

COUNCIL DECISION REQUEST

SUBJECT: Water Master Plan Update

MEETING DATE: May 7, 2009

PAYSON GOAL: NEW: EXISTING:

ITEM NO.:

TENTATIVE SCHEDULE:

SUBMITTED BY: LaRon Garrett,  Public Works Dir.

AMOUNT BUDGETED: \$75,000.00

SUBMITTAL TO AGENDA
APPROVED BY TOWN MANAGER

EXPENDITURE REQUIRED: \$67,480.00

CONT. FUNDING REQUIRED: \$0



EXHIBITS (If Applicable, To Be Attached): Proposal Letter from Tetra Tech, Inc., Tentative Contract

POSSIBLE MOTION

I move to award the contract for updating the 1989 Water Master Plan to Tetra Tech, Inc., and authorize the Mayor to execute the contract documents substantially in the form presented.

SUMMARY OF THE BASIS FOR POSSIBLE MOTION:

Payson's first Water Master Plan was completed shortly after the Town acquired the water company in 1980. That master plan was updated in 1989. Since that time, this master plan has provided the parameters for improvements to the water system infrastructure. The 1989 update has served the Town well but we are nearing the end of its useful life. Over time all master plans need to be updated due to ongoing changes and major events. With the pending inflow of water from C. C. Cragin Reservoir, it is now time to update the Town's Water Master Plan. This update will explore what upgrades are necessary to the water system infrastructure to meet the Town's needs over the next 10 to 20 years and determine the best way to incorporate the added water flows into the system from the C. C. Cragin Reservoir. This update will also provide the Town with computer modeling capabilities to determine the effects of future changes to the system. The cost of the computer modeling software will be in addition to the cost of the master plan.

Tetra Tech, Inc. personnel are very familiar with the Town's existing water system and its capabilities. They currently provide a computer model of how any new subdivision they design will affect the existing system. Staff recommends award of this master plan contract to Tetra Tech, Inc. and authorization for the Mayor to execute the contract documents.

All costs associated with this Master Plan update will be paid for by the Water Department funds.

PROS: This update will allow the Water Department to continue to operate and expand the Town's water system in a systematic and efficient manner.

CONS: None

PUBLIC INPUT (if any): N/A

MAY 07 2009 I. L.*

COUNCIL DECISION REQUEST

BOARD/COMMITTEE/COMMISSION ACTIONS/RECOMMENDATIONS (if any) (give dates and attach minutes): N/A

FUNDING:

Acct: 661-5-5451-00-7900

Acct:

Acct:

FY
09/10

Budget: 90,000

Budget:

Budget:

Available: 90,000

Available:

Available:

Expense: 67480

Expense:

Expense:

Remaining: 22520

Remaining:

Remaining:

BY:

Hope Child

Date:

4-28-09



TETRA TECH

March 26, 2009

Mr. LaRon Garrett, P.E.
Public Works Director
Town of Payson
303 N. Beeline Hwy.
Payson, AZ 85541

Reference: Town of Payson Water Master Plan Update

Dear Mr. Garrett:

Tetra Tech, Inc. is pleased to present the attached proposed Scope of Services to prepare an update to the *Master Water Plan Update for Waterworks System Serving the Town of Payson*, dated December 1989, as prepared by Burgess & Niple, Inc. (Water Master Plan).

Attached for your review is a detailed Scope of Services and associated fee to update the Water Master Plan. Our proposed Scope of Services will encompass selection of an appropriate hydraulic modeling software, development of a detailed water distribution system hydraulic model, hydraulic modeling of the existing water distribution system under various scenarios including storage alternatives and fire flows, and the analysis of distributing outside sources of water through the existing distribution system. We are prepared to begin work on this project upon receipt of the signed agreement.

Thank you for your consideration of this Proposal. Please do not hesitate to contact me if you have any questions or need additional information.

Sincerely,

Garrett M. Goldman, P.E.
Engineering Director

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Attachments

**AGREEMENT
BETWEEN TETRA TETCH, INC.
AND THE TOWN OF PAYSON
FOR PROFESSIONAL SERVICES IN CONNECTION WITH
2009 WATER MASTER PLAN UPDATE**

THIS AGREEMENT entered into this ___ day of _____, 2009 by and between **Tetra Tech, Inc.**, 431 S. Beeline Highway, Payson, AZ 85541, (hereinafter referred to as the "Engineers and Architects" or "E/A") and the Town of Payson, a municipal corporation, located at 303 North Beeline Highway, Payson, Arizona 85541 (hereinafter referred to as "Client").

RECITALS

- A. Client desires to engage E/A to provide professional services; and
- B. Client finds that the proposed Scope of Services and terms of this Agreement are acceptable; and
- C. E/A desires to provide said services and agrees to do so for the compensation and upon the terms and conditions as hereinafter set forth.

NOW, THEREFORE, based upon the mutual promises, covenants and conditions herein contained, the Parties do hereby agree as follows:

Section 1. Terms and Conditions

- A. Employment of the E/A. Client hereby engages E/A and E/A hereby agrees to perform the professional services as set forth herein.
- B. Scope of Services. E/A shall perform, in a proper and professional manner, the services set forth in the Scope of Services, marked Attachment "A", attached hereto, and by this reference incorporated herein as though set forth in full at this point. The work is generally described as:

2009 update of the 1989 Water System Master Plan and incorporate the water flows from the C. C. Cragin Reservoir into the Town's infrastructure
- C. Time for Completion. The professional engineering report for updating the 1989 Water System Master Plan as defined in Attachment "A", Scope of Services, shall be completed within 180 calendar days from date of execution of this contract.
- D. Extra Services. E/A shall provide extra services, not specifically called for in Attachment "A", Scope of Services, upon request or authorization of the Client at a fee to be determined at the time of the request. However, it is the intent that the Scope of Services, with modifications by the E/A in the Special Provisions, if any, is complete and sufficient to accomplish the purposes of this Agreement.
- E. Changes. If Client has requested modifications or changes in the extent of the Project, the time of performance of the services of E/A and the compensation therefore shall be adjusted appropriately and shall be incorporated in written amendments to this Agreement. Notwithstanding the foregoing, E/A shall perform no modification, changes or additional work, except as and until authorized in writing by Client to do so.

F. Fees. Client shall pay E/A, for the services set forth in Attachment "A", Scope of Services, a lump sum fixed fee of Sixty Seven Thousand, Four Hundred Eighty Dollars and NO/100, (\$67,480.00).

G. Payment. E/A will submit to Client monthly invoices based on a percentage of work completed along with all reimbursable expenses incurred. Client will be responsible for paying the invoice in full within thirty (30) days of receipt. If Client fails to make any payment due E/A for services performed as set forth in Attachment "A", Scope of Services, within thirty (30) days after receipt of E/A's bill therefore the amounts due E/A shall include a charge at the rate of 1.50% per month from said day; and in addition E/A may suspend services under this Agreement until it has been paid in full all amounts due it for services and expenses. E/A shall be entitled to actual costs for remobilizing on any work suspended for thirty (30) days or more on account of non-payment or a substantial portion of the fee within the time prescribed in this Agreement.

H. Reimbursables. Unless otherwise stated in Attachment "A", Scope of Services, charges for out-of-pocket expenses not directly furnished by E/A will be paid by Client at a rate of 1.10 times the cost of such expense, up to a maximum of Five Hundred Dollars, excluding subconsultants, in addition to the amount set forth in paragraph 2 (F) herein above. E/A shall not be entitled for payment for printing or copying that occurs during the normal course of work required to accomplish the Scope of Services, except as authorized by the Client. Printing, binding, copying and deliveries of inspection reports, field notes and record drawings for the Client shall not be considered reimbursable.

I. Ownership and Re-Use of Documents. All documents, including original drawings, estimates, specifications, field notes, inspection reports, testing results, record drawings and data are and shall be the property of the Client, and shall be provided to the Client upon request during the term of this Agreement, and without demand at the conclusion of this Agreement. Client will not reuse the documents for any other project unless E/A has given written authorization to do so.

J. Delays Beyond the Control of the E/A. It is agreed that events which are beyond the control of the E/A may occur which may delay the performance of the Scope of Services of this Agreement. In the event that the performance of the Scope of Services by the E/A is delayed beyond its control, the E/A shall notify, in writing, the Client of such delay and the reason therefore, and Client shall extend the time of performance appropriately.

K. Liability of E/A. E/A shall be liable only for damage caused by negligence of it, its employees, sub-consultants or subcontractors. E/A shall notify Client of the engagement of any and all subcontractors or consultants, and client shall have sufficient and adequate opportunity to review the qualifications of such subcontractors or consultants, and shall have the right to approve or disapprove their engagement. Client requires subcontractors or consultants of the E/A shall provide appropriate certificates of insurance to the client prior to their performing of any work relating to this Agreement.

L. Problems. Any problems relating to the services provided herein are to be brought to the attention of E/A as soon as encountered and, if possible, before E/A incurs any obligations. E/A reserves the sole right to correct any errors it is responsible for, including, but not limited to, the selection of a subcontractor or sub-consultant and the negotiation of fees.

M. Indemnification. To the fullest extent permitted by law, the E/A shall defend, indemnify and hold harmless the Town of Payson, its agents, officers, officials and employees from and against all tortuous claims, damages, losses and expenses (including but not limited to attorney fees, court costs, and the cost of appellate proceedings), relating to, arising out of, or alleged to have resulted from the negligent acts, errors, mistakes or omissions of the E/A, its agents, employees, or any tier of E/A's sub-consultants in the performance of this Contract. E/A's duty to defend, hold harmless and indemnify the Town of Payson, its agents, officers, officials and employees shall arise in connection with any tortuous claim, damage, loss or expense that is attributable to bodily injury, sickness, disease, death or injury to, impairment, or destruction of property including loss of use resulting therefrom, caused by any E/A's negligent acts errors, mistakes, omissions, work or services in the performance of this Contract including any employee of the E/A, any tier of E/A's subcontractor or any other person for whose acts, errors, mistakes, omissions, work or services the E/A may be legally liable.

The amount and type of insurance coverage requirements set forth in Paragraph N herein will in no way be construed as limiting the scope of the indemnity in this paragraph.

N. Insurance. All insurance required herein shall be maintained in full force and effect until all work or service required to be performed under the terms of the Contract is satisfactorily completed and formally accepted; failure to do so may, at the sole discretion of the Town of Payson, constitute a material breach of this Contract.

The E/A's insurance shall be primary insurance as respects to the Town of Payson, and any insurance or self-insurance maintained by the Town of Payson shall not contribute to it.

Any failure to comply with the claim reporting provisions of the insurance policies or any breach of an insurance policy warranty shall not affect coverage afforded under the insurance policies to protect the Town of Payson.

The insurance policies, except Workers' Compensation, shall contain a waiver of transfer rights of recovery (subrogation) against the Town of Payson, its agents, officers, officials and employees for any claims arising out of the E/A's negligent acts, errors, mistakes, omissions, work or service.

The insurance policies may provide coverage which contain deductibles or self-insured retentions. Such deductible and/or self-insured retentions shall not be applicable with respect to the coverage provided to the Town of Payson under such policies. The E/A shall be solely responsible for the deductible and/or self insured retention and the Town of Payson, at its option, may require the E/A to secure payment of such deductibles or self-insured retentions by a Surety Bond or an irrevocable and unconditional letter of credit.

The insurance policies, except Workers' Compensation and Professional Liability, required by this Contract, shall name the Town of Payson, its agents, officers, officials and employees as Additional Insureds.

Required Coverage

General Liability.

\$1,000,000 / occurrence; \$2,000,000 aggregate.

Workers' Compensation. \$100,000 / accident; \$100,000 disease; \$500,000
disease limit
Professional Liability \$1,000,000 per claim.

Prior to commencing work or services under this Contract, E/A shall furnish the Town of Payson with Certificates of Insurance, or formal endorsements as required by the Contract, issued by E/A's insurer(s), as evidence that policies providing the required coverage's, conditions and limits required by this Contract are in full force and effect.

In the event any insurance policy(ies) required by this Contract is(are) written on a "claims made" basis, coverage shall extend for two years past completion and acceptance of the Contractor's work or services as evidenced by annual Certificates of Insurance.

If a policy does expire during the life of the Contract, a renewal certificate must be sent to the Town of Payson fifteen (15) days prior to the expiration date.

O. Termination of Contract. This Agreement may be terminated by either Party at any time upon thirty (30) days prior written notice to the other Party. Upon such termination, Client shall pay E/A all monies owed under this Agreement for all work performed up to the effective date of termination. Unless sooner terminated, this Agreement shall terminate fourteen (14) calendar days after completion of construction. In the event of such cancellation, all work performed by E/A up to that time, including but not limited to field information, studies and rough or final drafts of working papers, shall be delivered to the Client by E/A.

P. Publicity. No information relative to the Project shall be released by E/A for publication, advertising, or for any other purpose without the prior written approval of the Client.

Q. Supplementary Conditions. Supplementary Conditions, if any, shall apply to this Agreement, are set forth in Attachment "B", Supplementary Conditions which is attached hereto and incorporated herein by this reference as though set forth in full at this point.

R. Entire Agreement. This Agreement, with attachments, represents the entire understanding between Client and E/A in respect to the Project, all prior understanding and agreements are merged herein and this Agreement may only be modified by an instrument in writing executed with the same formalities as this instrument.

S. Successors and Assigns. Client and E/A each binds himself and his partners, successors, executors, administrators and assigns to the other party to this Agreement and to the partners, successors, executors, administrators and assigns of such other party, in respect to all covenants of this Agreement. Except as above, neither Client nor E/A shall assign, sublet or transfer its interest in this Agreement without the written consent of the other; however, E/A may employ others to assist him in carrying out its duties under this Agreement. Nothing herein shall be construed as giving any rights or benefits hereunder to anyone other than Client and E/A.

T. Business License. The Contractor shall provide the Town with a copy of its Town of Payson business license. If the Contractor is exempt from the Town's business licensing requirements, it shall still provide the Town with the items required under Section 110.03(C)-(D) of the Town Code.

U. Pursuant to A.R.S. §35-391.06, the Parties hereby warrant and represent that they do not have, nor any of their subcontractors have, and during the term of the Contract will not have a scrutinized business operation in ether Sudan or Iran.

V. Authorized Presence Requirements/Government Procurement (A.R.S. §41-4401).

V.1 Consultant and any Sub-consultant employed by Consultant warrants their compliance with all Federal immigration laws and regulations that relate to their employees and Arizona Revised Statutes Section 23-214(A).

V.2 A breach of the warranty under Section V.1 above shall be deemed a material breach of this Contract and shall be subject to penalties up to and including termination of the Contract.

V.3 The Town retains the legal right to inspect the papers of the Consultant or Sub-consultant who works on this Contract to ensure that the Consultant or Sub-consultant is complying with Section V.1.

W. Dispute Resolution. This Agreement shall be governed and construed in accordance with the internal laws of the State of Arizona. In particular, this Agreement is subject to the provisions of A.R.S. § 38-511, the terms of which are incorporated herein, and which provides for cancellation of contracts by the municipality for certain conflicts of interest. With the written consent of both Parties, any dispute, controversy, claim, or cause of action arising out of or related to this Agreement may, but in no event need, be settled by submission to binding arbitration in accordance with the rules of the American Arbitration Association and the Arizona Uniform Arbitration Act, A.R.S. § 12-1501, et seq. Judgment upon any award rendered by the arbitrator(s), if filed in Arizona Superior Court, shall be filed in the Superior Court of Gila County, Arizona; or any such dispute, controversy, claim, or cause of action may be litigated in the Superior Court of Gila County, Arizona. The venue for any such dispute shall be Gila County, Arizona, and both Parties consent in advance to such venue and jurisdiction and waive any right to object that Gila County is an inconvenient or improper forum based upon lack of venue. Neither Party shall be entitled to recover from the other party any of its attorneys' fees, costs, or expert witness fees incurred in any such dispute, controversy, claim, or cause of action, but each party shall bear its own attorneys' fees without contribution from the other party, whether the same is resolved through arbitration, litigation in a court, or otherwise.

WITNESS WHEREOF, E/A and Client have executed this Agreement on the day and year first above written.

Town of Payson
303 N. Beeline Highway
Payson, AZ 85541
Telephone: (928) 474-5242
FAX: (928) 474-7052

By: _____
Mayor

Attest: _____
Town Clerk

Tetra Tech, Inc.
431 S. Beeline Highway
Payson, AZ 85541
Telephone: (928) 474-4636
FAX: (928) 474-4867

By:

Title: _____

APPROVAL AS TO FORM

The Town of Payson Legal Department has reviewed this contract and approved it as to form. When reviewing this contract for form, the Legal Department considers whether the following situations have been addressed:

- I. Identification of parties;
- II. Offer and acceptance;
- III. Existence of contract consideration (we do not review to determine if consideration is adequate);
- IV. That certain provisions specifically required by statute are included (i.e., provisions concerning non-availability of funds and conflict of interest, A.R.S. § 38-511).

We have not reviewed the contract for other issues. Therefore, approval as to form should not be considered as approval of the appropriateness of the terms or conditions of the contract or the underlying transaction. In addition, approval as to the form should not be considered approval of the underlying policy considerations addressed by the contract.

Dated this _____ day of _____, 2009.

By _____
Samuel I. Streichman, Town Attorney

EXHIBIT 'A'
SCOPE OF SERVICES



TETRA TECH

TOWN OF PAYSON 2009 WATER MASTER PLAN UPDATE
PROPOSED SCOPE OF SERVICES

1. Project Management and Meetings

Tetra Tech will arrange and conduct a project kick-off meeting at the start of the project to meet with Town of Payson Staff. Additionally, Tetra Tech will conduct coordination, progress, and review meetings with the Town of Payson during the course of the project. 4 formal meetings are estimated, which equates to a meeting approximately every six weeks during the course of the estimated 6-month project schedule.

Fixed Fee \$ 8,285.00

2. Hydraulic Modeling Software Evaluation and Selection

Tetra Tech will evaluate and summarize up to three commercially available water distribution system hydraulic modeling software packages (Initially thought to be WaterCAD, H₂ONET, and EPANET). The evaluation will consider the technical capacity, ease of use, cost (initial and long term), and long term viability of each hydraulic modeling software package. Tetra Tech will arrange and conduct a one-half day workshop with Town of Payson Staff to present the hydraulic models and provide demonstrations of each model. It is anticipated that the Town of Payson will select a hydraulic model to use as the basis for this and future master planning efforts. The hydraulic modeling software will be purchased by the Town of Payson as a part of this project, used by Tetra Tech to develop the 2008 Master Plan, and then transferred back to the Town of Payson for routine maintenance of the Master Plan.

Fixed Fee \$ 3,600.00

3. Review Existing Reports and Data

Tetra Tech will review the data and reports prepared for projects within the Town of Payson subsequent to the 1989 Water Master Plan. The 1989 Water Master Plan will be used as the basis for preparing the 2008 Water Master Plan. The Town of Payson will provide historical water use data, current water system maps, and all individual subdivision design reports since the 1989 Water Master Plan.

Fixed Fee \$ 3,550.00

4. Service Area

The Master Plan will include a review of the land uses with the Town of Payson's service area. This includes reviewing the Town of Payson General Plan and Land Use Plan.

Population estimates for the Town of Payson's service area will be reviewed in five-year intervals for the first twenty years (2028) and then at ten-year intervals that extend into a



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fifty-year planning period (2058). Water demands will be updated accordingly. Population estimates will be prepared from the current Central Arizona Association of Governments (CAAG).

Fixed Fee \$ 2,675.00

5. Water Demands and Supply

Water demands will be reviewed and calculated based on data obtained during Task 3. The two primary methods of calculating water demands will include those based on land use categories and population. Billing data for the top five to ten water users in each commercial and industrial landuse category will be evaluated to determine water use for major water users in each category. Billing data and unaccounted-for water for each billing classification will be matched with corresponding Town of Payson land-use classifications to develop water duty factors. Daily and hourly water production data will be analyzed to develop maximum-day and peak-hour factors and to evaluate daytime vs. nighttime demands.

Fixed Fee \$ 5,325.00

6. Develop Hydraulic Model and Analyze Existing System

A hydraulic model of the Town of Payson water distribution and supply system will be developed using the software selected in Task 2. The distribution system analysis will consider each of the existing pressure zones for existing and ultimate demands based on the following scenarios: (1) average day with no fire flow; (2) maximum day with no fire flow; and (3) maximum day with fire flow.

The developed hydraulic model will be calibrated using field fire hydrant tests in each pressure zone. It is recommended that the Town of Payson Water Department conduct the hydrant tests to calibrate the model. SCADA system information will be required at the time of each test. The collected information would then be entered into the hydraulic model. The predicted model results would be compared with field results. Model characteristic data will be adjusted until model results match field results within an accepted tolerance.

A hydraulic analysis will be performed of the existing system using the calibrated hydraulic model. Average-day, maximum-day, and peak-hour demand simulations will be run to ascertain system performance and recommend improvements. Hourly demand factors will be entered into the model in order to run an extended period 24-hour system performance simulation. This simulation will also demonstrate daytime versus nighttime system performance requirements. All hydraulic deficiencies will be identified and will be prioritized in severity based on a defects ranking system.



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The calibrated model will be used to evaluate overall system performance and to make recommendations for improvements, i.e. possibly create a new pressure zone to improve system pressures or implement pressure sustaining valves or other control equipment at strategic locations, etc.

Fixed Fee \$18,800.00

7. Analyze Ultimate System Requirements

System demands in the ultimate system model will be developed from population, housing, and development forecasts. Ultimate demands will be input into the model. Average-day, maximum day, and peak-hour demand simulations will be run to ascertain system performance and recommend improvements. A system-wide fire-flow simulation will be run to determine available fire flow at a 20 psi residual pressure at maximum-day demand for all junctions in the system. The available fire flows will then be compared with land-use fire requirements to identify system deficiencies. Areas where water mains are too small or too large to provide adequate fire protections will be identified. Where too small, proposed water main replacements will be identified.

Extended period 24-hour system performance simulations will be run. Operational storage requirements will be evaluated in conjunction with various pumping schemes (including time of use schedules) to determine the optimum combination of storage and efficient pumping. Pumping energy requirements will be developed. The most efficient locations for reservoir storage needs will be evaluated in the model while also considering properties that might be available. System storage volume will be sized based on operational, fire, and emergency storage requirements.

Improvements to correct system deficiencies will be optimized through computer analysis. Alternatives for system improvements will be discussed with the Town of Payson. Cost estimates will be developed for each project identified in the Water Master Plan Update considering all project components including construction details, engineering, administration, and legal requirements. The projects will be prioritized considering project need and the availability of financial resources.

Fixed Fee \$ 6,270.00



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8. Analyze Storage Requirements

Storage requirements in reservoirs will be reviewed for operational storage, fire protection, and emergency storage. Operational storage will be dependent on when supply sources are operated. Fire supply and storage requirements by land-use classifications will be developed based on the Town of Payson Fire Department requirements. Emergency storage and supply will be evaluated as different supply outage scenarios including loss of imported water, and loss of power.

Fixed Fee \$ 2,675.00

9. Additional Water Supply Sources

The Town of Payson's existing water supply source is solely dependent on groundwater wells. Analyses will be performed considering the effects of importing water from the CC Cragin Reservoir into the existing Town of Payson water distribution and storage system. The analyses will consider the ability to serve all pressure zones in the existing system, required storage, hydraulic capacity of the existing system to transfer imported water throughout the system, and recommended improvements to the existing distribution and storage system to efficiently utilize the imported water.

Fixed Fee \$ 7,200.00

10. Prepare Water Master Plan Report

A comprehensive Water Master Plan report will be prepared that addresses all aspects of the project in a thorough and orderly manner through text, tables, graphs, figures, and maps. An Appendix will be included to provide supporting technical calculations and computer input/output results. Ten (10) copies of the 75-percent draft and ten (10) copies of the 95-percent draft report and supporting documents will be submitted to the Town of Payson for review and comments. At the 75-percent report completion, a presentation on the project status will be made to the Town of Payson. Twenty-five (25) copies of the Final Water Master Plan Update will be submitted at the completion of the project that will incorporate the Town of Payson's comments from the draft report submittals. The final report will also be delivered in a Microsoft Word document, along with the input and output model data from the hydraulic analysis computer program and maps prepared using AutoCAD.

Fixed Fee \$ 9,100.00

Total Fixed Fee \$67,480.00

EXHIBIT 'B'
SUPPLEMENTARY CONDITIONS

NONE