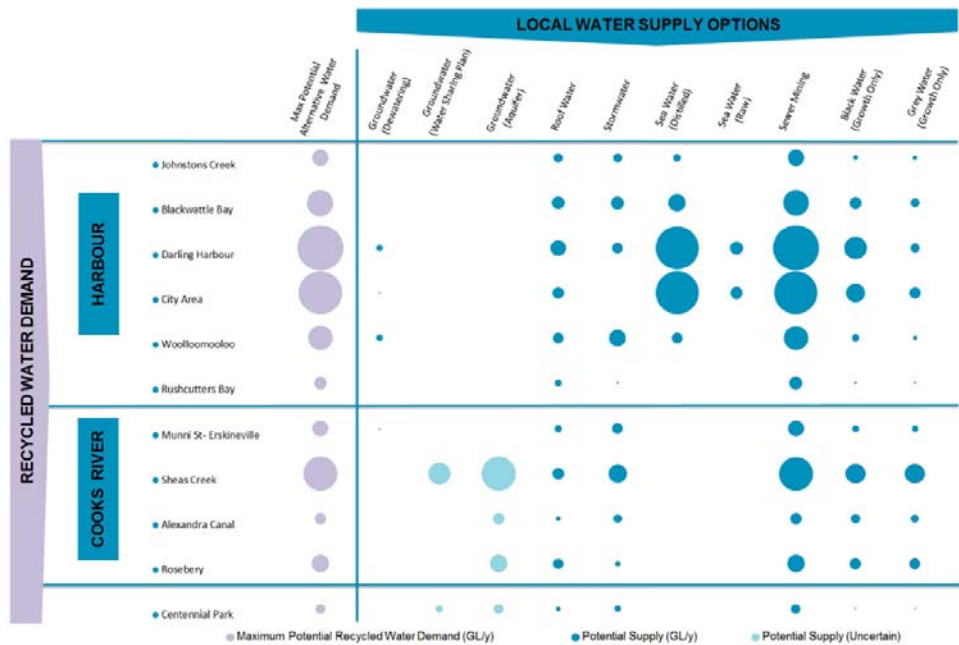


Figure 4 Example of matching recycled water demands with supply opportunities

**Direct reuse (purple pipe) decision making framework (Task 6.3 cont.)**

We understand from discussions with CDM Smith that City of Austin require a decision making framework to assist with analysis of direct reuse (purple pipe) options.



	<p>This will take the form of a decision support framework, typically including a decision tree accompanied with elements of a multi-criteria assessment. This will assist thinking through the costs, benefits and issues associated with certain reuse options or combinations of options.</p>
<b>Inputs</b>	<p>Outputs of all previous tasks.</p> <p>All data listed in Appendix A.</p> <p>All additional data created in previous tasks.</p> <p>In addition, we expect the Outputs of Task 6.2 provided to GHD will include:</p> <ul style="list-style-type: none"> <li>Existing and future projected water supply sources (inc alternative sources) (location, volumes, costs etc). Including alternative sources and recycled water infrastructure (e.g. transfer pipelines and outfalls).</li> <li>Sewer system inc treatment plants (infrastructure, customers, operational areas location, current and future predicted flows, costs, age, condition etc) and planned system augmentations/ renewals.</li> <li>Existing or potential existing storage assets that could be used for alternative/decentralised supply storage (e.g. lakes, retarding basins, quarries, ASR sites, unused or underutilised tanks/basins);</li> <li>Stormwater systems (infrastructure, customers, operational areas, age) and planned system augmentations/ renewals.</li> <li>Stormwater runoff volumes/flows at sub-catchment or development scale (if available).</li> </ul> <p>In addition, we require all datasets relevant to the criteria that the options will need to be evaluated against (e.g. social or environmental impacts or benefits).</p> <p>Template for options description and scoring.</p>
<b>Outputs</b>	<p>Memorandum providing feedback on matrix evaluation (Task 6.1).</p> <p>Memorandum describing options identification and analysis method for CDM Smith to review.</p> <p>List of identified alternative and decentralised water supply opportunities across the study area, by project unit (e.g. water supply pressure zone or precinct), including:</p> <ul style="list-style-type: none"> <li>Technical memorandum defining the basis for options identification, analysis and assessment;</li> <li>Description of the opportunities;</li> <li>Table including assessment requirements, including costs, yield, etc. (for input to Task 7).</li> <li>Appropriate mapping to communicate outcomes (PDF)</li> </ul> <p>Direct reuse (purple pipe) decision making framework.</p>
<b>Assumptions</b>	<p>Data will be supplied to GHD as per correspondence from Tina Peterson dated 15<sup>th</sup> of March, as per Appendix A.</p> <p>CDM Smith and the City of Austin will each be able to provide one round of review for each draft deliverable.</p>

	<p>The potential need for code changes associated with different options considered in the reuse analysis is assumed to be undertaken by CDM Smith.</p> <p>The development of cost estimates and quantitative information for other criteria for a very large number of alternative/decentralised opportunities at various geographic scales will be undertaken by GHD, using cost-curves, unit costs, and other similar automated approaches developed in Australia, taking into consideration local conditions and factors where data is available. This will require an adjustment/scaling/indexing to achieve consistency with costs in the U.S. This will also require input from and collaboration with CDM Smith to ensure compatibility with local conditions/rates, and to ensure a consistent basis for costing is used for centralised and decentralised options.</p> <p>Any avoided or deferred systems costs will be calculated separately by CDM Smith.</p> <p>If stormwater runoff volumes/flows at sub-catchment or development scale are not available, GHD will make simplifying assumptions based on the available land use and/or imperviousness data and rainfall data, for analysis of stormwater harvesting potential.</p> <p>City of Austin is to provide all templates, schemes, formats, etc. for GIS/Mapping.</p> <p>Data delivery – GHD will provide final spatial datasets in Geodatabase format only. No MXD documents or models used for analysis will be provided.</p> <p>Ryan and Kate will meet with CDM Smith in Austin at the commencement of Task 6, and either Kate or Ryan will meet with CDM Smith in Austin at the completion of Task 6.</p>
<b>Key Team members</b>	<p>Kate Williams</p> <p>Ryan Brotchie</p> <p>Arash Jafari</p>
<b>Timing</b>	Month 3 - 6

## 2.9 Task 7 – Score Demand and Supply Side Options

Task 7	Score Demand and Supply Side Options
<b>Description</b>	<p>GHD to provide advice on using outputs of task 6 to score the options.</p> <p><b><u>Score options (Task 7.1)</u></b></p> <p>GHD will have provided the outputs of Task 6 in the necessary format to enable CDM Smith to undertake the scoring of options (e.g. costs, yield, environmental impacts, etc.). CDM Smith will undertake the scoring of options. GHD's input is limited to review.</p>
<b>Inputs</b>	Draft scoring of options to be provided by CDM Smith for review.
<b>Outputs</b>	NA
<b>Assumptions</b>	<p>CDM Smith will undertake the scoring of options.</p> <p>GHD's input is limited to review.</p>

<b>Key Team members</b>	Ryan Brothie Kate Williams
<b>Timing</b>	Month 7

## 2.10 Task 8 – Develop and Evaluate Water Supply and Demand Management Portfolios

<b>Task 8</b>	<b>Develop and Evaluate Water Supply and Demand Management Portfolios</b>
<b>Description</b>	<p><b><u>Develop process to create, evaluate and select portfolios (Task 8.1)</u></b></p> <p>While CDM Smith will lead this task, the evaluation methodology should be compatible with GHD's geospatial approach. Therefore GHD will provide input to this task, in the form of advise and review.</p> <p><b><u>Assist in creation and priotisation of portfolios for further evaluation (Task 8.2)</u></b></p> <p>GHD will provide input to this task reviewing the integration of alternative/decentralised options into the portfolios.</p>
<b>Inputs</b>	<p>Draft Methodology.</p> <p>Developed portfolios provided by CDM Smith for review.</p>
<b>Outputs</b>	<p>Memorandum with feedback on methodology.</p> <p>Reviewed portfolios.</p>
<b>Assumptions</b>	This task will be under the direction of CDM Smith.
<b>Key Team members</b>	Kate Williams Ryan Brothie
<b>Timing</b>	CDM Smith to clarify.

## 2.11 Task 9 – Conduct Financial Analysis and Evaluation

<b>Task 9</b>	<b>Conduct Financial Analysis and Evaluation</b>
<b>Description</b>	<p><b><i>Evaluate financial considerations &amp; Evaluate financing options (Tasks 9.1 &amp; 9.2)</i></b></p> <p>No GHD input required.</p> <p><b><i>High level summary of alternative utility rate structure business model approaches (Task 9.3).</i></b></p> <p>GHD to provide a case study summarising a utility rate structure business model from an Australian water utility. The case study utility will be discussed and agreed with CDM Smith.</p>
<b>Inputs</b>	Template for case study.
<b>Outputs</b>	Case study memorandum



<b>Assumptions</b>	<p>CDM Smith will use the case studies to analyse the effects of the alternative business model on water demand.</p> <p>It is unclear to GHD what level of detail is required for this task. We have currently allowed 38 hours of time in total.</p>
<b>Key Team members</b>	<p>Mike Healy</p> <p>Shane Tyrell</p>
<b>Timing</b>	<p>Month 13</p>

## 2.12 Task 10 – Score Demand and Supply Side Portfolios

No GHD input required

## 2.13 Task 11 - Develop Plan Recommendations

<b>Task 11</b>	<b>Develop Plan Recommendations</b>
<b>Description</b>	<p>We understand that CDM Smith would like GHD's input to Task 11. This will be predominantly in the form of advise and review.</p> <p><b>Develop supply and demand management plan recommendations</b></p> <p>GHD will provide advise and review of the recommendations developed by CDM Smith.</p> <p><b>Develop medium and long term plan recommendations</b></p> <p>GHD will provide advise and review of the recommendations developed by CDM Smith.</p> <p><b><i>Identify case studies for demand &amp; supply side options for the report</i></b></p> <p>GHD will assist with preparation of case studies for the report, based on previous tasks.</p> <p>Additionally, GHD will draw on the Australian experience, particularly post-drought, to provide input to a list of emerging issues and risks associated with supply and demand management opportunities. This information will be prepared to inform Task 12. Issues may include:</p> <ul style="list-style-type: none"> <li>• Risk to drivers disappearing, for example what happens when the climate gets wetter again,</li> <li>• Changes in community expectations,</li> <li>• Affordability,</li> <li>• Advances in technology,</li> <li>• Regulatory issues and uncertainty,</li> <li>• Public health risk, and</li> <li>• Unknown costs such as those associated with complexity of commissioning third pipe systems.</li> </ul> <p>A risk workshop, with CDM Smith and City of Austin may be required to confirm and agree on the emerging issues.</p>

<b>Inputs</b>	<p>Draft supply and demand management plan recommendations</p> <p>Draft medium and long term plan recommendations</p> <p>Report template/structure</p>
<b>Outputs</b>	<p>Review of supply and demand management plan recommendations.</p> <p>Review of medium and long term plan recommendations.</p> <p>Input to preparation of case studies for report.</p> <p>Input to a list of emerging issues with the supply and demand management options.</p>
<b>Assumptions</b>	If a risk workshop is required, this will be organised and facilitated by CDM Smith with inputs from GHD. GHD will attend at a minimum via teleconference.
<b>Key Team members</b>	<p>Mike Healey</p> <p>Ryan Brotchie</p> <p>Shane Tyrell</p>
<b>Timing</b>	Months 13 - 15

## 2.14 Task 12 - Develop Plan Report

<b>Task 12</b>	<b>Develop Plan Report</b>
<b>Description</b>	GHD envision that much of the information, figures, graphs and tables required for the final report will be sourced from the technical memorandums provided. However, we will also allow time for our team to provide support to CDM Smith in integrating our work into the final report and crafting a compelling integrated water resources plan for Austin.
<b>Inputs</b>	<p>Report structure and template (beneficial if this is resolved early so that any work can populate the relevant section)</p> <p>Draft Report</p>
<b>Outputs</b>	<p>Report Mapping.</p> <p>Report Content – chapters describing GHD methodology, outputs.</p> <p>Report Review.</p>
<b>Assumptions</b>	<p>CDM Smith can provide one round of feedback on GHD Content.</p> <p>GHD to review final version of report in total.</p> <p>GHD will provide all inputs in MS Word.</p>
<b>Key Team members</b>	<p>Mike Healy</p> <p>Ryan Brotchie</p> <p>Kate Williams</p>
<b>Timing</b>	Month 15 - 18

### 3. Clarifications, Assumptions & Items for discussion

In addition to the specific assumptions for each task, please note the following assumptions and items still for discussion or clarification:

- Our assumptions about level of project management and communication activities required by GHD with CDM Smith and City of Austin:
  - Communication protocols between GHD and CoA and other sub-consultants.
  - Client communication and meetings
  - Presentations and attendance at additional meetings in Austin
- Timing of tasks and activities (detailed program)
- Invoicing arrangements (timing)
- Data delivery – GHD will provide final spatial datasets in Geodatabase format only. No MXD documents or models used for analysis will be provided.
- Review approach to any project deliverables & iterations - We have assumed currently that CDM Smith can provide one round of feedback on GHD deliverables and vice-versa.

## Appendix A - Data list

It is assumed the following data will be supplied to GHD during the course of the project. This list has been refined based on correspondence from Tina Peterson on 15<sup>th</sup> March 2016.

Where the data is limited or unavailable, we will work with what we have and/or identify additional actions to identify strategic data or agree on simplifying assumptions.

### Land Data

- Parcel (cadastre)
- Land use current and forecast growth areas/ change to land use/ capacity assessments.
- Agricultural regions
- Parks, areas of urban irrigation
- Land use change projections – e.g. growth zones, new major developments, etc.
- Surface coverings (or if unavailable, imperviousness/impervious fractions)
- Irrigation areas
- Ground Levels (understood to be available from LiDar data)
- Waterways (Rivers Creeks)
- Flood mapping data
- Jurisdiction areas
- Roads and classification and names
- Rail

*We understand that land use and land use change information will be available through to around 2040, and that CDM Smith will be developing forecasts for 2070 and 2115.*

*We understand information on irrigation areas is available to some extent, but that not all irrigation is conducted through a meter specifically assigned for irrigation. In lieu of that, irrigation areas can be inferred from land use.*

### Water Systems

- Existing water supply sources (inc alternative sources) (location, volumes, costs etc)
- Water supply system (infrastructure, customers, operational areas, age, condition) and planned system augmentations/ renewals – available for the most part.
- Sewer system inc treatment plants (infrastructure, customers, operational areas location, volumes, costs, age, condition etc) and planned system augmentations/ renewals – available for most part
- Stormwater systems (infrastructure, customers, operational areas, age) and planned system augmentations/ renewals.
- Current re-use facilities.
- Reuse master plan, shows planned portions of the system.

*We understand that water supply, sewer system and stormwater system information is for the most part available, but there there may be less data on augmentation/renewals and particularly stormwater system augmentation renewals.*

**Property Data**

- Floor Space
- Capacity assessments (understand to be available for 12 inch lines and greater)
- Air conditioning / cooling systems
- Roof areas
- Rainwater tank
- Onsite reuse
- Building codes/ sustainability requirements that influences water consumption
- Un-serviced properties (water, sewer)
- Age

*We understand that information such as floor heights, floor use, air-conditioning or cooling systems, is not available.*

*We understand that information about rainwater tanks and onsite reuse may be limited.*

**Stock Data (end uses)**

- Toilets
- Faucet/ flow restrictors
- Showers
- Baths
- Dishwashers
- Washing machines
- Air conditioning/ water condensers
- Rainwater tanks

*We understand that this data may not be available in detail, but that City of Austin are building an end use model.*

**People Data**

- Population
- Population projections
- Employment
- Employment projections
- Demographic (if deemed important)

*We understand that the City has this data for 2020 and 2040, and that CDM Smith will develop projections for 2070 and 2115 and provide to GHD.*

**Water Data**

- Billing & consumption by property/ customer/ category e.g residential, commercial, industrial
- Planned water conservation activities
- Historic water conservation programs

- River extraction limits and historic and forecast flows
- Any end uses studies that may have been undertaken.

*We understand this data is for the most part available on spatially referenced parcel level, and that City of Austin has cleaned the data for use in this project.*

#### **Cost data**

- Energy costs and usage
- Water treatment costs and volumes
- Water extraction costs and scheduled charges, current and future
- Wastewater discharge costs and volumes
- Cost schedules for typical infrastructure
- Consumer costs
- Production costs

#### **Climate Data**

- Rainfall, temperature, evaporation (or evapotranspiration)
- Climate change impacted datasets (Rainfall, temperature, evaporation (or evapotranspiration) – *Understood to be provided by climate change consultant.*

#### **Miscellaneous**

- Green infrastructure objectives.
- Cities liveability objectives.
- Existing drought management strategies.
- Environmental flow objectives and requirements.
- Water Sensitive Urban Design policies.

City of Austin  
Integrated Water Resource Plan  
Task List and Fee Estimate  
GHD Ref: 21\0917071  
25.04.2016

Tasks	Approved Standard Titles	Hours Estimate				Fee Estimate (USD)		
		Managing Engineer VI	Supervisory GIS III	Professional Engineer I	Task Time (hrs.)	Time	Disbursements	TOTAL
		Hourly Rates (CAT1)	\$257.53	\$145.73	\$94.96			
0	Project Management	51	46	122	219	\$31,423	\$0	\$31,423
1	Public Outreach	0	0	0	0	\$0	\$0	\$0
2	Methodology for Options Evaluation	4	12	16	32	\$4,298	\$0	\$4,298
3	Evaluate and Forecast Disaggregated Water Demands	2	24	40	66	\$7,811	\$9,200	\$17,011
4	Conduct Water Conservation Potential Assessment	0	0	0	0	\$0	\$0	\$0
5	Evaluate Impacts of Climate Change on Water Supply and Demand	0	0	0	0	\$0	\$0	\$0
6.1	Identify Water Supply Options for Matrix Evaluation	2	0	24	26	\$2,794	\$9,200	\$11,994
6.2	Evaluate Water Supply Options	0	0	0	0	\$0	\$0	\$0
6.3i	Decentralised Options Identification, Analysis, Assessment	18	186	382	586	\$68,016	\$0	\$68,016
6.3ii	Direct Reuse Decision Making Framework	24	0	64	88	\$12,258	\$0	\$12,258
7	Score Demand and Supply Side Options	0	8	8	16	\$1,926	\$0	\$1,926
8	Develop and Evaluate Water Supply and Demand Management Portfolios	0	16	24	40	\$4,611	\$0	\$4,611
9	Conduct Financial Analysis and Evaluation	16	0	26	42	\$6,589	\$0	\$6,589
10	Score Demand and Supply Side Portfolios	0	0	0	0	\$0	\$0	\$0
11	Develop Plan Recommendations	24	0	24	48	\$8,460	\$0	\$8,460
12	Report	16	16	22	54	\$8,541	\$0	\$8,541
	Total Team Member Hours	157	308	752	1217			
	Total \$ (Excl. GST & Tax)					\$156,727	\$18,400	\$175,127



Consulting Services for Integrated Water Resource Plan  
April 28, 2016

## **K2 Partners**







REPROGRAPHICS | DIGITAL COPYING  
SCANNING | PLOTTING | CADD | GIS

K2 PARTNERS, LLC  
114 Silla Sendero  
Wimberley, Texas 78676  
TEL: 512-415-4408  
www.k2partners.com

WBE | HUB CERTIFIED

April 8, 2016

Tina Petersen, P.E.  
CDM Smith, Inc.  
12537A Riata Trace Parkway  
Suite 210  
Austin, Texas 78727

Re: City of Austin – Integrated Water Resources Plan Update

Dear Ms Petersen,

K2 Partners, LLC (K2) is pleased to submit this proposal in response to your request for our services for the above referenced project for printing, and document coordination. We appreciate the opportunity to work with CDM Smith and intend to provide quality services to meet the needs of this project.

Scope and Fee Schedule:

Printing and coordination for Draft and Final Report (approximately 20 sets)

Supervisory CADD VI - 16 hours @ \$100.81/hr =	\$1,612.96
<u>Printing/Documentation/ftp</u>	<u>\$6,200.00</u>
Total	\$7,812.96

Work will be billed on a time and materials basis. Deviation from original project scope and schedule as transmitted to K2 by CDM Smith may also result in additional fees.

Please do not hesitate to call if you any questions.

Sincerely,

Cheryl D. Sandefur  
Managing Member



Consulting Services for Integrated Water Resource Plan  
April 28, 2016

**LBG Guyton**



**LBG-GUYTON ASSOCIATES**  
**PROFESSIONAL GROUNDWATER AND**  
**ENVIRONMENTAL ENGINEERING**

1101 CAPITAL OF TEXAS HIGHWAY  
SUITE B-220  
AUSTIN, TX 78746  
512-327-9640  
FAX: 512-327-5573  
[www.lbgweb.com](http://www.lbgweb.com)

April 6, 2016

Tina (Christina) Petersen, Ph.D., P.E.  
Associate Water Resources Engineer  
CDM Smith  
11490 Westheimer, Suite 700  
Houston, TX 77077

**RE: Scope and Budget Supporting CDM Smith Inc. on Evaluating Water Supply Options for the City of Austin.**

Tina,

CDM Smith Inc. is requesting the assistance of LBG-Guyton Associates on the evaluation and development of feasible water supply options for the City of Austin. The scope of work includes the technical analyses needed for the development of potentially feasible groundwater strategies. In addition, LBG-Guyton will support CDM Smith Inc. on surface water, reuse and decentralized supply options and participate in the development of a demand management portfolio. Our scope is detailed below.

**Scope of Work**

Task 6. Support CDM Smith Inc. on evaluating potentially feasible water supply options to include, but are not limited to groundwater supply, surface water supply, reuse supply and decentralized supply. LBG-Guyton will take the lead in developing feasible groundwater strategies. Technical analyses will include cost assessments, evaluating environmental impacts, and determination of water quality. In addition, LBG-Guyton will support the development and review of a memorandum on water supply options and evaluation results.

Task 7. Provide CDM Smith Inc. input on the scoring of groundwater supply strategies. Analysis includes a comparison evaluation between available water supply options and identified performance measures such as supply yield, climate resiliency, water quality, and environmental impacts. In addition, LBG-Guyton will support the review of a memorandum summarizing a reconciled list of demand and strategy supply options.

Task 8. Assist CDM Smith Inc. with the development of groundwater supply and demand management portfolios. Provide CDM Smith Inc. input on potential competing groundwater options, and develop efficient portfolios reliant on the combination of premium groundwater supply options. In addition, LBG-Guyton will support the review of a memorandum summarizing prioritized option portfolios.

**Cost Estimate for Project**

Our cost estimate to complete this work is \$15,488.74. We can start work as soon as we are authorized and a contract is executed.

We look forward to completing the recommended scope of work and assisting CDM and the City of Austin with the water supply option evaluation. Please feel free to call me at (512)-327- 9640 if you have any questions about the scope or budget for this project.

Sincerely,

LBG-GUYTON ASSOCIATES

A handwritten signature in blue ink that reads "James Beach". The signature is fluid and cursive, with the first name "James" and last name "Beach" clearly distinguishable.

James Beach, P.G.  
Principal

**LBG-Guyton Associates / City of Austin 2016  
CDM - Water Management Strategies**

	Environmental Services Compliance Manager	Professional Engineer IV	Supervisory Scientist III	Professional Scientist II	Professional Scientist I	Total Hours by Task	Totals by Task
Task 6 - Evaluate Water Supply Options	10	16	24	0	18	68	\$9,199.66
Task 7 - Characterize Demand and Supply Side Options	8	0	4	0	8	20	\$3,084.12
Task 8 - Formulate Water Supply and Demand Management Portfolios	8	0	6	0	6	20	\$3,204.96
Total Hours	26	16	34	0	32	108	
Billing Rate	\$252.84	\$147.01	\$128.73	\$83.60	\$68.31		
Total Fees	\$6,573.84	\$2,352.16	\$4,376.82	\$0.00	\$2,185.92		<b>\$15,488.74</b>



Consulting Services for Integrated Water Resource Plan  
April 28, 2016

## **Rifeline**



**CDM Smith  
Integrated Water Resource Plan**

**SCOPE OF WORK**

**Contract:**

**Estimated Time Frame: 18 months, June 2016 – December 2017**

**Estimated Budget:**

	<b>Rifeline Principal</b>	<b>Rifeline Public Involvement Manager (Community Engagement Consultant)</b>	<b>Rifeline Business Manager (Administrative Supervisor II)</b>	<b>Total Labor Hours</b>	<b>Total Direct Labor Costs</b>
<b>Rates</b>	\$189.32	\$155.85	\$53.54	--	--
<b>Task A</b>	11	11	25	38	\$3,523.00
<b>Task B</b>	102	261	91	454	\$64,567.00
<b>Total Hours</b>	113	272	116	492	<b>\$69,995.00</b>

**SERVICES TO BE PROVIDED BY THE CONSULTANT**

**INTRODUCTION**

The City of Austin would like to refine a framework for the public outreach and participation process for the IWRP. This framework will address the incorporation of public input into the plan development process and the identification of local and regional stakeholders. The City intends to provide multiple opportunities for meaningful public input on water demand-side and supply-side strategies and plan development, seeking stakeholder input that reflects the diversity of Austin's population.

**DESCRIPTION OF TASKS**

Rifeline will assign a staff member to serve as project manager for this effort and serve as the primary point of contact for CDM Smith.

**Task A: PROJECT MANAGEMENT AND ADMINISTRATION**

Rifeline will prepare monthly invoices and handle administrative matters as needed.

**Task B: PUBLIC INVOLVEMENT STRATEGY AND FACILITATION**

Rifeline will call in to 18 monthly planning teleconferences with the project team. Tasks could include:

- Draft agenda
- Facilitate meeting, or assist in facilitation
- Send out action items

Rifeline will develop a public involvement plan. Tasks could include:

- Draft plan
- Identify stakeholders
- Assist Austin Water with some stakeholder outreach
- Draft up to four (4) online or phone surveys, or a combination of the two

- Produce a survey summary report

Rifeline will also set up and facilitate three (3) public workshops. Tasks could include:

- Provide logistics for three (3) public workshops
- Facilitate workshops
- Assist with material development
- Provide documentation and feedback from workshops

Rifeline will assist in up to ten (10) planned Austin Water Utility outreach activities or existing community events on an as-needed basis. Tasks could include:

- Provide guidance on public outreach opportunities
- Attend public events
- Review and provide feedback on surveys or other materials
- Draft a summary report on stakeholder feedback from events





Consulting Services for Integrated Water Resource Plan  
April 28, 2016

**Susan Roth Consulting**



# SUSAN K. ROTH, P.E., PMP

WATER AND WASTEWATER CONSULTING

April 10, 2015

Tina Petersen, Ph.D., P.E.  
Associate Water Resources Engineer  
CDM Smith Inc.  
11490 Westheimer, Suite 700  
Houston, TX 77077

Re: City of Austin – Integrated Water Resources Plan Project

Dear Tina:

I am pleased to submit this proposal to assist CDM Smith Inc. with various services for the above referenced project. My proposed involvement would include the following, as outlined in the Supplemental Scope of Work:

## **TASK 1 – CONDUCT PUBLIC OUTREACH AND PARTICIPATION**

The City of Austin would like to refine a framework for the public outreach and participation process for the IWRP. This framework will address the incorporation of public input into the plan development process and the identification of local and regional stakeholders. The City intends to provide multiple opportunities for meaningful public input on water demand-side and supply-side strategies and plan development, seeking stakeholder input that reflects the diversity of Austin's population. Susan Roth Consulting will assist as a public involvement sub-consultant, working closely with Rifeline and specializing in technical advice.

Susan Roth Consulting will call in to up to 12 monthly planning meetings with the project team depending on her available budget. Tasks could include reviewing agendas and attending meetings. Susan Roth Consulting will also assist in the development of a public involvement plan. Tasks could include:

- Review and provide feedback on plan
- Identify stakeholders
- Review and provide feedback on up to four (4) online or phone surveys, or a combination of the two
- Review and provide feedback on survey summary report

Susan Roth Consulting will also set up and help facilitate the technical aspects of three (3) public workshops. Tasks could include the following depending on her available budget:

- Attend three (3) public workshops
- Facilitate technical portion of workshops
- Assist with material development
- Review documentation and feedback from workshops for technical aspects

Susan Roth Consulting will assist in up to 12 planned Austin Water Utility (AWU) outreach activities on an as-needed basis; tasks could include the following depending on her available budget:

- Provide guidance on public outreach opportunities
- Attend public events
- Review and provide feedback on surveys or other materials
- Assist with drafting a summary report on stakeholder feedback from events

## **TASK 2 – DEVELOP METHODOLOGY FOR OPTIONS AND PORTFOLIO EVALUATION**

This task is focused on developing a methodology to conduct an “apples-to-apples” comparison of demand-side and supply-side options, as well as scoring portfolios. This methodology will detail how options will be characterized, screened, and compared as well as how portfolios will be constructed (using themes) and anticipated techniques for portfolio scoring and ranking. Susan Roth Consulting will assist CDM Smith Inc. with reviewing the methodology developed by the team and providing necessary feedback and input.

## **TASK 4 – CONDUCT WATER CONSERVATION POTENTIAL ASSESSMENT**

Water conservation programs (i.e., demand management) have been and will continue to be a critical element in Austin’s management of water resources. Accordingly, AWU and the 2015 Task Force have established demand management strategies as major focal points for their IWRP. The purpose of Task 4 is to describe existing conservation measures implemented by AWU, identify potential new measures for future implementation, screen the existing and proposed measures to a list of those considered for the future, and characterize and quantify those measures. The deliverable for this task (‘Conservation Potential Assessment Technical Memorandum’) will be managed and overseen by Susan Roth Consulting.

### **Task 4.1: Demand Management Screening**

Each potential measure initially identified will be screened according to the factors defined in Task 2. The review of these measures will be cursory, based on the expertise and knowledge of the CDM Smith team and AWU staff. Susan Roth Consulting will review and provide feedback on the screening process.

### **Task 4.2: Evaluate Demand Management Options**

Working from the final list developed in Task 4.1 and the criteria and methodology developed in Task 2, CDM Smith will evaluate and characterize the demand management measures under consideration. The evaluation will include the characterization needed to properly rank and score each measure within the matrix and details needed to quantify the demand reduction opportunity (Task 4.4) and develop the cost and yield data (Task 4.5). CDM Smith will build upon the conservation program assessments conducted by AWU staff, utilizing, to the extent practical, existing calculations, assessments, and data. Susan Roth Consulting will review and provide feedback on the demand management options.

### **Task 4.3: Developing Water Use Cost Benchmarks**

CDM Smith will work with AWU to establish a set of performance benchmarks that define the success factors for each demand management measure under evaluation. The benchmarks will be specific and meaningful to the measure. As an example, rebates may be evaluated according to the number issued per year. The performance benchmarks developed in this task will be useful in monitoring the success of implemented conservation measures in the future. Susan Roth Consulting will review and provide feedback on the water use cost benchmarks.



**Task 4.4: Identify Demand Reduction Opportunities**

The demand management strategies identified in Task 4.2 and the demand model developed in Task 3, CDM Smith will identify the potential demand reduction opportunities for the evaluated measures. The demand savings will be calculated in close coordination so that potential impacts, such as reduced wastewater, are quantified. Susan Roth Consulting will review and provide feedback on the potential demand reduction opportunities.

**Task 4.5: Develop Cost and Yield Data**

CDM Smith will conduct an economic benefit-cost assessment that will include calculation of the net present value, benefit-cost ratio, levelized unit cost (e.g., dollars per thousand gallons saved), pay-back period, and return on investment for each measure. These economic indicators will be used to further rank the measures on the basis of economic benefit. The unit cost of measures will be compared with unit costs of current water and other supply alternatives in Task 7 and later tasks for a true “apples-to-apples” comparison. Susan Roth Consulting will review and provide feedback on the economic benefit-cost assessment.

**Task 4.6: Coordination and Cooperative Conservation Improvements**

Susan Roth Consulting will evaluate and recommend opportunities for coordination of demand management measures between LCRA (wholesale raw water provider) and AWU, City of Pflugerville, Barton Springs Edwards Aquifer Conservation District and potentially other adjacent communities. The results of this task will be summarized in a technical memorandum.

**Task 4.7: Summarize Conservation Progress**

Susan Roth Consulting will summarize AWU’s successes to date, starting with the program’s genesis in 1985 and summarizing achievements as documented in the 2006 and 2009 Citizen Water Conservation Implementation Task Force, the 2012 Report prepared as part of AWU’s pro-rata curtailment plan, and supplement with input from AWU staff in a technical memorandum. The outcome of this task will be a document that summarizes not only the history of AWU’s conservation efforts but also the estimated water savings from each of the implemented programs. This task will summarize the conservation measures implemented, both past and current, and serve as a foundation for Task 4.1 through Task 4.5.

**TASK 8 – FORMULATE WATER SUPPLY AND DEMAND MANAGEMENT PORTFOLIOS****Task 8.2: Portfolio Evaluation**

CDM Smith will use a spreadsheet-based evaluation to add up the supplies for each portfolio, identify and eliminate any “competing” options, and ultimately compare to the projected demand. Then reliability of the portfolios can be assessed using the WAM model. Susan Roth Consulting will assist CDM Smith with providing input on potential competing options, best ways to structure portfolios as a combination of water conservation options, and reviewing a technical memorandum developed by CDM Smith.

**TASK 9 – CONDUCT FINANCIAL ANALYSIS AND EVALUATION****Task 9.1: Evaluate Financial Considerations**

To create a comprehensive estimate of the supply and demand-side portfolios selected in Task 8, CDM Smith will develop a cost spreadsheet that will be used to evaluate financial considerations for each of the portfolios. The Unified Cost Model (UCM), an MS Excel based spreadsheet which was developed by the Texas Water Development Board for regional water planning, will form the basis of the costing spreadsheet. Once the cost analysis is complete on



these projects, the resulting cost estimate will be organized into a summary spreadsheet. Susan Roth Consulting will review and provide necessary feedback and comments on the summary spreadsheet.

### **Task 9.2: Financial Options**

CDM Smith and Susan Roth Consulting will summarize, at a high level, potential financing options including alternate project delivery methods. This summary will identify potential opportunities for regional partnerships and cooperation, cost sharing, and revenue-positive or revenue-neutral opportunities for consideration in infrastructure and facilities planning when feasible. Financing options to be explored will include expansion of the use of impact fees to support projects aimed at improving water use efficiency.

CDM Smith and Susan Roth Consulting will also evaluate funding mechanisms and requirements for decentralized, graywater, and rainwater harvesting options, exploring the use of private capital options to finance decentralized infrastructure throughout the city, including a potential Service Extension Request (SER) process approach. This information will be summarized in a technical memorandum.

### **Task 9.3: Alternative Utility Rate Structure and Business Model Approaches**

CDM Smith will develop case studies for up to three water-conscious cities with recent alternative rate structure innovations that are intended to modify behavior and reduce total demand and/or peak demand. This qualitative analysis will examine scarcity pricing techniques from one Australia city and two U.S. cities that will be determined in coordination with AWU. Susan Roth Consulting will attend one coordination meeting with AWU and the CDM Smith team, as well as review and provide necessary feedback and comments on the case studies/technical memorandum; the final deliverable for Task 9 will be managed and overseen by Susan Roth Consulting.

## **TASK 10 – FORMULATE WATER SUPPLY AND DEMAND MANAGEMENT PORTFOLIOS**

CDM Smith will score and rank portfolios using a process called multi-criteria decision analysis (MCDA). This process will use the criteria and criteria weighting developed from Task 2, along with performance measures, to compare the portfolios. A simple spreadsheet tool will be used to add up the supplies from each portfolio to meet specified water demands.

CDM Smith will use Criterium Decision Plus software to rank the portfolios. This software converts the uniquely measured units for the criteria into standardized units for easy comparison and ranking of alternatives. The ranking of portfolios will easily show trade-offs between them and allow for stakeholders to understand the advantages and disadvantages of the portfolios. Susan Roth Consulting will provide input on qualitative performance measures for the developed portfolios and review the memorandum that would summarize outcomes of portfolio scoring.

## **TASK 11 – DEVELOP PLAN RECOMMENDATIONS**

At the conclusion of the scoring processes for supply/demand options and portfolios, CDM Smith will arrive at a set of recommendations that reflect the community's values in terms of affordability, supply diversity, sustainability, environmental protection, and drought resilience. These will be organized as short-, medium-, and long-term recommendations, consistent with previous AWU concepts. CDM Smith will also identify short term strategies that have potential as drought response options.

CDM Smith will prepare a set of case studies using elements from the three case studies (cities identified in Task 9) for AWU to use in their communications with the City Council, other departments, Boards, Commissions, 2015 Task Force, and stakeholders. Each case study will showcase supply and demand management options and identifying emerging supply and demand management issues. Susan Roth Consulting will assist in the development of the updated short-term tiered drought management plan that would be included as part of this task. Susan Roth Consulting will also provide input on the recommendations coming out of the project.

My estimated fee for the activities listed above, including travel time, expenses and mileage is a lump sum amount of \$80,361.96; please note detailed budget provided in table below.

Task No.	Description of Task	No. of Hours	Budget Amount
1.0	Conduct Public Outreach and Participation	88	\$12,788.16
2.0	Develop Methodology for Options and Portfolio Evaluation	18	\$2,615.76
4.1	Demand Management Screening	24	\$3,487.68
4.2	Demand Management Options	24	\$3,487.68
4.3	Developing Water Use Benchmarks	32	\$4,650.24
4.4	Identify Demand Reduction Opportunities	32	\$4,650.24
4.5	Develop Cost and Yield Data	24	\$3,487.68
4.6	Coordination and Cooperative Conservation Improvements	60	\$8,719.20
4.7	Summarize Conservation Progress	80	\$11,625.60
8.2	Portfolio Evaluation	16	\$2,325.12
9.1	Evaluate Financial Considerations	16	\$2,325.12
9.2	Financial Options	80	\$11,625.60
9.3	Alternative Utility Rate Structure & Business Model Approaches	16	\$2,325.12
10.0	Score Demand and Supply Side Portfolios	16	\$2,325.12
11.0	Develop Plan Recommendations	27	\$3,923.64
TOTAL		553	\$80,361.96

If CDM Smith Inc. needs additional services from me, then my time, including meeting preparation and travel time, will be charged at the approved hourly rate of \$145.32. I will submit invoices to CDM Smith Inc. on a monthly basis; payment is due within 30 days.

I look forward to working with you and the City of Austin. Please let me know if this proposal is acceptable; feel free to call me at (512) 796-6692 with any questions.

Sincerely,



Susan K. Roth, P.E., PMP  
President  
Susan Roth Consulting, LLC

## ATTACHMENT 4

### QUALITY CONTROL PLAN (QCP)

#### **Definitions**

##### *Quality Assurance*

A comprehensive program that verifies a facility, structure, system or component will perform satisfactorily and safely in service. A recognized benchmark for quality assurance programs is ISO 9000/9001.

##### *Quality Control*

The process of identifying and applying appropriate technical and professional standards when producing project design documents that meet or exceed the user's requirements.

##### *Constructability*

A review process using experienced personnel with extensive construction knowledge early and throughout the design phase to ensure projects are buildable, practical, and consistent with current construction practices while also being cost effective, biddable, and maintainable.

#### **Due Date:**

The Consultant must submit the QCP plan for the Owner's approval within fourteen (14) calendar days following the Owner's issuance a Notice to Proceed to the Consultant.

#### **Required Elements of QCP Plan (Sec. 1.3 of PSA)**

<b>Management Philosophy</b>	
1	<p><i>The QCP specifies how the organization's technical management philosophy supports its commitment to quality</i></p> <p><u><i>Needed:</i></u> <i>Certification by consultant firm's Board of Directors, president, owner, managing partner, or other executive-level staff that, to ensure quality of design products:</i></p> <p><i>(a) firm is committing adequate manpower and resources</i></p> <p><i>(b) Project Design Team (PDT) is accountable to Independent Technical Review Team (ITRT)</i></p> <p><i>(c) Management and the PDT will emphasize quality control during the production of design documents</i></p> <p><i>(d) Management and the PDT will establish internal quality checks and reviews</i></p> <p><i>(e) Management and the PDT will assess independent quality control's contribution to the quality of design documents</i></p>



<b>Management / Organization Structure</b>	
2	<p><i>The QCP specifies:</i></p> <ul style="list-style-type: none"> <li>• who manages the Independent Technical Review Team (ITRT) (internal or external to the design consulting firm)</li> <li>• if the ITRT is internal to the design consulting firm, that the ITRT is independent of the Project Design Team (PDT)</li> <li>• the ITRT reports to a management level the same or higher than the PDT</li> <li>• interrelationships of management, PDT, and ITRT (including all consultants)</li> </ul> <p><u>Needed:</u></p> <p>(a) <i>An organization chart depicting the relationships of all parties noted above, identifying them by name and describing each person's responsibilities on the design project</i></p> <p>(b) <i>Resumes for members of the ITRT</i></p>
<b>Quality Control Procedures</b>	
3	<p><i>The QCP specifies</i></p> <ul style="list-style-type: none"> <li>• management and control of design and QCP documents</li> </ul> <p><u>Needed:</u></p> <p>(a) <i>Statement that access to design and QCP documents will be controlled</i></p> <p>(b) <i>Procedures are defined to identify and track versions of documents</i></p> <p>(c) <i>Document control plan</i></p> <p>(d) <i>Also refer to "Documentation" section below</i></p>
4	<ul style="list-style-type: none"> <li>• internal and external communications, including an Issue Follow-Up Plan</li> </ul> <p><u>Needed:</u></p> <p>(a) <i>description of management of QCP communications with all parties</i></p> <p>(b) <i>Issue Follow-Up Plan to track problems identified and their resolution</i></p>
5	<ul style="list-style-type: none"> <li>• design coordination</li> </ul> <p><u>Needed:</u> <i>Procedure must describe:</i></p> <p>(a) <i>relationships, accountability, authority, and responsibilities within the Project Design Team</i></p> <p>(b) <i>efforts to achieve interdisciplinary coordination</i></p>
6	<ul style="list-style-type: none"> <li>• design checks and reviews, specifically addressing: <ul style="list-style-type: none"> <li>▪ correct application of methods</li> <li>▪ validity of data and assumptions</li> <li>▪ accuracy of calculations</li> </ul> </li> </ul>



	<ul style="list-style-type: none"> <li>▪ complete documentation</li> <li>▪ testing, modeling, assumptions, calculations, text &amp; graphical presentations in all documents</li> <li>▪ special project components</li> <li>▪ compliance with all applicable guidance, standards, regulations, codes &amp; laws</li> <li>▪ ensuring project is biddable, constructible and operable as well as environmentally compliant</li> </ul> <p><u>Needed:</u></p> <p><i>(a) types, intervals and frequency of reviews</i></p> <p><i>(b) identification of applicable guidance, standards, codes, specifications and laws</i></p> <p><i>(c) methodology for addressing constructability</i></p> <p><i>(d) description of testing, modeling, development of assumptions, calculations, and presentation methods in design documents to meet design criteria and standards of professional practice</i></p> <p><i>(e) methodology for identifying and addressing all appropriate environmental requirements</i></p>
7	<ul style="list-style-type: none"> <li>• independent technical reviews, specifically ensuring: <ul style="list-style-type: none"> <li>▪ seniority and technical qualifications of Independent Technical Review Team (ITRT) members and their separation from the Project Design Team (PDT)</li> <li>▪ concepts, assumptions and procedural details are accurate, appropriate and fully coordinated</li> <li>▪ examination of appropriate alternatives</li> <li>▪ definition and scoping of problems, issues and opportunities</li> <li>▪ validity of analytical methods</li> <li>▪ results and recommendations are reasonable, comply with all requirements, and are supported by the documents</li> <li>▪ any deviations from policy, guidelines or standards have been identified and approved by the appropriate parties</li> <li>▪ design documents result in project that is biddable, constructible, operable, environmentally sound, and cost-effective</li> <li>▪ design products meet City's needs</li> </ul> </li> </ul> <p><u>Needed:</u></p> <p><i>(a) Description of how the Independent Technical Review Team (ITRT) will validate the quality of the Project Design Team's (PDT) products prior to submission to the PM</i></p> <p><i>(b) Identification of any design components that will require special quality reviews</i></p> <p><i>(c) checklists for review of each design element</i></p>
8	<ul style="list-style-type: none"> <li>• managerial plan to maintain continuity of QCP effort</li> </ul> <p><u>Needed:</u></p> <p><i>(a) description of how management will maintain required level of effort and quality</i></p>

	<p><i>resources</i></p> <p><i>(b) contingency plan for replacement of key PDT and/or ITRT staff</i></p>
<b>Documentation</b>	
9	<p><i>The QCP specifies:</i></p> <ul style="list-style-type: none"> <li>records control plan for all internal review documents, associated comments and responses, describing that: <ul style="list-style-type: none"> <li>all documents retained in consultant's files</li> <li>files are auditable and available to the City upon request</li> <li>files are identified by document type and compiled according to a file index system</li> </ul> </li> </ul> <p><u><i>Needed:</i></u> <i>Details on all items listed above</i></p>
10	<ul style="list-style-type: none"> <li>upon project completion, the consultant will certify compliance with the QCP</li> </ul> <p><u><i>Needed:</i></u> <i>Consultant submits draft Consultant Statement of Technical Review</i></p> <p><i>(a) verifying compliance with the QCP and</i></p> <p><i>b) agreeing to identify and assess issues that arise during later project phases with respect to the QCP</i></p> <p><i>The Statement must be signed by the Project Design Team (PDT), the Independent Technical Review Team (ITRT), and the Principal (or other executive-level official) of the consultant. The consultant will provide the City all Issues analyses from later phases</i></p>
<b>Schedule</b>	
11	<p><i>The QCP specifies that:</i></p> <ul style="list-style-type: none"> <li>a design schedule showing the sequence of tasks to be completed within the time period specified by the City; must include <ul style="list-style-type: none"> <li>design submittal dates to City</li> <li>project design team (PDT) reviews</li> <li>Independent Technical Review Team (ITRT) reviews</li> <li>time for revisions prior to submittals to City</li> <li>time for City review of submittals</li> </ul> </li> <li>how all QCP measures will be tracked to avoid project delays</li> </ul> <p><u><i>Needed:</i></u> <i>Items as described above</i></p>

## ATTACHMENT 5: RESOURCE ALLOCATION PLAN

**Note:** PM will advise Consultant of level of detail and payment benchmarks desired for Task Descriptions

Task Description	Budget	Start Date	End Date	Complete	% Paid	% Time
Task 1, Conduct Public Outreach and Participation	<b>\$126,699</b>	6/1/2016	12/1/2017	0.0%	0.0%	0.0%
CDM Smith	\$19,827	6/1/2016	12/1/2017	0.0%	0.0%	0.0%
Rifeline	\$69,995	6/1/2016	12/1/2017	0.0%	0.0%	0.0%
Susan Roth	\$12,788	6/1/2016	12/1/2017	0.0%	0.0%	0.0%
Adisa	\$19,000	6/1/2016	12/1/2017	0.0%	0.0%	0.0%
5% Mark-up	\$5,089			0.0%	0.0%	0.0%
Task 2, Develop Methodology for Options Evaluation	<b>\$25,237</b>	6/1/2016	8/1/2016	0.0%	0.0%	0.0%
CDM Smith	\$17,168	6/1/2016	8/1/2016	0.0%	0.0%	0.0%
Susan Roth	\$2,616	6/1/2016	8/1/2016	0.0%	0.0%	0.0%
Barrett	\$770	6/1/2016	8/1/2016	0.0%	0.0%	0.0%
GHD	\$4,298	6/1/2016	8/1/2016	0.0%	0.0%	0.0%
5% Mark-up	\$384			0.0%	0.0%	0.0%
Task 3, Evaluate and Forecast Disaggregated Water Demands	<b>\$73,626</b>	6/1/2016	10/1/2016	0.0%	0.0%	0.0%
CDM Smith	\$65,424	6/1/2016	10/1/2016	0.0%	0.0%	0.0%
GHD	\$7,811	6/1/2016	10/1/2016	0.0%	0.0%	0.0%
5% Mark-up	\$391			0.0%	0.0%	0.0%
Task 4, Conduct Water Conservation Potential Assessment	<b>\$89,236</b>	6/1/2016	6/1/2016	0.0%	0.0%	0.0%
CDM Smith	\$47,122	6/1/2016	12/1/2016	0.0%	0.0%	0.0%
Susan Roth	\$40,108	6/1/2016	12/1/2016	0.0%	0.0%	0.0%
5% Mark-up	\$2,005			0.0%	0.0%	0.0%
Task 5, Incorporate Impacts of Climate Change on Water Supply and Demand	<b>\$31,214</b>	11/1/2016	2/1/2017	0.0%	0.0%	0.0%
CDM Smith	\$23,346	11/1/2016	2/1/2017	0.0%	0.0%	0.0%
Crespo	\$7,493	11/1/2016	2/1/2017	0.0%	0.0%	0.0%
Subconsultant Mark-up	\$375	11/1/2016	2/1/2017	0.0%	0.0%	0.0%
Task 6, Evaluate Water Supply and Diversification Options	<b>\$217,292</b>	6/1/2016	1/1/2017	0.0%	0.0%	0.0%
CDM Smith	\$50,549	6/1/2016	1/1/2017	0.0%	0.0%	0.0%
Barrett	\$1,541	6/1/2016	1/1/2017	0.0%	0.0%	0.0%
Crespo	\$64,994	6/1/2016	1/1/2017	0.0%	0.0%	0.0%
GHD	\$83,068	6/1/2016	1/1/2017	0.0%	0.0%	0.0%
Guyton	\$9,200	6/1/2016	1/1/2017	0.0%	0.0%	0.0%
5% Mark-up	\$7,940	6/1/2016	1/1/2017	0.0%	0.0%	0.0%
Task 7, Score Demand and Supply Side Options	<b>\$28,803</b>	12/1/2016	2/1/2017	0.0%	0.0%	0.0%
CDM Smith	\$20,307	12/1/2016	2/1/2017	0.0%	0.0%	0.0%
Barrett	\$3,082	12/1/2016	2/1/2017	0.0%	0.0%	0.0%
GHD	\$1,926	12/1/2016	2/1/2017	0.0%	0.0%	0.0%
Guyton	\$3,084	12/1/2016	2/1/2017	0.0%	0.0%	0.0%
5% Mark-up	\$405	12/1/2016	2/1/2017	0.0%	0.0%	0.0%
Task 8, Develop and Evaluate Water Supply and Demand Management Options	<b>\$33,327</b>	2/1/2017	4/1/2017	0.0%	0.0%	0.0%
CDM Smith	\$22,679	2/1/2017	4/1/2017	0.0%	0.0%	0.0%
Susan Roth	\$2,325	2/1/2017	4/1/2017	0.0%	0.0%	0.0%
GHD	\$4,611	2/1/2017	4/1/2017	0.0%	0.0%	0.0%
Guyton	\$3,205	2/1/2017	4/1/2017	0.0%	0.0%	0.0%
5% Mark-up	\$507	2/1/2017	4/1/2017	0.0%	0.0%	0.0%

Task 9, Conduct Financial Analysis and Evaluation	<b>\$96,599</b>	6/1/2016	5/1/2017	0.0%	0.0%	0.0%
CDM Smith	\$41,103	6/1/2016	5/1/2017	0.0%	0.0%	0.0%
Susan Roth	\$16,276	6/1/2016	5/1/2017	0.0%	0.0%	0.0%
Encotech	\$29,988	6/1/2016	5/1/2017	0.0%	0.0%	0.0%
GHD	\$6,589	6/1/2016	5/1/2017	0.0%	0.0%	0.0%
5% Mark-up	\$2,643	6/1/2016	5/1/2017	0.0%	0.0%	0.0%
Task 10, Score Demand and Supply Side Portfolios	<b>\$48,967</b>	4/1/2017	7/1/2017	0.0%	0.0%	0.0%
CDM Smith	\$14,508	4/1/2017	7/1/2017	0.0%	0.0%	0.0%
Susan Roth	\$2,325	4/1/2017	7/1/2017	0.0%	0.0%	0.0%
Barrett	\$1,541	4/1/2017	7/1/2017	0.0%	0.0%	0.0%
Crespo	\$9,954	4/1/2017	7/1/2017	0.0%	0.0%	0.0%
Encotech	\$18,998	4/1/2017	7/1/2017	0.0%	0.0%	0.0%
5% Mark-up	\$1,641	4/1/2017	7/1/2017	0.0%	0.0%	0.0%
Task 11, Develop Plan Recommendations	<b>\$36,893</b>	6/1/2017	9/1/2017	0.0%	0.0%	0.0%
CDM Smith	\$15,990	6/1/2017	9/1/2017	0.0%	0.0%	0.0%
Susan Roth	\$3,924	6/1/2017	9/1/2017	0.0%	0.0%	0.0%
Crespo	\$7,524	6/1/2017	9/1/2017	0.0%	0.0%	0.0%
GHD	\$8,460	6/1/2017	9/1/2017	0.0%	0.0%	0.0%
5% Mark-up	\$995	6/1/2017	9/1/2017	0.0%	0.0%	0.0%
Task 12, Develop Plan Report	<b>\$59,556</b>	6/1/2017	12/1/2017	0.0%	0.0%	0.0%
CDM Smith	\$46,063	6/1/2017	12/1/2017	0.0%	0.0%	0.0%
K2	\$1,613	6/1/2017	12/1/2017	0.0%	0.0%	0.0%
Barrett	\$2,696	6/1/2017	12/1/2017	0.0%	0.0%	0.0%
GHD	\$8,541	6/1/2017	12/1/2017	0.0%	0.0%	0.0%
5% Mark-up	\$643			0.0%	0.0%	0.0%
Task PM, Project Management	<b>\$86,095</b>	6/1/2016	12/1/2017	0.0%	0.0%	0.0%
CDM Smith	\$53,102	6/1/2016	12/1/2017	0.0%	0.0%	0.0%
GHD	\$31,423	6/1/2016	12/1/2017	0.0%	0.0%	0.0%
5% Mark-up	\$1,571	6/1/2016	12/1/2017	0.0%	0.0%	0.0%
<b>Sub Project Total</b>	<b>\$953,544</b>					
<b>Reimbursable Expenses:</b>						
CDM Smith	\$20,400					
K2	\$6,200					
Adias	\$150					
Crespo	\$36					
GHD	\$18,400					
5% Mark-up	\$1,239					
<b>Sub Reimbursement Expenses Total:</b>	<b>\$46,425</b>					
<b>Project Total</b>	<b>\$999,969</b>			0.0%	0.0%	0.0%

**APPROVED FIXED CONSTRUCTION BUDGET: Not applicable**

**DATE OF CURRENT FCB: Not applicable**

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TASK 1		
Agreed Upon Fixed Fee Dollar Amount		\$126,699.00
Maximum Cost		
	TASK 1 TOTAL	\$126,699.00
TASK 2		
Agreed Upon Fixed Fee Dollar Amount		\$25,237.00
Maximum Cost		
	TASK 2 TOTAL	\$25,237.00
TASK 3		
Agreed Upon Fixed Fee Dollar Amount		\$73,626.00
Maximum Cost		
	TASK 3 TOTAL	\$73,626.00
TASK 4		
Agreed Upon Fixed Fee Dollar Amount		\$89,236.00
Maximum Cost		
	TASK 4 TOTAL	\$89,236.00
TASK 5		
Agreed Upon Fixed Fee Dollar Amount		\$31,214.00
Maximum Cost		
	TASK 5 TOTAL	\$31,214.00
TASK 6		
Agreed Upon Fixed Fee Dollar Amount		\$217,292.00
Maximum Cost		
	TASK 6 TOTAL	\$217,292.00
TASK 7		
Agreed Upon Fixed Fee Dollar Amount		\$28,803.00
Maximum Cost		
	TASK 7 TOTAL	\$28,803.00
TASK 8		
Agreed Upon Fixed Fee Dollar Amount		\$33,327.00
Maximum Cost		
	TASK 8 TOTAL	\$33,327.00
TASK 9		
Agreed Upon Fixed Fee Dollar Amount		\$96,599.00
Maximum Cost		
	TASK 9 TOTAL	\$96,599.00
TASK 10		
Agreed Upon Fixed Fee Dollar Amount		\$48,967.00
Maximum Cost		
	TASK 10 TOTAL	\$48,967.00
TASK 11		
Agreed Upon Fixed Fee Dollar Amount		\$36,893.00
Maximum Cost		
	TASK 11 TOTAL	\$36,893.00
TASK 12		
Agreed Upon Fixed Fee Dollar Amount		\$59,556.00
Maximum Cost		
	TASK 12 TOTAL	\$59,556.00

TASK PM

Agreed Upon Fixed Fee Dollar Amount  
Maximum Cost

\$86,095.00

TASK PM TOTAL

\$86,095.00

REIMBURSABLE COSTS TOTAL

\$46,425.00

MAXIMUM NOT-TO-EXCEED CONTRACT AMOUNT

\$999,969.00