

**CITY OF PHOENIX, ARIZONA  
WATER SERVICES DEPARTMENT**

**JANUARY 28, 2002**

**LAKE PLEASANT WATER TREATMENT PLANT  
DESIGN-BUILD-OPERATE PROJECT – WS85350004  
REQUEST FOR PROPOSALS**

**ADDENDUM NO. 4**

**ATTENTION PROPOSERS**

The following revisions to the above-referenced Request for Proposals (RFP), dated September 5, 2001, shall become a part of the RFP. This Addendum contains a cover page and 12 pages of written text, 2 proposal forms, and 0 figures. Proposers shall acknowledge receipt of this Addendum No. 4 in the respective Transmittal Letters to their Revised Preliminary Technical Proposal and Proposal.

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Assistant Water Services Director

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Date

Notice is hereby given that the RFP is revised as follows:

1. **Amend RFP Table 1-2, “Background Documents List” on page 1-14, by adding the following new background document:**

64	Process Control System Standards Study – Functional Standards Volume 1	City of Phoenix WSD	Aug 2001	CD
65	Phase II-B/C Report Alternative Process Evaluation Pilot Study Draft Final Report	Carollo Engineers	Dec 2001	Report
66	Phase II-B/C Report Alternative Process Evaluation Pilot Study Draft Final Report Appendices-Volume 4	Carollo Engineers	Dec 2001	Report
67	Phase II-B/C Report Alternative Process Evaluation Pilot Study Draft Final Report Appendices-Volume 5	Carollo Engineers	Dec 2001	Report
68	North Phoenix Capacity Increase Program Final Report	Greeley and Hansen	Dec 2001	CD

2. **Amend RFP Section 2.1.2, “Proven Technologies” on page 2-3, by replacing the paragraph beginning ““Allowable exceptions” are...” with the following two paragraphs:**

“Allowable exceptions” are microfiltration (MF), dissolved air flotation (DAF) and ballasted flocculation technologies. Experience for these technologies need not be limited to installations in the United States although all other requirements of a proven technology apply.

Proposers are advised that ultra-violet (UV) disinfection technology is not subject to the requirements identified in this section for proven technologies or allowable exceptions. However, in the event UV disinfection technology is proposed as part of the Facilities, Proposers shall comply with the requirements identified in Appendix 5.

3. **Amend RFP Section 2.1.2, “Proven Technologies” on page 2-4, by replacing the last paragraph and three bullets beginning “Notwithstanding...” with the following:**

Notwithstanding the foregoing, the City has determined that:

- Drying beds and/or lagoons for residuals processing are not allowed as part of the Facilities

- wetlands are not allowed as part of the Facilities
  - The City practices free chlorine residual disinfection, and does not wish to change to chloramines at this time. For disinfection purposes, the City also wishes to maintain a free chlorine residual in the Finished Water Reservoirs. Therefore, the treated water in the Finished Water Reservoirs and leaving the Plant must contain free chlorine for residual disinfection in a concentration specified by the City, and be fully compatible with water supplied from other City water treatment plants.
  - Any technology that is not either (a) proven or (b) an allowable exception, or (c) an additional exception which has been proposed by the Proposer and found non-objectionable by the City.
4. **Amend RFP Section 3.2, “Schedule” on page 3-6, by changing the title of the March 5, 2002 activity to “Deadline for Submittal of Written Comments on the Service Agreement”.**
  5. **Amend RFP Section 3.2, “Schedule” on page 3-6, by inserting the following new activity after the March 5, 2002 activity:**  
  
May 7, 2002 Deadline for Submittal of Revised Preliminary Technical Proposals
  6. **Amend RFP Section 4.3.1, “Deadline for Revised Preliminary Technical Proposal” on page 4-5, by changing the date “March 5, 2002” in the first sentence to “May 7, 2002”.**
  7. **Amend RFP Section 4.3.3, “Revised Preliminary Technical Proposal Format and Content” on page 4-6, by replacing the eighth and ninth bullets with the following:**
    - Comments on the Service Agreement (see Section 4.3.4 for submittal requirements)
    - Optional Proposal Form 1: Comments on the Service Agreement (see Section 4.3.4 for submittal requirements)

8. **Amend RFP Section 4.3.3, “Revised Preliminary Technical Proposal Format and Content” on page 4-7, by deleting the last sentence of the paragraph beginning “Revised Technical Proposals shall be ...”.**
9. **Amend RFP Section 4.3.4, “Written Comments on the Service Agreement” on page 4-7, by replacing the first paragraph with the following three paragraphs:**

The portion of the Revised Preliminary Technical Proposals pertaining to the written comments on the Service Agreement shall be submitted at or before 5:00 p.m. MST, on March 5, 2002. The written Service Agreement comments shall be submitted to the Project Manager at the address set forth in Section 4.3.1. The following information shall be included on the outside of each envelope or box: (1) name of Proposer, (2) “Revised Preliminary Technical Proposal - Written Comments on Service Agreement”, and (3) Project Number WS85350004. The written comments will not be opened publicly.

Fifteen (15) copies of the written Service Agreement comments shall be submitted. The comments shall be submitted in a three-ring binder in the manner described herein, and be accompanied by a cover letter identifying the individuals who will be the Proposer’s key legal and business representatives available to respond in a timely manner to written inquiries submitted, and to attend meetings requested, by the City. Proposers are advised that the City expects to initiate meetings with the Proposers to discuss the Service Agreement comments prior to the submittal of the balance of the Revised Preliminary Technical Proposals on May 7, 2002.

The City’s preference for the submittal of the written comments is by means of a neat, handwritten mark-up of the Service Agreement (including the Common Appendices). Written comments shall be presented in the form of suggested contract language and be accompanied by a narrative description of the rationale for such language. Any comments which cannot be neatly marked on the Service Agreement (including the Common Appendices) should be included on separate typed sheets as riders.

10. **Amend RFP Section 5.2, “Proposal Format” on page 5-3, by replacing item 13 under “Volume III: Technical Proposal” with the following:**
  13. Technical Proposal Forms (PF 12 through PF 33 and PF 36)

11. **Amend RFP Section 5.5.3.13, “Technical Proposal Forms” on page 5-27 by adding the following to the end of the list of Proposal Forms:**

Proposal Form 36 – Security Features

12. **Insert the following new section after RFP Section 5.5.3.13:**

**5.5.3.14 Security Features and Preliminary Security Plan**

This section shall consist of the Proposer’s Preliminary Security Plan to be implemented throughout the Operation Period. The Preliminary Security Plan shall be prepared in conformance with the requirements in Appendix 14 for the Security Plan. The Security Plan shall be submitted in its final form prior to the initiation of the Operation Period.

The Proposer shall describe the security features of each component of the Facilities on Proposal Form 36. Appendix 5 identifies minimum requirements of security features.

13. **Amend RFP Section 6.2.1.3, “Demonstrated Compliance with Design Requirements” on page 6-6, by inserting “security,” after the words “instrumentation and control,” under the “Non-Process Design” heading.**
14. **Amend RFP Section 6.2.1.5, “Operations” on page 6-8, by adding a new criterion to the end of the section as follows:**

**Preliminary Security Plan**

This criterion will include an evaluation of the Proposer’s overall approach to securing and protecting the Facilities during the Operation Period as set forth in the proposed Preliminary Security Plan.

15. **Replace Optional Proposal Form 2, “Additional Project Commitments” with the revised Optional Proposal Form 2 attached to this Addendum.**
16. **Insert new Proposal Form 36 after Proposal Form 35. Proposal Form 36 is attached to this Addendum.**
17. **Replace subsection (B) of the Service Agreement, Section 7.9 “Safety and Security” on page 78, with the following:**

(B) Security. The Company, in accordance with the Contract Standards and Appendix 14, shall be responsible for the security and protection of the Facilities. The Company shall guard against and be responsible for all damage or injury to such properties caused by trespass, negligence, vandalism or malicious mischief of third parties.

18. **Amend Appendix 5, Section 5.2.4, “Setback Requirements and Height Restrictions” on page 5-6, by deleting “(minimum 200 feet)” from the fourth line of the first paragraph.**

19. **Amend Appendix 5, Section 5.3.1, “General” on page 5-10, by replacing the section with the following:**

The Plant treatment processes shall be comprised of proven technologies or allowable exceptions. A proven technology is any technology related to water treatment that has been installed and operated in the United States at a water treatment facility and concurrently meets all of the following at that facility:

- is supplied by a surface water source,
- is serving the public,
- is currently in operation and has been operating for at least the last two years prior to December 5, 2001, under similar raw water quality conditions, and
- is currently operating at a modular size at least as large and a rate of operation at least as great as that proposed. The intent of this requirement is that the Company need not demonstrate that the process or technology has been operated at a facility of the same or larger size, i.e., an 80 mgd facility, but rather that the process unit size of the process or technology proposed (e.g., reactor size, basin size, contactor size, etc.) and its rate of operation (e.g., gpm per sf, etc.) have been demonstrated in accordance with the requirements of this section.

For the purposes of assessing proven technologies and allowable exceptions, “similar raw water quality” means raw water which faces the same treatment challenges as that anticipated at Lake Pleasant. The intent of this requirement is that the technologies proposed have demonstrated their effectiveness at addressing surface waters with challenges such as changing and adverse Raw Water quality and high total organic carbon and high turbidity.

“Allowable exceptions” are microfiltration (MF), dissolved air flotation (DAF), ballasted flocculation technologies, and *[If a Proposer requests the City to consider an additional exception to the definition of a proven technology at the time of Preliminary Technical*

*Proposal submittal and the City finds such technology non-objectionable, it will be added to this Section 5.3.1 for that particular Proposer.]* Experience for these technologies need not be limited to installations in the United States although all other requirements of a proven technology apply. It is expected that these allowable exceptions are unfamiliar to MCESD and may require pilot testing under conditions determined by MCESD prior to MCESD approval. MCESD may also require pilot testing of proven technologies. The Company shall be responsible for obtaining all Governmental Approvals necessary to construct and operate such unit processes for the duration of the Service Agreement.

Ultra-violet (UV) disinfection technology is not subject to the requirements identified in this section for proven technologies or allowable exceptions. UV disinfection technology included as part of the Facilities shall comply with the requirements identified in Section 5.3.3.1.

The Company shall design and construct Facilities that are capable of operating within acceptable ranges for all processes and equipment at a Finished Water production rate as low as 20 mgd. Under all circumstances the Company shall meet the water quality and quantity Performance Guarantees.

The Facilities shall be designed to meet all required hydraulic and operating conditions, to permit modifications and expansions to treatment capacity or processes in the future and to meet the Performance Guarantees.

Drying beds and lagoons for residuals processing and wetlands are not allowed as part of the Facilities. The City practices free chlorine residual disinfection, and does not wish to change to chloramines at this time. For disinfection purposes, the City also wishes to maintain a free chlorine residual in the Finished Water Reservoirs. Therefore, the treated water in the Finished Water Reservoirs and leaving the Plant must contain free chlorine for residual disinfection in a concentration specified by the City, and be fully compatible with water supplied from other City water treatment plants.

20. **Amend Appendix 5, Section 5.3.2, “Chemical Storage and Addition” on page 5-11, by replacing the second sentence of the first paragraph with the following:**

Consistent with the City’s Regulatory Compliance Excellence Program, the Company shall not use day tanks as part of its chemical feed systems.

21. **Amend Appendix 5, Section 5.3.3.1, “Ultraviolet Disinfection” on page 5-12, by replacing the section with the following:**

If UV disinfection is included as part of the Facilities, the Company shall obtain the City’s written approval that the UV disinfection equipment requirements of this section have been met prior to ordering the equipment. The Company shall submit to the City evidence that the particular type, size, manufacturer and model of UV equipment proposed has been previously validated in accordance with EPA guidelines and has been in successful operation at a water treatment plant for a minimum of one year prior to the *(timing to be discussed with the Proposers as part of the Service Agreement review)*. The specific features of the UV disinfection facilities are provided in Attachments 5D and 5E.

22. **Amend Appendix 5, Section 5.3.6, “Residuals Handling Facilities” on page 5-13, by inserting the following text after the fourth sentence ending “...splatter.”:**

Any clarified liquid from a dewatering process (i.e., centrate, permeate, etc.) shall either be treated prior to recycling or disposed of in accordance with Applicable Law. The clarified liquid may be discharged to the sanitary sewer to the extent allowed by the Phoenix City Code, Chapter 28 Sewer Article VI Industrial User and Pretreatment Requirements.

23. **Amend Appendix 5, Section 5.3.7, “Odor Control” on page 5-14, by deleting “(as applicable)” from the second line of the paragraph.**

24. **Amend Appendix 5, Section 5.3, “WATER TREATMENT PROCESS REQUIREMENTS” on page 5-14, by inserting the following new section after Section 5.3.7 and renumbering existing Section 5.3.8 (“Other Process Features”) as “Section 5.3.9”:**

#### **5.3.8 Granular Active Carbon Material Requirements**

All granular active carbon (GAC) provided at the Plant for water treatment during the Construction Period, whether used for adsorption or as a media for biological growth, shall be virgin GAC.

25. **Amend Appendix 5, Section 5.4.4, “Raw Water Pumping Station” on page 5-16, by replacing the first sentence on page 5-16 with the following:**

The Raw Water Pumping Station, including all pumps and control panels shall be enclosed in a building.

26. **Amend Appendix 5, Section 5.5.10, “Security” on page 5-26, by replacing the second sentence in the third paragraph with the following:**

At the Raw Water Pumping Station Site, the Raw Water Pumping Station, including all pumps and control panels, shall be enclosed in a building.

27. **Amend Appendix 5, Section 5.10.1 “Electrical Service” on page 5-73, by adding the following new sentence to the end of the first paragraph:**

All transformers and substations which are visible from outside the exterior Plant Site and Raw Water Pumping Station Site shall be protected by bulletproof walls.

28. **Amend Appendix 5, Section 5.12.3, “System Design Criteria” on page 5-78, by adding the following new bullet to the end of the section:**

- All critical local control panels shall be securely locked to prevent unauthorized access and include intrusion alarms monitored by the Facilities’ security system.

29. **Amend Appendix 5, Attachment 5B, Section 5B.1.5.17, “Security and Surveillance Systems” on page 5B-13 by replacing the entire section with the following:**

Plant: Provide a security system that will monitor intrusion of all buildings and the status of all doorways throughout the Plant Site and access entries on the Finished Water Reservoir. Transmit each monitoring point to a local area alarm panel that in turn is capable of repeating each alarm to the Main Control Room in the Operations Building via the Plant’s Distributed Control System. The Distributed Control System equipment at the Main Control Room shall output a general intrusion alarm for remote monitoring via the Company’s system with an option to connect to the City’s water department SCADA system or designated central monitoring system. Provide bulletproof glass on all exterior windows of the Main Control Room in the Operations Building. Provide security cameras at the access entries on the Finished Water Reservoirs, all Plant Site entrance gates, the Plant Site perimeter and all other critical areas in sufficient number to ensure the Plant Site is secure. The security system shall have motion sensors and be equipped for night vision. Provide video monitors in the Operations Building for viewing the camera-covered areas. Equip each Plant Site entry gate, exterior doors to all structures and secured rooms with a card reader that enables City personnel to enter that location.

Each person shall be assigned a unique access card that shall be logged into a database for each use of the access card. Provide remote control of and voice communications with all Plant Site entrance gates from the Operations Building video monitoring area.

Raw Water Pumping Station: Provide a security system similar to that described for the Plant Site. Equip the main entry with a card reader that enables City personnel to enter that location. Each person shall be assigned a unique access card that shall be logged into a database during each entry or exit to the Raw Water Pumping Station Site. Provide the local alarm panel with a general intrusion alarm for remote monitoring via the Raw Water Pumping Station's SCADA panel or designated central monitoring room. Provide security cameras at the Raw Water Pumping Station Site entrance gates and site perimeter in sufficient number to ensure that the Raw Water Pumping Station Site is secure. The security system shall have motion sensors and be equipped for night vision. Provide video monitors in the Operations Building for viewing the camera-covered areas.

Provide the City with access cards to all access gates. Specific features of the surveillance and security equipment are provided in Attachment 5D.

30. **Amend Appendix 5, Attachment 5B, Section 5B.2.6.1 “Finished Water Pumping Station” on page 5B-23 by replacing the 8<sup>th</sup> and 9<sup>th</sup> sentences of the second paragraph beginning “Provide the engine generators...” with the following:**

Provide the engine generators with either battery or compressed air starting systems. If compressed air starting systems are used, provide redundant air compressors with a common air receiver tank and a complete air piping system to serve all of the engine generators that will use compressed air starting systems through the first expansion.

31. **Amend Appendix 9, Notes to Table 9-1 on page 9-4, by inserting the following sentence after the first sentence of Note 1:**

At least 1.0 log of *Cryptosporidium* inactivation shall be achieved on a continuous basis.

32. Amend Appendix 9, Table 9-2 on page 9-7, by changing “or” to “and” under the Point of Performance Measurement column for Environmental Performance Guarantee Nos. 1 and 3.
33. Amend Appendix 13, Section 13.1 “Content and Submittal Requirements” on page 13-1, by adding the following new bullet to the end of the list of bullets:
- A description of the procedures to be implemented to mitigate potential degraded water quality and biological activity in the Raw Water Transmission Line during any required periods of Plant shutdown.
34. Amend Appendix 13, Section 13.1.1, “Emergency Operations Plan” on page 13-2, by adding the following bullets to the end of the Section:
- Operating under a security alert mode
  - Operating under a security emergency mode
35. Insert the following new section after Section 14.6.3 of Appendix 14 on page 14-12:

#### **14.6.4 Identification Badges and Uniforms**

The Company shall provide standardized identification badges and uniforms to all of its on-site employees throughout the Operation Period. The Company’s employees shall wear these badges and uniforms at all times when on the Sites.

36. Insert the following new sections after Section 14.8.4 of Appendix 14 on page 14-13:

#### **14.9 GRANULAR ACTIVATED CARBON MATERIAL REQUIREMENTS**

All granular activated carbon (GAC) used for water treatment at the Plant, whether used for adsorption or as a media for biological growth, shall be either virgin GAC or GAC that originated from the Plant and has been separately reactivated (i.e. not mixed with other GAC) in a facility that only reactivates GAC from potable water treatment plants.

#### **14.10 SECURITY PLAN**

At least 180 days before the anticipated start of the Operation Period, the Company shall prepare and submit for the City’s review a Security Plan that incorporates, and where appropriate, expands upon its Preliminary Security Plan included as Attachment 14B to this Appendix. After addressing the City’s comments, the Company shall submit a

revised Security Plan to the City prior to the initiation of the Operation Period. This plan shall be updated when security equipment or systems are added or modified and submitted to the City annually with a summary of new or modified equipment or systems. The Company shall comply with the Security Plan throughout the Operation Period.

#### **14.10.1 Minimum Requirements for the Security Plan**

The Company's Security Plan shall include at a minimum, the following information:

- A general description of the Company's security measures and procedures for prevention, detection, and response to terrorism, vandalism, sabotage, natural disasters, theft, accident, assault on employees, and cross-connection contamination.
- A risk analysis of critical areas on the Sites and measures to secure them. Critical areas include, but are not limited to, chemical storage and feed facilities, control systems, electrical systems (including transformers), Finished Water Reservoirs, laboratory, pump stations, and the Intake.
- A description of the Company's zoning or subzoning of the Facilities into multiple levels of security.
- A description of the intrusion detection and surveillance systems.
- A description of all security alarms and how and where they will be monitored to ensure a rapid and effective response.
- A detailed description of features and procedures that will secure and protect chlorine gas storage facilities.
- A description of the procedures and surveillance activities to be implemented to ensure protection of the portion of the natural gas transmission line located on the Plant Site.
- A description of the Raw Water Transmission Line Site monitoring activities (to periodic inspections at a minimum).
- A description of means to track Company's staff, vendors, visitors, City staff, and all other persons on the Plant Site and Raw Water Pumping Station Site.
- A description of the methods to detect and respond to chemical or biological contamination of the Raw Water, treated water, or Finished Water.

- A vulnerability assessment of the Facilities and shall include, but not be limited to, a review of pipes and constructed conveyances, physical barriers, water collection, pretreatment, treatment, storage and distribution facilities, electronic, computer or other automated systems which are utilized by the public water system, the use, storage, or handling of various chemicals and the operation and maintenance of such system, as consistent with all applicable law.
- An emergency response plan for the Facilities and shall also include actions, procedures, and identification of equipment which can obviate or significantly lessen the impact of terrorist attacks or other intentional actions on the public health and the safety and supply of drinking water provided to communities and individuals, as consistent with applicable law.

The Security Plan shall include all of the Company's commitments made as part of the Company's Preliminary Security Plan, which is provided as Attachment 14B to this Appendix.

**ATTACHMENTS**

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## OPTIONAL PROPOSAL FORM 2

### ADDITIONAL PROJECT COMMITMENTS

This Proposal Form shall include Project commitments that are either unspecified or more stringent than those required by the Service Agreement and not included on other Proposal Forms or Drawings. Such commitments shall be identifiable and measurable. The Proposer shall list each commitment individually. The City, at its sole discretion, shall be the right to accept or reject any or all of the commitments.

#### **Preliminary DB Quality Management Plan**

- Commitment 1
- Commitment 2
- Commitment (n)

#### **Project Management and Leadership**

- Commitment 1
- Commitment 2
- Commitment (n)

#### **Preliminary Operations Protocol**

- Commitment 1
- Commitment 2
- Commitment (n)

#### **Preliminary Maintenance, Repair and Replacement Plan**

- Commitment 1
- Commitment 2
- Commitment (n)

#### **Preliminary Security Plan**

- Commitment 1
- Commitment 2
- Commitment (n)

#### **Other**

- Commitment 1
- Commitment 2
- Commitment (n)

## PROPOSAL FORM 36

### SECURITY FEATURES

Provide a full description of security features, equipment and systems to be provided including, but not limited to, the items listed below.

Methods to Secure Critical Areas:

Surveillance and Intrusion Detection and Alarm Systems:

Access Control System (e.g., card readers or key pads):

Monitoring of Security Information:

Measures to Prevent and Detect Chemical or Biological Contamination:

Other: