



Chandler - Arizona  
Water Values Make The Difference

**PURCHASING ITEM  
FOR  
COUNCIL AGENDA  
CP15-001**

**1. Agenda Item Number:**

21

**2. Council Meeting Date:**

July 10, 2014

**TO: MAYOR & COUNCIL**

**3. Date Prepared:** June 24, 2014

**THROUGH: CITY MANAGER**

**4. Requesting Department:** Municipal Utilities

**5. SUBJECT:** Design Contract to Carollo Engineers, Inc., for Ocotillo Water Reclamation Facility Expansion.

**6. RECOMMENDATION:** Staff recommends City Council award a Construction Manager at Risk (CMAR) Design Contract to Carollo Engineers, Inc., for Ocotillo Water Reclamation Facility Expansion, Contract No. WW1301.201, in an amount not to exceed \$8,999,936.

**7. BACKGROUND/DISCUSSION:** This contract is for professional design services for the construction and commissioning of a new treatment system and supporting areas, to expand the Ocotillo Water Reclamation Facility (OWRF). The new treatment system and supporting areas will be located immediately to the north and west of the existing OWRF, located at 3333 South Old Price Road. Currently, the OWRF has a ten million gallon per day (MGD) capacity. This initial phase of construction will add five MGD capacity. The future phases will accommodate build-out capacity.

This project scope of work consists of the completion of permitting, public outreach, preliminary and detailed design documents for the initial five MGD plant expansion. This scope of work will also include modifications to the new Airport Lift Station to serve as a joint influent pump station, new joint headworks, membrane bioreactor treatment, disinfection, basin/tank covers, foul air ductwork and associated odor control systems, solids handling facilities, as well as effluent water storage and pumping facilities. The design also includes a new administration building, process laboratory, extensive perimeter landscaping and coordination with a Construction Manager At Risk (CMAR) contractor.

Construction related contracts for the OWRF Expansion will be awarded separately.

**8. EVALUATION PROCESS:** On July 16, 2013, the consultant was selected in accordance with State law, and City policies and procedures. Staff reviewed the scope of work, billing rates, and total fee for this project, compared them to historical costs, and determined they are reasonable. The contract completion time is 420 calendar days following Notice to Proceed.

**9. FINANCIAL IMPLICATIONS:**

Cost: \$8,999,936  
Savings: N/A  
Long Term Costs: N/A  
Fund Source:

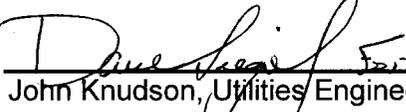
<u>Account No.:</u>	<u>Fund Name:</u>	<u>Program Name:</u>	<u>CIP Funded:</u>	<u>Amount:</u>
614.3910.6817.6WW022	Wastewater SDF	Water Reclamation Facility Expansion	Yes	\$8,999,936

**10. PROPOSED MOTION:** Move City Council award a Construction Manager At Risk (CMAR) Design Contract to Carollo Engineers, Inc., for Ocotillo Water Reclamation Facility Expansion, Contract No. WW1301.201, in an amount not to exceed \$8,999,936.

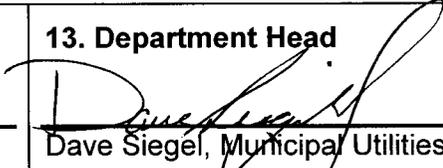
**Attachments:** Contract, Location Map

**APPROVALS**

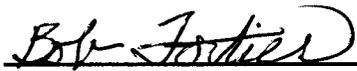
**11. Requesting Department**

  
John Knudson, Utilities Engineering Manager

**13. Department Head**

  
Dave Siegel, Municipal Utilities Director

**12. Transportation & Development**

  
Bob Fortier, Capital Projects Manager

**14. City Manager**

  
Rich Dlugas

**CONSTRUCTION MANAGER AT RISK  
DESIGN CONSULTANT CONTRACT**

PROJECT TITLE: **OCOTILLO WATER RECLAMATION FACILITY (OWRF) EXPANSION**  
PROJECT NO: **WW1301.201**

This Contract is made and entered into by and between the City of Chandler, Arizona, a municipal Corporation, hereinafter called the CITY, and **Carollo Engineers, Inc.**, a Delaware corporation, licensed to do business in the State of Arizona, hereinafter called DESIGN CONSULTANT.

WHEREAS, DESIGN CONSULTANT represents DESIGN CONSULTANT has the expertise and is qualified to perform the services described in this Contract; and

WHEREAS, the Mayor and City Council/City Manager of the City of Chandler are authorized and empowered by the provisions of the City Charter to execute Contracts for Professional Services; and

WHEREAS, the Parties intend to have this Project designed and constructed using a Construction Manager at Risk method with DESIGN CONSULTANT being a part of a Design Team; and

NOW THEREFORE, for and in consideration of the mutual covenants and conditions hereinafter contained, it is agreed by and between the CITY and DESIGN CONSULTANT, as follows:

**1. DESCRIPTION OF PROJECT:**

The Project known as the **OCOTILLO WATER RECLAMATION FACILITY (OWRF) EXPANSION** will construct and commission a new treatment train and supporting appurtenances to expand the OWRF at 3333 South Old Price Road, in Chandler Arizona, as specifically described in Exhibit A-1, attached hereto and incorporated herein by reference.

**2. DEFINITIONS:**

Words used in this Contract which are defined in CITY's General Conditions for Construction Contracts shall have the meaning stated therein. DESIGN CONSULTANT is the Project Designer as defined in said General Conditions.

**3. SCOPE OF WORK:**

DESIGN CONSULTANT shall design the Project all as more specifically described in Attachment A-1 attached hereto and incorporated herein by reference.

**4. DESIGN TEAM:**

DESIGN CONSULTANT shall be a part of and participate together with the Design Team (See Project Team Personnel Attachment A-2) and shall attend meetings with, provide information to and cooperate with the person retained by CITY to be the Construction Manager at Risk (CM@RISK).

**5. FEE FOR SERVICES:**

The CITY shall pay DESIGN CONSULTANT a fee not to exceed the sum of **Eight Million Nine Hundred Ninety Nine Thousand Nine Hundred Thirty Six dollars (\$8,999,936)** at the rates shown attached hereto as Attachment B-2, and in accordance with the fee schedule attached hereto as Attachment B-1 and made a part hereof by reference. Payment will be made monthly on the basis of

progress reports corresponding with the rates and charges listed on the fee schedule and showing the number of hours or other basis to determine the fee earned to that date. An Application and Certification for Payment Sheet must be provided. In addition, the following must also be included with each application for payment: a clear, detailed invoice reflecting items being billed for, reimbursables; a summary sheet showing percentage of work completed to date; amount/percent billed to date; current status of all tasks within a project; and any/all backup documentation supporting the above items. Work schedule updates shall also be included in the monthly progress payment requests.

**6. PERIOD OF SERVICE:**

Following receipt of a "Notice to Proceed" with the design work, DESIGN CONSULTANT shall complete the design and have all documents ready for construction or bidding within **Four Hundred Twenty (420)** calendar days of the date indicated on the Notice to Proceed.

**7. OPINIONS OF PROBABLE COSTS (ESTIMATES):**

Any opinions of probable project cost or probable construction cost provided by DESIGN CONSULTANT are made on the basis of information available to DESIGN CONSULTANT and on the basis of DESIGN CONSULTANT's experience and qualifications, and represents its best judgement as an experienced, licensed and qualified professional. However, since DESIGN CONSULTANT has no control over the cost of labor, materials, equipment or services furnished by others, or over the contractor(s) methods of determining prices, or over competitive bidding or market conditions, DESIGN CONSULTANT does not guarantee that proposals, bids or actual project or construction cost will not vary from opinions of probable cost DESIGN CONSULTANT prepares. The DESIGN CONSULTANT is responsible for advising and consulting with the City on cost. DESIGN CONSULTANT is not responsible for providing for formal estimates, this is the CM@Risk responsibility.

**8. REPORTS & APPROVALS:**

All work shall be subject to the approval by CITY and each phase of the work will be submitted to CITY in accordance with schedule included in Exhibit A and in the format prescribed by CITY. When requested by CITY, DESIGN CONSULTANT will attend Council meetings and provide finished documents including correspondence for Council action, supporting charts, graphs, drawings and colored slides of same.

**9. STANDARD OF PERFORMANCE:**

A. This design contract has been awarded to DESIGN CONSULTANT based on their proposal that those personnel and consultants listed in Exhibit A attached hereto will perform the portions of the work listed on said Exhibit A-2. DESIGN CONSULTANT shall not deviate nor substitute any of these team members without prior written approval by CITY.

B. DESIGN CONSULTANT shall be responsible for the technical accuracy of its services and documents resulting therefrom, and CITY shall not be responsible for discovering deficiencies therein. DESIGN CONSULTANT shall correct any such deficiencies without additional compensation or cost to CITY, except to the extent any such deficiency is directly attributable to deficiencies in CITY-furnished information.

C. DESIGN CONSULTANT shall be familiar with CITY's Standard Details and Specifications and other relevant CITY regulations. DESIGN CONSULTANT shall ensure there are no conflicts among the Contract Documents including, but not limited to, the CITY's General and Supplementary Conditions for Construction Contracts, the plans and specifications prepared by DESIGN CONSULTANT, any standard details or specifications incorporated therein by reference,

and the Construction Contract. The DESIGN CONSULTANT is responsible, along with his designers, for attesting to the design correctness and scaling the design documents.

D. DESIGN CONSULTANT shall be responsible for the completeness and accuracy of his/her work prepared or compiled under obligation for this project and shall correct, at his/her expense, all errors or omissions therein, which may be disclosed. Correction of errors disclosed and determined to exist during any construction of the project on architectural or engineering drawings and specifications shall be accomplished by the DESIGN CONSULTANT. The cost of the design necessary to correct those errors attributable to the DESIGN CONSULTANT and any damage incurred by the City as a result of additional construction costs caused by such engineering and/or architectural errors shall be chargeable to the DESIGN CONSULTANT. The fact that the City has reviewed or approved the DESIGN CONSULTANT's work shall in no way relieve the DESIGN CONSULTANT of any of DESIGN CONSULTANT's responsibilities.

#### **10. INDEMNIFICATION:**

To the fullest extent permitted by law, but only to the extent caused by the negligence, recklessness or intentional wrong conduct, DESIGN CONSULTANT, its successors, assigns and guarantors, shall defend, indemnify and hold harmless City and any of its elected or appointed officials, officers, directors, commissioners, board members, agents or employees from and against any and all allegations, demands, claims, proceedings, suits, actions, damages, including, without limitation, property damage, environmental damages, personal injury and wrongful death claims, losses, expenses (including claim adjusting and handling expenses), penalties and fines (including, but not limited to, attorney fees, court costs, and the cost of appellate proceedings), judgments or obligations, which may be imposed upon or incurred by or asserted against the City by reason of this Contract or the services performed or permissions granted under it, or related to, arising from or out of, or resulting from any negligent or intentional actions, acts, errors, mistakes or omissions caused in whole or part by DESIGN CONSULTANT, or any of its subcontractors, or anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, relating to the discharge of any duties or the exercise of any rights or privileges arising from or incidental to this Contract, including but not limited to, any injury or damages claimed by any of DESIGN CONSULTANT's and subcontractor's employees.

#### **11. INSURANCE:**

##### **1. General.**

A. At the same time as execution of this Contract, DESIGN CONSULTANT shall furnish the City of Chandler a certificate of insurance on a standard insurance industry ACORD form. The ACORD form must be issued by an insurance company authorized to transact business in the State of Arizona possessing a current A.M. Best, Inc. rating of A-7, or better and legally authorized to do business in the State of Arizona with policies and forms satisfactory to CITY. Provided, however, the A.M. Best rating requirement shall not be deemed to apply to required Worker's Compensation coverage.

B. DESIGN CONSULTANT and any of its subcontractors, subconsultants or sublicensees shall procure and maintain, until all of their obligations have been discharged, including any warranty periods under this Contract are satisfied, the insurances set forth below.

C. The insurance requirements set forth below are minimum requirements for this Contract and in no way limit the indemnity covenants contained in this Contract.

D. The City in no way warrants that the minimum insurance limits contained in this Contract are sufficient to protect DESIGN CONSULTANT from liabilities that might arise out of the performance of the Contract services under this Contract by DESIGN CONSULTANT, its agents, representatives,

employees, subcontractors, sublicensees or subconsultants and DESIGN CONSULTANT is free to purchase any additional insurance as may be determined necessary.

E. Failure to demand evidence of full compliance with the insurance requirements in this Contract or failure to identify any insurance deficiency will not relieve DESIGN CONSULTANT from, nor will it be considered a waiver of its obligation to maintain the required insurance at all times during the performance of this Contract.

F. Use of SubContractors: If any work is subcontracted in any way, DESIGN CONSULTANT shall execute a written Contract with Subcontractor containing the same Indemnification Clause and Insurance Requirements as the City requires of DESIGN CONSULTANT in this Contract. DESIGN CONSULTANT is responsible for executing the Contract with the Subcontractor and obtaining Certificates of Insurance and verifying the insurance requirements.

2. Minimum Scope and Limits Of Insurance. DESIGN CONSULTANT shall provide coverage with limits of liability not less than those stated below.

A. Commercial General Liability-Occurrence Form. DESIGN CONSULTANT must maintain "occurrence" form Commercial General Liability insurance with a limit of not less than \$2,000,000 for each occurrence, \$4,000,000 aggregate. Said insurance must also include coverage for products and completed operations, independent contractors, personal injury and advertising injury. If any Excess insurance is utilized to fulfill the requirements of this paragraph, the Excess insurance must be "follow form" equal or broader in coverage scope than underlying insurance.

B. Automobile Liability-Any Auto or Owned, Hired and Non-Owned Vehicles  
Vehicle Liability: DESIGN CONSULTANT must maintain Business/Automobile Liability insurance with a limit of \$1,000,000 each accident on DESIGN CONSULTANT owned, hired, and non-owned vehicles assigned to or used in the performance of DESIGN CONSULTANT's work or services under this Contract. If any Excess or Umbrella insurance is utilized to fulfill the requirements of this paragraph, the Excess or Umbrella insurance must be "follow form" equal or broader in coverage scope than underlying insurance.

C. Workers Compensation and Employers Liability Insurance: DESIGN CONSULTANT must maintain Workers Compensation insurance to cover obligations imposed by federal and state statutes having jurisdiction of DESIGN CONSULTANT employees engaged in the performance of work or services under this Contract and must also maintain Employers' Liability insurance of not less than \$1,000,000 for each accident and \$1,000,000 disease for each employee.

D. Professional Liability. If the Contract is the subject of any professional services or work performed by DESIGN CONSULTANT, or if DESIGN CONSULTANT engages in any professional services or work adjunct or residual to performing the work under this Contract, DESIGN CONSULTANT must maintain Professional Liability insurance covering errors and omissions arising out of the work or services performed by DESIGN CONSULTANT, or anyone employed by DESIGN CONSULTANT, or anyone whose acts, mistakes, errors and omissions the DESIGN CONSULTANT is legally liable, with a liability limit of \$1,000,000 each claim and \$2,000,000 all claims. In the event the Professional Liability insurance policy is written on a "claims made" basis, coverage must extend for 3 years past completion and acceptance of the work or services, and DESIGN CONSULTANT, or its selected Design Professional will submit Certificates of Insurance as evidence the required coverage is in effect. The Design Professional must annually submit Certificates of Insurance citing that the applicable coverage is in force and contains the required provisions for a 3 year period.

3. Additional Policy Provisions Required.

A. **Self-Insured Retentions Or Deductibles.** Any self-insured retentions and deductibles must be declared and approved by the City. If not approved, the City may require that the insurer reduce or eliminate any deductible or self-insured retentions with respect to the City, its officers, officials, agents, employees, and volunteers.

B. **City as Additional Insured.** The policies are to contain, or be endorsed to contain, the following provisions:

1. The Commercial General Liability and Automobile Liability policies are to contain, or be endorsed to contain, the following provisions: The City, its officers, officials, agents, and employees are additional insureds with respect to liability arising out of activities performed by, or on behalf of, DESIGN CONSULTANT including the City's general supervision of DESIGN CONSULTANT; Products and Completed operations of DESIGN CONSULTANT; and automobiles owned, leased, hired, or borrowed by DESIGN CONSULTANT.

2. DESIGN CONSULTANT's insurance must contain broad form contractual liability coverage and must not exclude liability arising out of explosion, collapse, or underground property damage hazards ("XCU") coverage.

3. The City, its officers, officials, agents, and employees must be additional insureds to the full limits of liability purchased by DESIGN CONSULTANT even if those limits of liability are in excess of those required by this Contract.

4. DESIGN CONSULTANT's insurance coverage must be primary insurance with respect to the City, its officers, officials, agents, and employees. Any insurance or self-insurance maintained by the City, its officers, officials, agents, and employees shall be in excess of the coverage provided by DESIGN CONSULTANT and must not contribute to it.

5. DESIGN CONSULTANT's insurance must apply separately to each insured against whom claim is made or suit is brought, except with respect to the limits of the insurer's liability.

6. Coverage provided by DESIGN CONSULTANT must not be limited to the liability assumed under the indemnification provisions of this Contract.

7. The policies must contain a severability of interest clause and waiver of subrogation against the City, its officers, officials, agents, and employees, for losses arising from Work performed by DESIGN CONSULTANT for the City.

8. DESIGN CONSULTANT, its successors and or assigns, are required to maintain Commercial General Liability insurance as specified in this Contract for a minimum period of 3 years following completion and acceptance of the Work. DESIGN CONSULTANT must submit a Certificate of Insurance evidencing Commercial General Liability insurance during this 3 year period containing all the Contract insurance requirements, including naming the City of Chandler, its agents, representatives, officers, directors, officials and employees as Additional Insured as required.

9. If a Certificate of Insurance is submitted as verification of coverage, the City will reasonably rely upon the Certificate of Insurance as evidence of coverage but this acceptance and reliance will not waive or alter in any way the insurance requirements or obligations of this Contract. If any of the required policies expire during the life of this Contract, the DESIGN CONSULTANT must forward renewal or replacement Certificates to the City within 10 days after the renewal date containing all the necessary insurance provisions.

**12. ARIZONA LAW, JURISDICTION AND VENUE, AND FEES AND COSTS:**

- 12.1 Arizona Law. This Contract shall be governed and interpreted according to the laws of the State of Arizona.
- 12.2 Jurisdiction and Venue. The parties agree that this Contract is made in and shall be performed in Maricopa County. Any lawsuits between the Parties arising out of this Contract shall be brought and concluded in the courts of Maricopa County in the State of Arizona, which shall have exclusive jurisdiction over such lawsuits.
- 12.3 Fees and Costs. Except as otherwise agreed by the parties, the prevailing party in any adjudicated dispute relating to this Contract is entitled to an award of reasonable attorney's fees, expert witness fees and costs including, as applicable, arbitrator fees; provided, however, that no award of attorney's fees shall exceed ten percent (10%) of the damages awarded the prevailing party unless the non-prevailing party has been determined to have acted in bad faith or in a frivolous manner during the adjudication.

**13. AMENDMENTS:**

Whenever a change in the Scope of Work contemplated in this Contract is determined to be necessary, the work will be performed in accordance with this Contract provided, however, that BEFORE such work is started, an Amendment shall be executed by CITY and DESIGN CONSULTANT. Additions to, modifications of, or deletions from the project provided herein may be made and the compensation to be paid to DESIGN CONSULTANT may be adjusted accordingly by mutual agreement of the contracting parties. It is agreed that no claim for extra work by DESIGN CONSULTANT will be allowed by CITY except as provided herein, nor shall DESIGN CONSULTANT do any work not covered by this Contract unless such work is authorized through an executed amendment.

**14. TERMINATION FOR CAUSE:**

This Contract may be terminated by CITY for cause should the DESIGN CONSULTANT fail to perform any provision of this Contract, including without limitation, for any of the following reasons:

- (a) DESIGN CONSULTANT abandons Work;
- (b) DESIGN CONSULTANT assigns or attempts to assign its rights or obligations under this Contract or any part thereof to any third-party (without the prior written consent of CITY);
- (c) DESIGN CONSULTANT is adjudged bankrupt or insolvent, makes a general assignments for the benefit of creditors, has a trustee or receiver appointed for its property, or files a petition to take advantage of any debtor's act;
- (d) DESIGN CONSULTANT fails or refuses to perform any obligation under the Contract, or fails to remedy such nonperformance within seven (7) days after its occurrence;
- (e) DESIGN CONSULTANT fails to comply with any applicable Laws and fails to remedy such nonperformance within seven (7) days after its occurrence;
- (f) DESIGN CONSULTANT fails to achieve the required dates for performance required pursuant to the Contract.

**15. TERMINATION FOR CONVENIENCE:**

CITY may at any time and for any or no reason, at its convenience, terminate this contract or any part of the services to be rendered pursuant thereto by written notice to DESIGN CONSULTANT specifying the termination date. Immediately after receiving such notice, DESIGN CONSULTANT shall discontinue

advancing the work under this Contract and shall deliver to the CITY all drawings, notes, calculations, sketches and other materials entirely or partially completed, together with all unused materials supplied by the CITY.

DESIGN CONSULTANT shall receive as compensation in full for services performed to date of such termination, a fee for the percentage of work actually completed. This fee shall be a percentage of DESIGN CONSULTANT(S) fee described in this Contract under paragraph 3 and shall be in the amount to be agreed mutually by DESIGN CONSULTANT and the CITY. The CITY shall make this final payment within sixty (60) days after DESIGN CONSULTANT has delivered the last of the partially completed items.

**16. OWNERSHIP OF INSTRUMENTS OF SERVICE UPON TERMINATION FOR CAUSE AND/OR FOR CONVENIENCE:**

Upon Termination for Cause or for Convenience, the CITY shall have ownership of the Instruments of Service.

**17. OWNERSHIP OF DOCUMENTS:**

All documents, including, but not limited to, preliminary designs, tracings, drawings, original mylars, estimates, field notes, investigations, design analysis, communications (e-mail, minutes, telephone, memos, etc.) and studies which are prepared in the performance of this Contract are to be, and shall remain the property of CITY. DESIGN CONSULTANT shall furnish CITY, upon its request, originals or reproducible copies of technical specifications and copies of all other documents listed above. DESIGN CONSULTANT shall endorse, by his professional seal, all plans and engineering data furnished by it.

**18. RE-USE OF DOCUMENTS:**

The parties agree the documents, drawings, specifications and designs, although the property of CITY, are prepared for this specific project and are not intended nor represented by DESIGN CONSULTANT to be suitable for re-use for any other project. Any reuse without written verification or adaptation by DESIGN CONSULTANT for the specific purpose intended will be at CITY's sole risk and without liability or legal exposure to DESIGN CONSULTANT.

**19. NO KICK-BACK CERTIFICATION:**

DESIGN CONSULTANT warrants that no person has been employed or retained to solicit or secure this Contract upon a Contract or understanding for a commission, percentage, brokerage or contingent fee; and that no member of the City Council or any employee of the CITY has any interest, financially or otherwise, in the DESIGN CONSULTANT firm.

For breach or violation of this warranty, CITY shall have the right to annul this Contract without liability, or at its discretion to deduct from the Contract Price or consideration, the full amount of such commission, percentage, brokerage, or contingent fee.

**20. CONFLICT OF INTEREST:**

DESIGN CONSULTANT stipulates that its officers and employees do not now have a conflict of interest and it further agrees for itself, its officers and its employees that it will not contract for or accept employment for the performance of any work or services with any individual business, corporation or government unit that would create a conflict of interest in the performance of its obligations pursuant to this Contract.

Pursuant to A.R.S. Section 38-511, CITY may cancel this Contract within three (3) years after its execution, without penalty or further obligation by CITY if any person significantly involved in initiating, negotiating, securing, drafting or creating this Contract on behalf of CITY is, at any time while this Contract is in effect, an employee of any other party to this Contract in any capacity, or a consultant to any other party of this Contract with respect to the subject matter of this Contract.

**21. CONTROLLING LAW:**

The laws of the State of Arizona shall govern this Contract.

**22. COMPLIANCE WITH ARIZONA PROCUREMENT LAW:**

Compliance with A.R.S. § 41-4401. Pursuant to the provisions of A.R.S. § 41-4401, the Design Consultant hereby warrants to the City that the Design Consultant and each of its subconsultants ("Subconsultants") will comply with all Federal Immigration laws and regulations that relate to the immigration status of their employees and the requirement to use E-Verify set forth in A.R.S. §23-214(A) (hereinafter "Contractor Immigration Warranty").

A breach of the Contractor Immigration Warranty (Exhibit C) shall constitute a material breach of this Contract that is subject to penalties up to and including termination of the contract.

The City retains the legal right to inspect the papers of any Design Consultant or Subconsultant employee who works on this Contract to ensure that the Design Consultant or Subconsultant is complying with the Contractor Immigration Warranty. The Design Consultant agrees to assist the City in the conduct of any such inspections.

The City may, at its sole discretion, conduct random verifications of the employment records of the Design Consultant and any Subconsultants to ensure compliance with Contractors Immigration Warranty. The Design Consultant agrees to assist the City in performing any such random verifications.

The provisions of this Article must be included in any contract the Design Consultant enters into with any and all of its subconsultants who provide services under this Contract or any subcontract. "Services" are defined as furnishing labor, time or effort in the State of Arizona by a Design Consultant or subconsultant. Services include construction or maintenance of any structure, building or transportation facility or improvement to real property.

In accordance with A.R.S. §35-393.06, the Contractor hereby certifies that the offeror does not have scrutinized business operations in Iran.

In accordance with A.R.S. §35-391.06, the Contractor hereby certifies that the offeror does not have scrutinized business operations in Sudan."

**23. NO ASSIGNMENT:**

DESIGN CONSULTANT shall not assign, transfer, convey or subcontract this Contract or the services to be rendered pursuant thereto without the prior written consent of CITY.

IN WITNESS WHEREOF, the parties have hereunto subscribed their names this \_\_\_\_\_ day of \_\_\_\_\_, 2014.

CITY OF CHANDLER

DESIGN CONSULTANT

\_\_\_\_\_  
MAYOR Date

By: [Signature]  
Signature

ADDRESS FOR NOTICE  
City of Chandler  
P.O. Box 4008, Mail Stop 407  
Chandler, AZ 85244-4008  
Phone: 480-782-3307  
FAX: 480-782-3355

ADDRESS FOR NOTICE  
Carroll Engineers, Inc.  
4000 E. Washington Street, Suite 500  
Phoenix, Arizona 85034  
Phone: 602-263-9500  
FAX: 602-265-4222

ATTEST:

ATTEST: If Corporation

\_\_\_\_\_  
City Clerk

\_\_\_\_\_  
Secretary

APPROVED AS TO FORM:

\_\_\_\_\_  
City Attorney By: [Signature]

SEAL

**EXHIBIT A-1  
DETAILED DESCRIPTION OF CITY'S CONCEPT**

**General Description**

Design Services are for the new treatment train and associated support facilities that will be incorporated as part of the existing Ocotillo Water Reclamation Facility (OWRF) Expansion Design and Permitting Assistance Services ("Project"). The Project will be procured and constructed using the Construction Manager at Risk (CMAR) alternative project delivery method.

The CITY desires to plan, design, construct, and commission a new treatment train and supporting appurtenances to expand the OWRF in order to accommodate residential flows, industrial flows, and reclaimed water demand in the West Chandler area. This Project involves multiple steps associated with the overall pre-construction [design] phase, including a programming phase to define the basis of design [completed under Contract WW1301-102], followed by preliminary and detailed design phase services. Construction phase-related services, including construction administration, will be included in a separate (future) contract.

Note that this Project will be coordinated closely with concurrent design modifications being completed separately under the "OWRF Process Improvements" project, which is intended to be constructed by the same CMAR Contractor.

This Scope of Work is limited to the Preliminary and Detailed Design Phase ("Design Phase") of the Project, focusing on advancing the design definition as summarized in the Basis of Design Report (BDR) to allow development of a guaranteed maximum price (GMP) and construction by the selected CMAR. DESIGN CONSULTANT services during this Design Phase will also include the necessary project and quality management, permitting assistance, public involvement, and CMAR coordination services to support design development.

**Project Assumptions**

1. The OWRF Expansion will increase the rated capacity from 10 mgd maximum month average day flow (MMADF) to 15.5 mgd MMADF. The new OWRF treatment train will be rated for an initial 5 mgd annual average day flow (AADF) and 5.5 mgd MMADF design capacity, but will be master-planned for up to 30 mgd AADF capacity. When combined with the existing 10 mgd treatment train, the entire OWRF will be master-planned for approximately 40 mgd AADF ultimate (buildout) design capacity.
2. Project will be procured using the CMAR alternative project delivery method.
3. Pre-construction [design] services are targeted to be substantially complete by Fall of 2015, but could be impacted [extended] based on the CMAR procurement and associated project schedule and cost model/GMP development, as well as potential phasing of work.
4. Construction will be targeted for substantial completion by Fall of 2017.
5. *Permitting Fees.* DESIGN CONSULTANT will include an Allowance to pay for applicable regulatory permit application review fees to the Maricopa County Environmental Services Department (MCESD) and Arizona Department of Environmental Quality (ADEQ) only (in accordance with Task 600 herein). CITY shall pay directly for all review fees associated with CITY Departments (i.e. building, civil, fire, etc.). CMAR shall pay for all associated construction-related permits, to be included as part of their Guaranteed Maximum Price (GMP).

6. *Contract Amendments.* Subsequent Construction Phase services, including office and field services, will be included in a separate contract.
7. *Project Team Personnel.* As directed by the CITY, DESIGN CONSULTANT will maintain specific individuals for key roles and responsibilities throughout the Project duration, as identified in **EXHIBIT A-2 PROJECT TEAM PERSONNEL**.
8. *City Responsibilities.* CITY shall perform / complete the responsibilities as identified in **EXHIBIT A-3 CITY RESPONSIBILITIES**. These items shall be provided in a timely manner as required to meet and maintain the Project schedule.
9. *Project Deliverables.* DESIGN CONSULTANT will produce and submit draft and final reports and interim milestone review packages in hardcopy format for review by the CITY and CMAR throughout the Design Phase, as identified herein. Electronic copies of the various deliverables will also be provided in PDF and posted on a collaborative project website (with the exception of site security-related documents, monthly invoices and other documents as determined by the CITY). CITY shall agree to review draft project deliverables and provide comments to DESIGN CONSULTANT in a timely fashion, typically within three (3) weeks of submittal.
10. *Standard of Care:* DESIGN CONSULTANT will be responsible to the level of competency and standard of care presently maintained by other practicing Professional Engineers performing the same or similar type work at the time Notice to Proceed is issued. DESIGN CONSULTANT and CITY mutually agree that standard of care, as applied to design professional, shall be defined as the ordinary and reasonable care required and established by expert testimony of what a reasonable and prudent professional would have done under the same or similar circumstances.

### **Scope of Services**

DESIGN CONSULTANT will complete the following scope for the Design Phase, including preliminary and detailed design (i.e. preparation of construction contract documents), project and quality management, permitting, public involvement, and CMAR coordination. Subsequent construction and post-construction related services for the Project will be provided under a separate contract.

The new 5 mgd AADF treatment train and supporting facilities will be located immediately north and west of the existing OWRF. These facilities are generally located southeast of the intersection of Old Price Road and Queen Creek Road. The design and permitting of this expanded OWRF will include the following major components and elements, as identified and defined in the preceding Programming Phase of the Project:

- Modifications to the existing Airport Lift Station and appurtenances to serve as a joint (common) influent pump station to both the existing and new OWRF treatment trains has been included in a separate "OWRF Process Improvements" contract [by Wilson/Carollo]. However, coordination with that work, particularly with electrical, headworks facilities and plant drain system, will be required as part of this Project.
- New joint (common) headworks facility, including coarse screening, grit removal and fine screening, to serve both the existing and new OWRF treatment trains.
- Biological nutrient removal (BNR) through membrane bioreactor (MBR) technology, including aeration basins, membrane tanks, clean-in-place (CIP) facilities, and Blower/Pump Building.
- Disinfection through bulk liquid sodium hypochlorite (chemical storage and feed facilities), but include space planning provisions for potential future on-site generation (OSG) facilities.

- New joint (common) reclaimed water storage reservoir and effluent pumping facilities, as well as plant water (non-potable) system and appurtenances.
- New joint (common) Solids Handling Building, waste activated sludge (WAS) storage tanks, dewatering units, polymer storage and feed system(s), dewatered sludge cake conveyance and storage, and other associated appurtenances, to serve both the existing and new OWRF treatment trains.
- Basin/tank covers, foul air ductwork and associated odor control systems, including any applicable chemical storage and feed facilities. Odor control will be provided for headworks, aeration basins, membrane tanks, WAS tanks, Solids Handling Building, and dewatered cake conveyance and storage facilities.
- New joint (common) Administration and Maintenance facilities to serve both the entire OWRF. However, depending on the budget and cost model development as the Project progresses, some type of repurposing and reuse of the existing OWRF Administration Building may be required.
- Miscellaneous site/civil elements, including but not necessarily limited to access roadway and entrance, plant roadways, plant paving and grading, perimeter berms and landscaping, perimeter fencing and/or walls, yard piping, site utilities, flow splitter structures, plant drainage system, on-site stormwater retention basins, and site security features, as applicable for a fully functioning treatment facility.
- Miscellaneous electrical, instrumentation and controls (EI&C) elements, including but not necessarily limited to service entrance and major electrical switchgear, automatic transfer switch (ATS), transformers, motor control centers (MCCs), motors and variable frequency drives (VFDs), electrical ductbanks and manholes, standby generators, programmable logic controllers (PLCs), panels, fiber optic cabling, plant-wide SCADA system and appurtenances, as applicable for a fully functioning treatment facility.

## **TASK 100 – PROGRAMMING PHASE DEVELOPMENT**

*Completed under previous City Contract WW1301-102.*

## **TASK 200 – PRELIMINARY DESIGN DEVELOPMENT**

The Basis of Design Report (BDR) previously developed under Task 100 will be further refined in a preliminary design to resolve outstanding design issues; further develop process and equipment sizing; review applicable codes, standards, design criteria and formats; and update the capital and annual O&M cost estimates. The preliminary design will be the basis for the preparation of detailed design plans and specifications (Task 300).

The following tasks describe the specific efforts associated with the Preliminary Design development.

### **201 – Geotechnical Investigation**

DESIGN CONSULTANT will perform a geotechnical investigation of the OWRF site, which will include the drilling and sampling of up to fifteen (15) test borings to determine subsoil conditions and provide samples for laboratory testing. DESIGN CONSULTANT will submit draft Geotechnical Investigation Report to CITY and CMAR for review. DESIGN CONSULTANT will further coordinate and consult with geotechnical subconsultant during detailed design.

CMAR shall review the Geotechnical Investigation Report and supporting data, and coordinate any additional investigations that they may determine to be necessary. Costs to perform any additional geotechnical investigation(s) shall be borne directly by CMAR and not the DESIGN CONSULTANT.

**Deliverables: Draft and Final Geotechnical Investigation Report (10 copies each)**

#### 202 – Topographical Site Survey

DESIGN CONSULTANT will perform a site topographical survey to document the current conditions and surface features of the area proposed for the new OWRF treatment train and supporting facilities, including land north and west of the existing OWRF. Site survey will be based on City of Chandler datum and will include existing spot grades for use in developing new contours; location and establishment of perimeter property lines based on existing legal descriptions, available survey reviews, and existing and future right-of-ways; and identification of above-ground structures, other identified facilities, and existing trees. Site survey will also include identification of staked geotechnical borings and horizontal grid development for design.

**Deliverables: Draft Site Topographical Maps (10 copies each)**

#### 203 – Drainage Report

DESIGN CONSULTANT will prepare a Drainage Report and preliminary Grading and Drainage Plan to document the site drainage conditions for the expanded OWRF site. The Drainage Report will be submitted to the CITY along with the Agency Review submittal.

**Deliverables: Draft and Final Drainage Report (15 copies each)**

#### 204 – Preliminary Design Report

DESIGN CONSULTANT will advance the design concepts developed and summarized in the BDR completed under the previous Programming Phase of the Project. Efforts will include evaluation and selection of the applicable processes and technology types not previously selected, and other key design decisions not previously made as part of the Programming Phase, as well as the following components:

- Update Design Criteria – DESIGN CONSULTANT will update and expand applicable design criteria developed in the BDR.
- Update Process Flow Diagrams – DESIGN CONSULTANT will update process flow diagrams developed in the BDR.
- Update Site Layouts – DESIGN CONSULTANT will update proposed site layouts (with required setbacks) developed in the BDR.
- Preliminary Equipment and Instrumentation List – DESIGN CONSULTANT will develop a preliminary equipment and instrumentation list for the Project. Information will be developed in a format consistent with the CITY's computerized maintenance management system (CMMS), and will subsequently be updated throughout the Design Phase as appropriate.

Overall purpose of the preliminary design is to “lock down” key design decisions to transition into detailed design accordingly. DESIGN CONSULTANT will update the written summaries, diagrams, layouts, design criteria tables, and supporting information developed previously in the BDR to incorporate any corresponding revisions and into a single-volume Preliminary Design Report (PDR). The draft PDR will be submitted to CITY and CMAR for review. Upon receipt of comments, DESIGN CONSULTANT will make appropriate revisions and submit a final PDR to the CITY for distribution.

**Deliverables: Draft and Final Preliminary Design Report (15 copies each)**

**TASK 300 – DETAILED DESIGN DEVELOPMENT**

DESIGN CONSULTANT will prepare detailed construction contract documents for the Project that will be used by the CMAR to prepare the construction cost model and corresponding GMP, project schedule, equipment and subcontractor procurement; as well as by the regulatory agencies to issues applicable permits for the construction and operation of the Project.

The Detailed Design will be completed in a 3D and BIM environment to enhance visualization during design and construction as follows:

- The various structures and buildings will be developed in a 3D drawing format, with applicable extractions from the associated 3D models to create 2D drawings (plans and sections) for adding applicable details and annotations as part of the Interim Review Submittals identified herein.
- The 3D models will incorporate major design elements such as aboveground and below-grade structures; process, mechanical and electrical equipment; process piping, mechanical ductwork; electrical cable trays, major conduits and ductbanks; and other critical elements.
- The 3D models will be updated throughout design development and reviewed with CITY staff during regularly scheduled progress meetings and supplemental coordination meetings with CITY O&M staff. Models will be in viewable PDF format.
- Clash detection software will be used in conjunction with the 3D models to identify and mitigate during design the potential multi-discipline conflicts such as structural elements, electrical cable trays, conduits and duct banks; HVAC ductwork; and mechanical piping.
- The 3D models will be used to develop architectural renderings of the various structures and buildings, starting after the first Interim (30%) Review Submittals and updated throughout the remainder of the Design Phase. Renderings will be used to communicate the proposed site and facility elements to public, CITY management and/or City Council, in accordance with other tasks identified herein. The number and type of renderings to be developed at the various Interim Review Submittals will be coordinated with the CITY as design development progresses.
- Depending on the selected CMAR's capabilities for BIM platform, the 3D models can also be utilized in a 4D environment, with specific design elements linked to discrete work activities in the CMAR construction schedule to help identify and evaluate construction sequencing.
- It is also anticipated that the 3D/BIM models will include general "as-built" updates during construction. Furthermore, it is anticipated that the "as-built" 3D models will be linked to electronic operations and maintenance manuals (EOMs) to be developed during construction phase, as well the CITY's computerized maintenance management system (CMMS) and/or asset management system (currently Lucity software). NOTE: The "as-built" efforts, EOM development and software linkage are not included within this scope of services, but is anticipated to be included as part of a subsequent Construction Phase Services contract amendment, if desired by the CITY.

The Detailed Design will consist of a multi-discipline design effort generally described by the following elements:

- General / Civil / Site Work – The general / civil design will include hydraulic analysis, development of plant layout and survey control, site drainage, paving and grading, and location of yard piping. Where necessary to define vertical alignment, yard piping profiles will be included

for gravity pipelines and pressure pipes greater than 12 inches in diameter. Civil / site work design will include plant site interior, plant site boundary, and off-site screening buffer areas.

- **Landscaping** – The landscaping design will include inventory of existing trees and/or native plants; location and types of plantings; and layout and design of irrigation systems; in accordance with CITY codes, standards and tree/plant palette requirements. Anticipated landscaping (including screening and/or berming) limits include the plant site boundary perimeter along Old Price, Queen Creek and South Price Roads only. Landscaping within the plant site “interior” is not anticipated.
- **Architectural** – The architectural design will include the development of basic building layouts, conformance to the existing overall site theme and site security requirements, and selection of building materials. A building code occupancy plan will also be developed. Building designs will include Administration Building, Maintenance Building, Blower/Pumping Building, Solids Handling Building, and other miscellaneous support buildings. DESIGN CONSULTANT will conduct supplemental programming workshops with CITY representatives to identify building layout needs and requirements prior to development of layouts.
- **Structural** – The structural design will include the development of structural design criteria, selection of structural construction materials, design of foundations and foundation treatment, and design of the structural members for the various required facilities. Structural design will also include dynamic analysis of the Blower/Pumping Building and Solids Handling Building structure under loadings imposed by the proposed rotating equipment to be installed.
- **Process / Mechanical** – The process design will include development of the detailed control and operation schemes for the various processes and process units. The mechanical design will include determination of equipment performance and characteristics required, selection of mechanical equipment, location and arrangement of the equipment (with tag numbers) and associated piping, design of the equipment and the associated piping, and design of the supports for equipment and piping. Components of the required odor control systems, including foul air ventilation and treatment, will be included in the mechanical design. DESIGN CONSULTANT will coordinate with CMAR to develop schedules and typical details for supports of exposed process piping, foul air ductwork, and equipment. Supports will be shown on the design drawings as agreed to by DESIGN CONSULTANT, CMAR, and CITY. In general, tag numbers for all valves 4 inches or greater will be included on mechanical drawings.
- **HVAC / Plumbing / Fire Protection** – The HVAC design will include the development of heating, ventilation, and air conditioning systems required for the various buildings and areas, including equipment, ductwork and ancillary devices. The plumbing design will include the development of potable and non-potable water and drainage systems required for the various buildings and areas. The fire protection design will be a performance specification only, and will include fire suppression systems required for the various buildings and areas, including wet sprinklers and alarm systems. Motor control center (MCC) areas and electrical control rooms will be provided with non-water based fire suppression systems. The plumbing and fire protection design will be coordinated with utility requirements. DESIGN CONSULTANT will coordinate with CMAR to develop schedules and typicals details for supports of exposed utility piping, HVAC ductwork, and equipment. Supports will be shown on the design drawings as agreed to by DESIGN CONSULTANT, CMAR, and CITY.
- **Electrical** – The electrical design will include an assessment of new plant unit power requirements, coordination with the OWRF’s existing power distribution system, design of power distribution and lighting systems for buildings and areas, development of motor control schemes, design of MCCs and power conduits, and identification of area classifications, based on CITY’s

input and approval of recommended strategies and manufacturers. The electrical design will be coordinated with CITY's and utility [SRP] requirements. DESIGN CONSULTANT will coordinate with CMAR to develop schedules and typical details for supports of exposed conduit and equipment. Supports will be shown on the design drawings as agreed to by DESIGN CONSULTANT, CMAR, and CITY. Specific items relative to standard electrical drawings and specifications will be as follows:

- Overall site electrical plan identifying major electrical components (service entrance, primary switchgear, standby generators, ductbanks and electrical manholes); load calculations; area power, lighting, grounding and receptacle plans; area classification (class and division); general notes, key notes and detail callouts. DESIGN CONSULTANT will also provide ductbank section cuts showing conduit arrangement. Plan drawings will not include point-to-point conduit routing.
- MCC design will include MCC front-face elevations (not to scale) and single-line diagrams identifying process equipment, panels and other electrical power requirements.
- Panel layout design will include front exterior (face) elevation layout with general dimensions only. Description of general panel components, including wiring and color coding standards, will be included in the technical specifications. Layouts for panels provided by manufacturers to be provided as part of an engineered package with equipment will not be included in DESIGN CONSULTANT's design drawings. Panel layout drawings will not include interior layouts; internal and external wiring/connection diagrams; bill of materials; detailed labeling; or detailed dimensional drawings. Technical specifications will include provisions requiring equipment manufacturers and panel builders to provide this additional level of detail as part of the submittal process, for DESIGN CONSULTANT and CITY's review and approval.
- Electrical design will include "typical" electrical schematics supplemented with tables for multiple products. Repetitive and/or redundant equipment items will not be identified with individual schematics. Wire numbers and PLC input/output (I/O) terminal assignments will also not be included.
- Electrical design will include lighting fixture and panel schedules; plant fire alarm system consisting of a riser diagram and technical specification; security system power and controls including card readers, door contacts, closed-circuit television (CCTV), and entrance gate control system(s); and lightning protection systems for buildings and basins.
- Electrical design will not include detailed cable/conduit schedules; cathodic protection, wide area network (WAN), loop diagrams (analog); wiring diagrams (discrete signals); or point-to-point control wiring diagrams. Specific requirements for supplier(s) to submit detailed analog loop diagrams and discrete signal wiring diagrams (in hardcopy and electronic format) as part of the shop drawing submittal process will be included in the technical specifications
- Instrumentation and Controls – The instrumentation and controls (I&C) design will include specification of instrumentation hardware and software required to accomplish the distributed control and operation scheme(s), design of alarm and display systems, functional layout of area control centers, and selection of control and monitoring instruments. Instrumentation design will include only on-site facilities up to the interface point with the CITY's SCADA telemetry system. Specific items relative to standard I&C drawings and specifications will be as follows
  - Provide block diagram(s) and network diagram(s) for the plant control system.
  - Provide process and instrumentation diagram (P&ID) drawings based on a vertical hierarchy of layers (or bands) ordered from top to bottom as follows:
    - SCADA (telemetry interface only)
    - PLC
    - LCP

- FIELD (process equipment and field instrumentation)

Repetitive and/or redundant process controls will be identified as “typical of (number)” as appropriate. Manufacturer’s packaged equipment will be shown on P&IDs as a “black box” with only the interface monitoring and control signals identified. Tag numbers for all equipment, motorized (i.e., control) valves, and instrumentation will be included on P&IDs. P&IDs will not include PLC I/O addresses, pipe fittings or pipe sizes. Control descriptions will be included in specifications. P&IDs will not be provided for the following systems:

- Closed circuit television (CCTV) and/or security systems (including controlled gate access)
- Fire detection and alarm systems
- Telephone and plant intercom/paging systems
- HVAC systems, including supply and exhaust fans, louvers, ACUs, and AHUs (unless specifically tied to odor control or other process)
- Process laboratory facilities
- Bridge cranes and/or monorails
- Maintenance service equipment
- Automatic overhead coiling doors (except for truck loading bay area)
- Storm water drainage
- Landscape irrigation.

In addition to assignment of tag numbers for new equipment and instrumentation associated with the new OWRF treatment train and supporting facilities, the existing OWRF equipment and instrumentation will be “re-tagged” for consistency, along with updated overall control system block diagram.

*NOTE: Security-related components (i.e. associated EI&C plans and specifications) will be included in a separate package to protect and maintain confidentiality, unless specifically directed otherwise by the CITY.*

### 301 – Interim (30%) Design Review Submittal Package

The initial interim (30 percent) design review submittal is intended to expand the preliminary design concepts and strategies and present in 3D and 2D format to initiate the necessary administrative and regulatory permitting process. In particular, this submittal will be used to perform the CITY’s Pre-Tech Review process for initial review and coordination with the internal CITY Departments and stakeholders.

The 30 percent design review submittal will generally consist of the following:

- **General Drawings** – The General drawings will include title sheet with project location maps; preliminary drawing index; legends, symbols and abbreviations; mechanical and pipe identifiers; tag numbering system; preliminary code classification information; preliminary process flow schematics; preliminary design criteria; and preliminary plant hydraulic profile(s).
- **Civil / Site Work Drawings** – The Civil / Site Work drawings will include general notes; overall site plan (key plan); plant layout and survey control data; identification of existing features and topography, property lines, easements and rights-of-way, and proposed fences and/or walls; preliminary paving and grading plans (with general dimensions and stationing); preliminary yard piping plans (with general location and preliminary sizing); and preliminary stormwater and plant drainage plans. No yard piping profiles, berming sections, or details will be included in this review submittal.

- **Landscaping Drawings** – The Landscaping drawings will include general notes; landscape and irrigation key plan; and native plant inventory. **No** detailed landscaping plans, irrigation plans, planting schedules, sections or details will be included in this review submittal.
- **Architectural Drawings** – Architectural layouts will be prepared in sufficient detail to establish building and room dimensions, to coordinate major dimensions, and to establish clearances and access. The Architectural drawings will include a general code sheet and project summary; preliminary room finish, door and hardware schedules (to identify type of building and major systems); preliminary building floor plans and layouts; and preliminary building elevations. **No** individual building wall sections or details will be included in this review submittal. Preliminary elevations and sections of perimeter wall and/or fence will be included to show preliminary height and materials.
- **Structural Drawings** – Structural loads and framing will be completed, and foundation concepts will be identified. The Structural drawings will include development of preliminary building and major structure layouts for the required facilities, including grid references, dimensions, and clearances. Building floor and roof elevations will be established in collaboration with all disciplines, allowing for beam depths and major process piping, conduit, and ductwork corridors. The Structural drawings will include general notes; structural design criteria; preliminary building foundation/floor and roof plans; and preliminary structure foundation, intermediate and top plans. Some major building and structure sections, but **no** individual wall sections or details, will be included in this review submittal.
- **Process / Mechanical Drawings** – Major process equipment and piping layouts will be developed to the point where plan dimensions and equipment weights can be established. Odor control scrubber and chemical systems will be included under the mechanical design. The Process / Mechanical drawings will include general notes; preliminary piping schedule (identifying system, size, fluid carried, linings or coatings, and pipe material); preliminary valve schedule (identifying application, valve and actuator type, material, and working pressure); preliminary area top and bottom plans; and some preliminary building and structure sections and details.
- **HVAC / Plumbing Drawings** – The HVAC / Plumbing drawings will include general notes; preliminary building HVAC plans, and preliminary odor control system plans (with interior foul air ductwork only). **No** plumbing plans, sections, or details will be included in this review submittal.
- **Electrical Drawings** – Electrical equipment space requirements will be defined to fix building requirements, including layout of corridors for major conduits/ductbanks in buildings and on the site, location of electrical manholes and vaults, and locations where conduit/ductbank routing influences floor slab thickness. Area classifications will also be defined and designated. The Electrical drawings will include general notes, legend and abbreviations; preliminary load and short circuit calculation results; switchgear/power single line diagrams; electrical site plans [key plans]; existing and new MCC elevations; preliminary single line diagrams; and preliminary area power and control plans. **No** building and structure lighting, receptacle, lightning protection and grounding plans; telephone and fire alarm riser diagrams; equipment control schematics, wiring or installation details; or schedules will be included in this review submittal.
- **Instrumentation and Controls Drawings** – The I&C drawings will include general notes, legend and abbreviations; plant control system architecture and block diagrams; and preliminary process and instrumentation diagrams (P&IDs). DESIGN CONSULTANT will develop preliminary P&IDs for the various process systems required. **No** control system data

communication routing plans; control equipment location plans; or instrumentation installation typical and/or specific details will be included in this review submittal.

- **Technical Specifications** – DESIGN CONSULTANT will develop a list [outline] of technical specifications expected for the Project. List of specifications will be arranged in tabular format by CSI Division.
- **Typical Details** – DESIGN CONSULTANT will develop a list [outline] of typical details expected for the Project. List of typicals will be arranged in tabular format by discipline.
- **Equipment and Instrumentation List** – The preliminary Equipment and Instrumentation List developed as part of the PDR will be updated accordingly.

***Deliverables: 15 Half-Size Sets of Review Drawings, Technical Specifications and Typical Details (Lists only) for CITY and CMAR***

### 302 – Interim (60%) Design Review Submittal Package

The 60 percent review submittal will include applicable updates from the 30 percent review submittal, including the incorporation of applicable 30 percent submittal review comments provided by CITY and CMAR. DESIGN CONSULTANT will provide a copy of a 30 percent design submittal comments log with the 60 percent review submittal.

The 60 percent design review submittal will generally consist of the following:

- **General Drawings** – The General drawings will include applicable updates from 30 percent drawing set, plus preliminary construction staging areas, temporary facilities, and site access designations.
- **Civil / Site Work Drawings** – The Civil / Site Work drawings will include applicable updates from 30 percent drawing set, plus yard piping and utility profiles showing inverts of facilities and utility crossings; location and size of stormwater inlets and retention areas; grading and paving and yard piping plans with dimensions, contours, horizontal and vertical control, survey control, and construction notes. Dimensional requirements for yard structures will be determined and shown on plans.
- **Landscaping Drawings** – The Landscaping drawings will include applicable updates from 30 percent drawing set, plus preliminary landscaping and irrigation plans, details and schedules.
- **Architectural Drawings** – The Architectural drawings will include applicable updates from 30 percent drawing set, plus building floor plans (showing general and key notes, grid references, dimensions, and locations of stairs, doors, windows and louvers); building sections (showing dimensions); building roof plans (showing pitch, drain locations, section cut and detail call-outs with cross-references); roof sections and details; wall sections (showing grid references, dimensions, proposed materials, and interior and exterior finishes); stair plans and sections; and fence and/or wall sections, elevations and details (including foundation and materials).
- **Structural Drawings** – The Structural drawings will include applicable updates from 30 percent drawing set, plus building and structure foundation, floor and roof plans (with general and key notes, dimensions, section cut and detail call-outs with cross-references), construction joints and wall/slab openings; and section cuts (showing dimensions, elevations and reinforcement).
- **Process / Mechanical Drawings** – The Process / Mechanical drawings will include applicable updates from 30 percent drawing set, plus building and structure top and bottom plans (with

general and key notes, equipment and piping layouts, dimensions, and section cut and detail call-outs with cross-references); and updated piping and valve schedules.

- **HVAC / Plumbing Drawings** – The HVAC / Plumbing drawings will include applicable updates from 30 percent drawing set, plus plans (with general and key notes, equipment and piping/duct layouts, dimensions, and section cut and detail call-outs with cross-references); and updated details and schedules.
- **Electrical Drawings** – The Electrical drawings will include applicable updates from 30 percent drawing set, plus lighting plans and fixture schedules; preliminary lightning protection system plans; and preliminary control schematics for equipment and instrumentation.
- **Instrumentation and Controls Drawings** – The I&C drawings will include applicable updates from 30 percent drawing set, plus preliminary control equipment location plans; and preliminary instrumentation mounting details.
- **Technical Specifications** – The 60 percent specification set will include markups to the standard technical specifications. DESIGN CONSULTANT will also submit supplemental summary sheets for CITY review relative to preliminary selection of major products, acceptable manufacturers, and methods. Control descriptions will also be substantially complete and provided to the CITY as part of the 60 percent design specifications review submittal.
- **Typical Details** – DESIGN CONSULTANT will compile and develop the typical details expected for the Project. Typical details will be presented in book format (8-1/2-inch x 11-inch) for ease of review.
- **Equipment and Instrumentation List** – The Equipment and Instrumentation List will be updated accordingly.

***Deliverables: 15 Half-Size Sets of Review Drawings, Technical Specifications and Typical Details (Books) for CITY and CMAR***

### 303 – Interim (95%) Design Review Submittal Package [Agency Review Set]

The 95 percent [Agency Review] submittal will include applicable updates from the 60 percent review submittal, including the incorporation of applicable 60 percent submittal review comments provided by CITY and CMAR, plus the incorporation of typical details from book form into the drawing set.

DESIGN CONSULTANT will provide six (6) sets of the full-size plans and specifications for submission to the City of Chandler T&D and Fire Departments for code compliance and agency review. Agency review sets will be sealed and stamped with “*FOR AGENCY REVIEW ONLY - NOT FOR CONSTRUCTION*” or similar note. All applicable department review fees will be paid for directly by the CITY.

DESIGN CONSULTANT will provide three (3) sets of the full-size plans and specifications for submission to the Maricopa County Environmental Services Department (MCESD) for code compliance and agency review. Agency review sets will be sealed and stamped with “*FOR AGENCY REVIEW ONLY - NOT FOR CONSTRUCTION*” or similar note. All applicable agency review fees will be paid by the DESIGN CONSULTANT.

DESIGN CONSULTANT will compile copies of applicable design calculations, including drainage, piping hydraulics, structural, HVAC, and fire protection calculations, plus copies of equipment data sheets, process modeling output, and other supporting information, into design calculations

notebooks. DESIGN CONSULTANT will produce three (3) sets of the design calculations notebook and submit to CITY for review.

**Deliverables: 15 Half-Size Sets of Review Drawings and Technical Specifications for CITY and CMAR; 9 Full-Size Sets of Review Drawings and Technical Specifications for CITY T&D and Fire Departments and MCESD; 3 Sets of Design Calculations**

#### 304 – Final (100%) Contract Documents

The 100 percent (final) Contract Documents will include applicable updates from the Agency Review submittal, including the incorporation of applicable comments provided by CITY and CMAR at the 95 percent submittal review workshop, plus applicable CITY Department and agency review comments. DESIGN CONSULTANT will finalize, seal, and submit all design drawings and technical specifications in the appropriate format within thirty (30) days following receipt of all review comments provided by CITY and other review agencies. DESIGN CONSULTANT will provide a copy of a 90 percent design submittal comments log to CITY with the final submittal.

Submittal will include twenty (20) half-size sets and five (5) full-size sets of drawings, twenty (20) sets of technical specifications; plus one (1) PDF and one (1) CADD format on CD/DVD.

**Deliverables: Final Plans and Specifications**

### TASK 400 – PROJECT MANAGEMENT

DESIGN CONSULTANT will perform various project management and monitoring activities throughout the Design Phase, as delineated in the following tasks and sub-tasks.

#### 401 – Update Project Plan

Update the Project Plan associated with the proposed project management activities for the duration of the Project. Specific components of the Project Plan to be updated include project background and scope; identification of additional project team and associated contact information, project schedule of meetings, workshops, submittal milestones and review dates; project budget and task breakdown; communication and interface control; and document control and management.

**Deliverables: Project Plan Update (Electronic format only)**

#### 402 – Project Control and Reporting

Develop monthly progress reports and invoices throughout the Design Phase that identify the following:

- Work completed since the previous report.
- Work anticipated in the upcoming month.
- Project status, including scheduled and actual percent completes for the major tasks.
- Budget status, including contracted amount, total spent to date, amount remaining, percent spent and actual percent complete.
- Schedule status, including variances in the project schedule by milestone and/or deliverable, and total project.
- Dates of anticipated milestones and/or deliverables in the upcoming month.

- List of coordination and/or information required, including responsible parties.
- List of problems encountered (if any) and proposed resolution, including technical, budgetary and schedule problems.
- List of potential scope changes, including a brief description and reason for change, along with potential impact on budget and schedule.
- List of issues needing resolution, including party(s) involved and date required so as not to impact project schedule.

In addition to monthly status updates, provide abbreviated weekly email updates to CITY lead(s) reporting on current and upcoming weekly activities and key issues.

Develop and maintain Project logs documenting key decisions and action items throughout the Project duration, accessible on the project collaborative website.

**Deliverables: Monthly Progress Reports and Invoices; Weekly Status Email Updates, Decision Log; Action Log (Electronic format only)**

#### 403 – Project Schedule

Coordinate with CMAR to provide applicable information and updates to their overall Project schedule during the Design Phase.

#### 404 – Project Meetings

Conduct bi-weekly project meetings with CITY and CMAR representatives throughout the Design Phase to keep the CITY and CMAR informed of the project progress and obtain input and direction as required. The anticipated number of planned bi-weekly meetings during this phase will be thirty (30). Prepare and distribute agendas and minutes for each meeting. Agendas will be submitted to the CITY at least two (2) days prior to the meeting. Minutes will be submitted to the CITY no more than three (3) days following each meeting. Agendas and minutes will also be posted to the collaborative project website for additional access by interested parties.

**Deliverables: Meeting Agenda and Summary Notes (Electronic format only)**

#### 405 – Submittal Review Workshops

Conduct the following submittal review workshops following the various interim milestone review submittals. CITY and CMAR shall participate in the workshops and provide review comments at that time. Following each review workshop, DESIGN CONSULTANT will compile all comments into a “Comments/Response Log” for review by the CITY and CMAR.

- 30 Percent Submittal Review Workshop – DESIGN CONSULTANT will conduct a one-day (1 day) submittal review workshop following the 30 percent design submittal to CITY and CMAR.
- 60 Percent Submittal Review Workshop – DESIGN CONSULTANT will conduct a one-day (1 day) submittal review workshop following the 60 percent design submittal to CITY and CMAR.
- 95 Percent Submittal Review Workshop – DESIGN CONSULTANT will conduct a one-day (1 day) submittal review workshop following the 95 percent design [Agency Review] submittal to CITY and CMAR.

**Deliverables: Comments/Response Logs (Electronic format only)**

#### 406 – Subconsultant Management

Prepare and coordinate necessary subconsultant agreements required for the Project, and manage the subconsultants throughout the Design Phase accordingly.

#### 407 – Collaborative Project Website

Maintain the collaborative project website developed during the Programming Phase during the Design Phase that will be hosted on the DESIGN CONSULTANT's Sharepoint platform.

#### 408 – Supplemental Site Tours

Conduct supplemental site tours to existing WRFs, including several with MBR technology, to view specific process equipment and coordinate with plant O&M staff for additional information. Three (3) supplemental facility tours are assumed. Any applicable travel costs for DESIGN CONSULTANT, CITY and CMAR representatives associated with these site tours will be included under a specific Allowance.

#### 409 – Preliminary Staffing Plan

Develop a preliminary staffing plan, with recommendations for operations and maintenance staff type, numbers and shifts, for the entire OWRF (both existing and new liquids and solids process treatment trains). Coordinate with CITY staff and management accordingly.

**Deliverables:** Draft and Final Preliminary Staffing Plan (Number of copies TBD)

#### 410 – Council Meetings / Presentations (OPTIONAL)

If required by CITY, prepare relevant materials (i.e. presentation slides, renderings, etc.) regarding Project development for presentation and discussion with City Council and/or other CITY management representatives.

**Deliverables:** Presentation Materials (Number of copies TBD)

### TASK 500 – QUALITY MANAGEMENT

DESIGN CONSULTANT will perform various quality management activities throughout the Design Phase, as delineated in the following tasks and sub-tasks.

#### 501 – Update Quality Management Plan

Update the Quality Management Plan (QMP) that will identify and detail the proposed quality management activities for the duration of the Project. Specific components of the QMP will include identification of project personnel responsible for detailed checks; schedule of milestones and review dates; and project standards and design calculations management. Project-specific check comment forms and checking procedure checklists (by discipline) will also be included.

**Deliverables:** Quality Management Plan Update (Electronic format only)

#### 502 – Operability Review

DESIGN CONSULTANT will perform an internal operability review of the design at the 30 percent design review submittal stage (including Preliminary Design Report submittal). This review will be conducted to verify that the preferred operational strategies and control philosophy are being properly implemented. Efforts will include review of the applicable design criteria, conditions, and assumptions; design calculations; preliminary equipment data sheets; and updated equipment and instrumentation list.

**Deliverables: 30 Percent Review Submittal Comments Log (Electronic format only)**

**503 – Constructability Review**

DESIGN CONSULTANT will perform an internal constructability analysis of the plans and specifications at the 60 percent design review submittal stage. This will include a review of the design for the use of practical cost-effective construction measures, procedures and scheduling; required construction activities and their impact on existing equipment, process and operation; and review and coordination of contract provisions and construction details to minimize potential conflicts and claims. Efforts will include review of the updated control descriptions; updated design calculations; updated equipment data sheets (with catalog cuts); and updated equipment and instrumentation lists.

**Deliverables: 60 Percent Review Submittal Comments Log (Electronic format only)**

**504 – Detailed Quality Management Check**

DESIGN CONSULTANT will perform an internal detailed quality management check of the plans and specifications prior to the 95 percent design review [Agency Review] submittal. Efforts will include items identified on DESIGN CONSULTANT's detailed checklist, in accordance with the Quality Management Plan. This check will include a review of the plans, specifications, and typical details for conformity with the local, state and federal guidelines; as well as coordination between the process and mechanical work with all discipline groups (excluding electrical and I&C), including structural, architectural, HVAC, plumbing and fire protection. Following the detailed discipline review check, a subsequent detailed electrical and I&C check will be conducted for the documents and summary of the detailed check comments.

**Deliverables: 95 Percent Review Submittal Comments Log (Electronic format only)**

**TASK 600 – PERMITTING ASSISTANCE**

DESIGN CONSULTANT will perform various permitting coordination and assistance activities throughout the Design Phase, as delineated in the following tasks and sub-tasks. Specific permits, plans and reviews anticipated under this Project include:

- City of Chandler – Building Permit (and Building Plan Review)
- City of Chandler – Civil/Improvement and Encroachment Permit (and Civil Plan Review)
- City of Chandler – Erosion and Sediment Control Plan
- City of Chandler Fire Department reviews – Building Plan, Sprinkler System Plans, Site Plan
- MCESD – Approval to Construct
- ADEQ – “Significant Amendment” to the Existing OWRF Aquifer Protection Permit (APP)
- ADEQ – Reclaimed Water Permit (Amendment to Existing OWRF/City Permit)

**601 – City of Chandler Coordination**

Develop applicable permit applications and supporting documents in accordance with the Permitting Assistance Plan. Submit preliminary supporting documents as part of the CITY's Pre-Tech Review process (at the 30 percent design stage). Submit applicable Interim Submittal Review and Agency Review documents and associated reports, plans and supporting information

to the CITY's Development Services and Fire Departments for Building, Site, Civil and Fire plan review approvals accordingly. Provide additional information as requested from CITY plan review staff, as appropriate.

*NOTE: It is assumed that all CITY permit fees for the Project will be paid directly by the CITY, and thus are not included within this scope of services.*

**Deliverables: Draft and Final Permit Applications and Supporting Documentation (Number of copies TBD)**

#### 602 – MCESD Coordination

Develop the Agency Review document set(s) and associated permit application in accordance with the Permitting Assistance Plan and submit to MCESD for non-expedited review to obtain the Approval to Construct (ATC). It is assumed that two (2) review meetings will be conducted with MCESD to discuss any comments received from the County accordingly.

*NOTE: It is assumed that applicable permit application review fees will be paid by the DESIGN CONSULTANT, included as an Allowance herein.*

*NOTE: The subsequent Approval of Construction (AOC) submission is not included within this scope of services, but will be included under a subsequent Construction Phase Services contract (if desired by the CITY).*

**Deliverables: Draft and Final Permit Applications and Supporting Documentation (Number of copies TBD)**

#### 603 – ADEQ Coordination

Prepare the necessary APP Modification in accordance with the Permitting Assistance Plan and submit to ADEQ, along with applicable technical materials necessary to modify the existing OWRF APP.

*NOTE: It is assumed that applicable permit application review fees will be paid by the DESIGN CONSULTANT, included as a \$50,000 Allowance herein.*

**Deliverables: Draft and Final Permit Applications and Supporting Documentation (Number of copies TBD)**

#### 604 –HMMS / Encompsol Development

Develop a draft Hazardous Maintenance Management System (HMMS) that includes a summary assessment of the anticipated chemicals to be stored and handled at the OWRF site, and coordinate with the City for incorporation/upload into the CITY's Encompsol software/platform, for access by the CITY Fire Department and first responders accordingly.

**Deliverables: Draft and Final HMMS (Electronic format only)**

### TASK 700 – PUBLIC INVOLVEMENT ASSISTANCE

The purpose of the Public Involvement Program is to aid the project team in their communication with the community surrounding the Project site throughout the duration of the Project. It is the intention of the public involvement portion of the Project to keep affected stakeholders informed of proposed changes to the site, consider comments from and listen to potentially affected interests, and work with the project team to make sure that alternatives are developed which consider the feedback obtained from the public input, as may be requested by the CITY.

#### 701 – Community Advisory Panel (CAP) Meetings

DESIGN CONSULTANT will conduct meetings with a Community Advisory Panel (CAP) in order to solicit input and recommendations regarding architectural theme and site aesthetics. Meetings will be conducted at the CITY MUD facility. A total of three (3) CAP meetings are anticipated. DESIGN CONSULTANT will prepare an agenda and any necessary supporting materials prior to meetings, and will prepare and distribute minutes following meetings.

**Deliverables: Meeting Agenda and Summary Notes (Electronic format only)**

#### 702 – Project Newsletters

DESIGN CONSULTANT will develop project newsletters to be distributed to the local community residents and businesses around the project area, either in hardcopy or electronic (email) format. A total of two (2) project newsletters are anticipated.

**Deliverables: Draft and Final Newsletters (Number and type of copies TBD)**

#### 703 – Facility Renderings

DESIGN CONSULTANT will develop and update architectural renderings in 3D format, plus applicable architectural material boards, for assistance in communicating proposed facilities to the public, CITY management and other interested stakeholders throughout the duration of the Project.

**Deliverables: Renderings and Boards (Number and type of copies TBD)**

#### 704 – Public Meeting

A public meeting for the broader area to include residents and businesses, which can be sponsored by the Community Advisory Panel, will be held to provide the public an opportunity for transfer of information and ideas regarding issues relative to the site and overall Project. The meeting will be publicly advertised via project newsletter at least two (2) weeks prior, and will be conducted at a location to be determined. Coordination will take place with the City's Public Information Office for advertising the public meeting and ensuring that project messages are consistent. DESIGN CONSULTANT will assist CAP in the development of presentation materials, suitable for public display. A total of one (1) public forum/open house may be conducted during the Project duration.

### TASK 800 – CMAR COORDINATION

It is the CITY's intent to deliver the Project using the Construction Manager at Risk (CMAR) delivery method. The CMAR will be initially contracted to provide pre-construction phase [Design Phase] services, including but not necessarily limited to the following efforts:

- Develop and progressively update a detailed "open book" cost model based on current market conditions to confirm budgets and help guide design decisions.
- Develop a construction management plan and schedule in advance of construction.
- Provide alternative system evaluation and constructability reviews.
- Develop long-lead procurement strategies and potentially initiate early procurement of long-lead items.

- Assist in the permitting process, particularly CITY building and grading permits.
- Provide procurement services for selection of key subcontractors and suppliers.
- Develop a guaranteed maximum price (GMP) for construction for CITY review and consideration.

Assuming CITY acceptance of the GMP, the CMAR will then provide all services required of a general contractor, including self-performance and subcontractor procurement and management, during subsequent construction and post-construction phases of the Project.

The relationship between the CMAR and DESIGN CONSULTANT is intended to be collaborative and proactive, with both participating as advisors to the CITY during the pre-construction phase [Design Phase]. It is the CITY's desire to incorporate a contractor's perspective and input to the Project planning and design decisions, and to leverage the ability for early procurement and phased construction prior to full completion of design.

As such, it is also the CITY's intent to phase the procurement and construction activities through multiple GMPs. A total of two (2) phased construction packages are anticipated for the work under this Project, including:

- Early Site Work and Prep (Mass Excavation and Grading); Early Procurement of Long-Lead Equipment Items
- Balance of Work

*NOTE: It is anticipated that the selected CMAR will also complete related work at the OWRF site under a separate GMP for the associated efforts identified in the separate "OWRF Process Improvements" contract.*

The following tasks define the specific efforts to be performed and completed by the DESIGN CONSULTANT during the pre-construction phase [Design Phase] of the Project.

#### 801 – Draft CMAR Pre-Construction Contract Development

Coordinate with CITY to provide input and review of the CMAR Pre-Construction Phase contract, with particular emphasis on CMAR scope of work activities as they relate to the specific DESIGN CONSULTANT scope and associated assumptions.

***Deliverables:*** Written comments to draft CMAR Pre-Construction Phase Contract (Electronic format only)

#### 802 – Cost Model and GMP Review and Validation

Coordinate with CMAR and CITY to provide input and information on equipment and other major capital cost items throughout design phase. Review and validate the initial cost model (post-30% design submittal) and subsequent cost model updates (based on 60% and 90% design submittals) developed by CMAR. Cost validation activities will include a review and verification of direct and indirect costs, CMAR fee and CMAR contingency; review/audit supplier and subcontractor quotes and request supplemental quotes, as necessary; compare costs with other applicable projects; and perform review of risk analysis model and/or cost contingencies developed by the CMAR. Indirect costs included in the CMAR cost model will include applicable general conditions and general requirements, bonds, insurance and sales tax.

Using the cost models and GMP(s) as the basis for the total construction cost(s), coordinate with the CITY regarding additional CITY administrative costs, engineering fees, construction

administration and inspection fees, and (if applicable) CITY contingency to develop a Total Project Cost Estimate (TPCE).

*NOTE: A parallel cost estimate will not be performed. Any parallel cost estimate or additional procurement and/or coordination with a third-party cost estimator for additional cost model and GMP validation will be handled under Supplemental Services, if desired by the CITY.*

**Deliverables: Written recommendation(s) to CITY regarding opinion of GMP(s) acceptance (Electronic format only)**

#### 803 – Early Procurement Activities

Coordinate with CMAR and CITY to develop an equipment and materials procurement plan, including identification of items to be selected and/or procured early based on “best value” or low-bid strategies, and define the parameters associated with “best value” selection as applicable. Those items selected for early procurement will also identify the acceptable manufacturers and associated Bid Documents requirements.

Coordinate with CMAR and CITY to develop multiple packages of the applicable front-end documents (Division 0 and 1), technical specifications (Division 2 through 17), and supporting design drawings for early procurement of major long-lead equipment items with the specific acceptable manufacturers. Coordinate with CMAR as part of the bidding process and prepare any addenda as required. Assist the CITY and CMAR with the review of the supplier proposals and bid packages and the subsequent selection process.

It is assumed that the CMAR shall be responsible for the packaging of front-end documents, technical specifications and applicable design drawings developed by DESIGN CONSULTANT; submittal of packages to applicable manufacturers and/or vendors; coordination of vendor proposals; pre-selection of equipment and appurtenances (with CITY and DESIGN CONSULTANT input); delivery of detailed design criteria and documents of selected equipment to DESIGN CONSULTANT for further use and incorporation into detailed design documents; and coordination of delivery, storage, and payment of procured items accordingly.

**Deliverables: Early Procurement Design Document Packages (Electronic format only)**

#### 804 – General CMAR Coordination

In addition to Task 802 and 803 efforts above, general coordination with CMAR during the pre-construction phase [Design Phase] will include, but not necessarily be limited to:

- Coordination with CITY regarding development of the CMAR Construction and/or Post-Construction Phase contract and applicable CITY front-end documents and ENGINEER’s Division 1 specifications.
- Soliciting input from CMAR during design development as appropriate;
- Providing input to construction management plan and schedule development;
- Evaluating alternative systems and materials proposed or suggested by CMAR;
- Responding to constructability review comments;
- Providing input to MOPO plan and schedule; and
- Attending subcontractor pre-selection meetings conducted by CMAR as appropriate.

*NOTE: Should the CITY be unable or unwilling to accept the CMAR GMP and instead decide to procure and deliver the Project using a traditional “design-bid-build” delivery method, subsequent modifications to the front-end documents, technical specifications, and associated design drawings specifically applicable to the CMAR delivery method will be handled under Supplemental Services, if desired by the CITY.*

*In addition, additional services for bidding, including preparation of Bid Document sets, participation on a pre-bid conference, responding to Bidder questions, preparing applicable addenda, attendance at the Bid opening, assistance in evaluation of Bids, and participation in a pre-construction conference with the selected General Contractor will also be handled under Supplemental Services, if desired by the CITY.*

**EXHIBIT A-2**  
**PROJECT TEAM PERSONNEL**

DESIGN CONSULTANT will not change the designated personnel identified below without prior written approval by the CITY. Modifications to the project team, subconsultants identified, or their respective scopes of service, either by adding, deleting or changing, will require prior written approval by the CITY.

<b>TITLE / RESPONSIBILITY</b>	<b>NAME</b>
<b><u>Carollo Engineers</u></b>	
Principal-in-Charge / Project Director	Dave Sobeck
Project Manager	Russ Wachter
Project Engineer	Andrew Gilmore
Process Modeling	Carlos Lopez
Permitting / Cost Estimating	Lisa Snyders
Lead – BNR / Secondary Treatment	Dana Trompke
Lead – Tertiary Treatment	Zhuang Liu
Lead – Solids Handling	Chad Meyer
Lead Architect	Jeff Alband
Lead Site/Civil	Judd Hunemuller
Lead Structural	David Geisler
Lead HVAC/Plumbing	Harry Rice
Quality Manager	John Puzauskas
Quality Manager	George Shirley
Quality Manager	Thom Besett
Technical Advisor	John Fraser
Technical Advisor	Rod Reardon
<b><u>Wilson Engineers</u></b>	
Lead – IPS / Headworks	Uday Gandhe
Electrical / I&C	Michael Churchill
Constructability	Ed McCurdy
<b><u>Makinen Professional Services</u></b>	
Public Involvement	Teresa Makinen
<b><u>Enterprise Protection Associates</u></b>	
Site Security	John Saunders
<b><u>J2 Engineering and Environmental Design</u></b>	
Landscape Architecture	Kurt Montei

**EXHIBIT A-3  
CITY RESPONSIBILITIES**

The following items to be completed by the CITY are intended to supplement the requirements set forth in the DESIGN CONSULTANT CONTRACT:

1. As requested, aid the DESIGN CONSULTANT in gaining access to and making provisions for the DESIGN CONSULTANT to enter upon public and private land as required for the DESIGN CONSULTANT to perform its work under this CONTRACT.
2. Review and provide written comments to DESIGN CONSULTANT's questions, draft and interim submittals, and other design review materials in a timely manner within the appropriate review/comment period(s) as identified on the Project Schedule.
3. Furnish, to the extent reasonable, available copies of all calculations, reports and data applicable to the new OWRF treatment train and supporting facilities, including but not limited to, facility integration with existing OWRF and/or AWRF facilities (if available).
4. Furnish copies of previous soils reports (if available).
5. Furnish information regarding CITY utilities (existing and/or proposed) in or near the OWRF site.
6. Furnish available information regarding proposed municipal and industrial wastewater discharges, including estimated average and peak flows, locations of discharge points, and estimated wastewater characteristics.
7. Obtain all easements and rights-of-way (as applicable).
8. Pay directly all CITY T&D and Fire Department review fees (for civil, building and fire plan reviews) not specifically included in the CMAR guaranteed maximum price (GMP).
9. Furnish authorization for DESIGN CONSULTANT to discuss project details with and obtain information from utilities, including power supplier (SRP). Authorization will not include decision-making by DESIGN CONSULTANT.

**EXHIBIT B-1  
FEE SCHEDULE**

<b>TASK</b>	<b>TASK DESCRIPTION</b>	<b>TOTAL FEE</b>
<b>DIRECT LABOR</b>		
<b>TASK 200 – PRELIMINARY DESIGN DEVELOPMENT</b>		<b>\$320,088</b>
201	Geotechnical Investigations	\$12,288
202	Topographical Site Survey	\$24,000
203	Drainage Report	\$28,200
204	Preliminary Design Report	\$255,600
<b>TASK 300 – DETAILED DESIGN DEVELOPMENT</b>		<b>\$6,550,400</b>
301	Interim (30%) Review Submittal Package	\$810,280
302	Interim (60%) Review Submittal Package	\$1,878,800
303	Interim (95%) Review Submittal Package [Agency Review Set]	\$3,597,080
304	Final (100%) Contract Documents	\$264,240
<b>TASK 400 – PROJECT MANAGEMENT</b>		<b>\$457,140</b>
401	Update Project Plan	\$4,440
402	Project Control and Reporting	\$45,120
403	Project Schedule	\$22,560
404	Project Meetings	\$188,820
405	Submittal Review Workshops	\$104,448
406	Subconsultants Management	\$23,520
407	Collaborative Project Website	\$13,920
408	Supplemental Site Tours	\$40,840
409	Preliminary Staffing Plan	\$13,472
410	Council Meetings / Presentations	\$0
<b>TASK 500 – QUALITY MANAGEMENT</b>		<b>\$693,640</b>
501	Update Quality Management Plan	\$4,440
502	Operability Review	\$45,320
503	Constructability Review	\$49,080
504	Detailed Quality Management Check	\$594,800

<b>TASK 600 – PERMITTING ASSISTANCE</b>		<b>\$163,020</b>
601	City of Chandler Coordination	\$38,592
602	MCESD Coordination	\$39,352
603	ADEQ Coordination	\$50,288
604	HMMS / Encompsol Development	\$34,788
<b>TASK 700 – PUBLIC INVOLVEMENT ASSISTANCE</b>		<b>\$45,704</b>
701	Community Advisory Panel (CAP) Meetings	\$11,496
702	Project Newsletters	\$1,880
703	Facility Renderings	\$32,328
704	Public Meeting	\$0
<b>TASK 800 – CMAR COORDINATION</b>		<b>\$294,944</b>
801	Draft CMAR Pre-Construction Contract Development	\$4,364
802	Cost Model and GMP Review and Validation	\$132,120
803	Early Procurement Activities	\$68,220
804	General CMAR Coordination	\$90,240
<b>DIRECT LABOR SUBTOTAL</b>		<b>\$8,524,936</b>
<b>ALLOWANCES</b>		
1	Travel & Subsistence	\$10,000
2	Reimbursable Mileage	\$5,000
3	Reproduction	\$60,000
4	Permitting Fees	\$50,000
5	AZTEC (Survey)	\$25,000
6	Ninyo and Moore (Geotechnical)	\$50,000
7	J2 Environmental and Engineering (Landscaping)	\$45,500
8	Makinen Professional Services (Public Involvement)	\$10,000
9	Enterprise Protection Associates (Security)	\$60,000
10	Southwest Ground-water (ASR Wells)	\$5,000
11	Supplemental Site Tours	\$4,500
12	Owners Allowance	\$150,000
<b>ALLOWANCES SUBTOTAL</b>		<b>\$475,000</b>
<b>PROJECT TOTAL</b>		<b>\$8,999,936</b>

**EXHIBIT B-2  
LABOR RATES**

<b>LABOR CATEGORY</b>	<b>HOURLY BILLING RATE</b>
Project Principal	\$245.00
Senior Professional	\$225.00
Lead Project Professional	\$198.00
Project Professional	\$185.00
Professional	\$170.00
Assistant Professional	\$145.00
Senior Technician	\$135.00
Technician	\$105.00
Document Processing/Clerical	\$85.00

1. Direct labor for Carollo Engineers personnel will be billed at the above hourly rates for the duration of the contract (assumed to be mid-2015). Future contract amendment(s) for Construction Phase Services may be subject to billing rate escalation.
2. All Allowances will be billed at cost with no markup.

EXHIBIT C

Contractor Immigration Warranty  
To Be Completed by Design Consultant Prior to Execution of Contract

A.R.S. § 41-4401 requires as a condition of your contract verification of compliance by the Design Consultant and subconsultants with the Federal Immigration and Nationality Act (FINA), all other Federal immigration laws and regulations, and A.R.S. § 23-214 related to the immigration status of its employees.

By completing and signing this form and attached Employee Verification Worksheet the Design Consultant shall attest that it and all subconsultants performing work under the cited contract meet all conditions contained herein.

Project Number/Division: WW1301.201
Name (as listed in the contract): Carollo Engineers, Inc.
Street Name and Number: 4600 E. Washington Street, Suite 500
City: Phoenix State: AZ Zip Code: 85034

I hereby attest that:

1. The Design Consultant complies with the Federal Immigration and Nationality Act (FINA), all other Federal immigration laws and regulations, and A.R.S. § 23-214 related to the immigration status of those employees performing work under this contract;
2. All subconsultants performing work under this contract comply with the Federal Immigration and Nationality Act (FINA), all other Federal immigration laws and regulations, and A.R.S. § 23-214 related to the immigration status of their employees; and
3. The Design Consultant has identified all Design Consultant and subconsultant employees who perform work under the contract and has verified compliance with Federal Immigration and Nationality Act (FINA), all other Federal immigration laws and regulations, and A.R.S. § 23-214.

Signature of Design Consultant (Employer) or Authorized Designee:

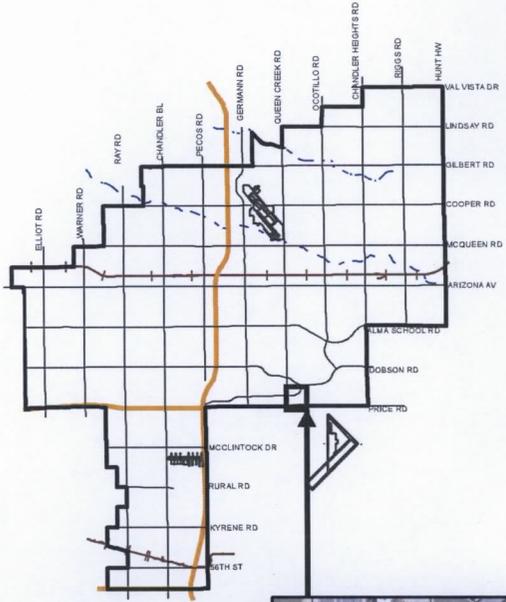


Printed Name: Russell A. Wachter

Title: Executive Vice President

Date (month/day/year): 06/23/2014

# OWRF EXPANSION PROJECT NO. WW1301.201



MEMO NO. CP15-001

 PROJECT SITE

