

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

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October 24, 1983

City of Redlands
30 Cajon Street
P. O. Box 280
Redlands, California 92373

Attention: Mr. John Donnelly
 Public Works Director

Subject: Engineering Services Agreement for Design and Construction
 Related Services for the Proposed Agate Water Treatment Plant

Gentlemen:

James M. Montgomery, Consulting Engineers, Inc. (JMM) proposes to perform the following work under the terms and conditions as outlined herein:

A. SCOPE

It is mutually agreed that the work authorized and described herein is that work necessary to provide engineering services related to design and construction of a 12 million gallon per day (mgd) (design capacity) water treatment plant on a site to be identified jointly by JMM and the City of Redlands (CITY). It is further agreed that the proposed facility will be designed such that, under emergency conditions, it could be operated at a rate of up to 16 mgd and that future expansion to a capacity of 24 mgd will be considered during the current design. The proposed plant site will be selected from one of three alternative sites located adjacent to Bear Valley Mutual Water Company's Redlands Aqueduct and between the CITY's existing three million gallon Agate reservoir and the Bear Valley Mutual Water Company Sandbox. This contract authorizes only those engineering services necessary for the preparation of a Design Report for the proposed facilities and Detailed Design of those treatment facilities. Pipeline design, Construction Services, Project Close Out services and any other related services may also be authorized by the CITY at a later date.

1. PHASE I - PRELIMINARY DESIGN

Task 1 - Preparation of Design Report

- 1.1 Summarize Water Quality. Collect and evaluate available historical raw water quality data for Santa Ana River and State Project Water that may be expected at the proposed treatment facility. Water quality parameters critical to this evaluation include turbidity, color, tastes and odors,

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asbestos fiber levels, alkalinity, pH, coliform counts, corrosion potential and total potential trihalomethane (THM) formation levels. All of these parameters can directly impact recommendations on treatment processes, water treatment chemicals and operational plans for the plant.

- 1.2 Establish treated water quality goals. These goals will be based upon historical raw water quality and State and Federal water quality standards.
- 1.3 Analyze alternatives and select site. Review three alternative plant sites with CITY staff and recommend selection of best alternative. Site selection will be based on hydraulic, economic and operational considerations.
- 1.4 Develop alternative treatment process schemes that will meet the established treated water quality goals.
- 1.5 Perform bench and pilot-scale investigations (if required). This work would only be conducted if the option of direct filtration is pursued for the proposed facility. Scope and fees for these services will be negotiated at the time when their need is demonstrated.
- 1.6 Select the most appropriate treatment process alternative. Selection will be based upon pilot or bench-scale results (if conducted), estimated construction costs, operation and maintenance costs, previous experience with treatment of State Project and local water, and JMM's knowledge of water treatment technology. Process selection will be dependent upon Health Department approval and will incorporate CITY recommendations.
- 1.7 Establish detailed design criteria for the treatment process alternative selected including:
 - (a) Detailed hydraulic design criteria including plant hydraulic profile at 12 mgd.
 - (b) Establish unit process design criteria including:
 - (1) loading rates
 - (2) chemical dosages
 - (3) number of units
 - (4) tank sizes
 - (5) sludge volumes and disposal
 - (c) Establish preliminary design concepts and criteria for instrumentation and control systems.

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- (d) Estimate operational requirements including labor, chemical, and energy.
 - (e) Assess and present any special construction features that may be required.
 - (f) Prepare preliminary layouts of major treatment units and Operation and Control building.
- 1.8 Provide preliminary survey and geotechnical investigations for the recommended plant site.
 - 1.9 Develop an operational scheme for the plant and review with CITY staff. This operational scheme will be formulated based upon fluctuations in raw water quality and the amount of plant flexibility to be provided.
 - 1.10 Review system hydraulics and discuss with CITY staff in order to optimize treated water delivery to the distribution system. Pipelines to be considered include influent and effluent lines parallel to the existing Redlands Aqueduct as well as delivery lines to the distribution system.
 - 1.11 Develop project construction costs and operation and maintenance costs. The operation and maintenance costs developed will be reflective of the treatment plant operational plan mentioned above.
 - 1.12 Examine logical options for expediting construction of the project such as prepurchase of major equipment items and developing separate construction contracts for major system components.
 - 1.13 Prepare detailed project schedules.
 - 1.14 Hold periodic progress meeting with CITY Staff to discuss project concepts and criteria.
 - 1.15 Prepare Draft Design Report summarizing the information, analysis and findings developed in the above Tasks.
 - 1.16 Submit five (5) copies of Draft Design Report to the CITY for review.
 - 1.17 Review CITY comments and revise Draft Design Report.
 - 1.18 Submit twenty (20) copies of final Design Report to the CITY.

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- 1.19 Perform necessary liason functions between the CITY and the State Health Department. It is envisioned that two meetings will be required to update local and State Health Department officials on the progress of the overall project.

2. PHASE II - DETAILED DESIGN

Task 1 - Preparation of Plans and Specifications - Treatment Plant

- 1.1 Prepare working drawings and detailed specifications for the construction of a 12 mgd water treatment plant including all forms necessary for receiving competitive bids. It is expected that the facilities to be designed and included in one set of contract documents will consist of:
 - (a) Plant flow metering facility
 - (b) Hydraulic flash mixer
 - (c) Flocculation basins
 - (d) Sedimentation basins
 - (e) Filters
 - (f) Solids handling facilities
 - (g) Control building
 - (h) Chemical feed and storage facilities
 - (i) Associated electrical, instrumentation and control systems including alarm telemetry
 - (j) Access roads, landscaping, and yard piping.
- 1.2 Prepare final cost and quantities estimate at submission of final plans and specifications.
- 1.3 Reproduce plans, specifications and other documents prepared by JMM as required to obtain approval of agencies having jurisdiction and for bidding and construction of the project. A maximum of 100 sets of half-size plans and specifications and 10 sets of full-size blueprints shall be prepared for each contract document.
- 1.4 Attend necessary meetings for project coordination and review. Estimate of meetings is as follows:

City of Redlands	(8)
State Health	(2)
Others	(2)

Task 2 - Preparation of Plans and Specifications - Pipelines

- 2.1 Based on the recommendations contained in the Design Report described in Phase I, JMM will provide working

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drawings and detailed specifications for the construction of plant influent, effluent and distribution system supply pipelines including all forms necessary for receiving competitive bids. It is expected that pipeline construction (other than plant yard piping) will be designed and included in a separate set of contract documents.

- 2.2 Prepare final cost and quantities estimate at submission of final plans and specifications.
- 2.3 Reproduce plans, specifications and other documents prepared by JMM as required to obtain approval of agencies having jurisdiction and for bidding and construction of the project. A maximum of 100 sets of half-size plans and specifications and 10 sets of full-size blueprints shall be prepared for each contract document.

Task 3 - Bid Period

- 3.1 Assist the CITY in advertisement for bids.
- 3.2 Prepare plans and specifications addenda.
- 3.3 Handle requests for interpretation of plans and specifications from potential bidders.
- 3.4 Attend pre-bidding conferences and bid openings.
- 3.5 Analyze results of bidding and make recommendations for awarding construction contract.

3. PHASE III - SERVICES DURING CONSTRUCTION

If requested, the following services would be provided:

Task 1 - Field Engineering Services

- 1.1 Provide a full-time resident engineer and, as required, a resident inspector to properly monitor construction of the facilities. All inspection work shall be done under the direct supervision of JMM.
- 1.2 Provide mill and shop inspection.
- 1.3 Upon arrival at the plant site, inspect any major equipment purchased directly by the CITY.
- 1.4 Perform material sampling and testing.
- 1.5 Prepare daily reports of construction activity.

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Notwithstanding any inferences, references, or omissions to the contrary contained within this proposal, the CITY understands that JMM shall not direct any contractors, subcontractors, etc., at the jobsite. JMM's duties relative to field observations shall be understood to amount to "inspection" or "monitoring" only in accordance with the requirements as set forth under codes of various municipal, state, and other regulatory bodies, and it is hereby agreed that JMM will assume no obligation for any acts, errors, or omissions of parties other than JMM.

Task 2 - Support Office Services

- 2.1 Review shop and working drawings of fabricated materials and manufactured equipment submitted by contractors and suppliers for substantial conformance with the intent of the plans and specifications. Copies approved by JMM shall be forwarded to the CITY.
- 2.2 Make periodic visits to the site of the work by office engineering personnel as necessary during construction.
- 2.3 Interpret the plans and specifications, including the preparation of elementary sketches if required to clarify design details.
- 2.4 Provide reasonable and customary assistance as required and requested in connection with the testing of the facilities.
- 2.5 Make final inspection of the construction project in company with CITY's representatives to ascertain substantial compliance by the contractors with the requirements of the plans and specifications.
- 2.6 Provide Record Drawings to CITY reflecting any changes noted during construction and provided by Contractor.

Task 3 - Contract Administration

- 3.1 Conduct preconstruction meetings.
- 3.2 Prepare Contractor's Manual, which will include names, telephone numbers, approval and reporting procedures, forms to be utilized and similar information.
- 3.3 Review and monitor supply and construction contract schedules.
- 3.4 Review and approve contractors' bid breakdowns and estimates for progress and final payments both to

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contractors and to suppliers under direct contract with CITY and submit copies of recommended payments to CITY.

- 3.5 Maintain a status list of prepurchased equipment.
- 3.6 Prepare monthly summary reports of construction activity.
- 3.7 Negotiate change orders with the contractors, make recommendations to the CITY concerning change orders, and process them after approval.

4. PHASE IV - PROJECT CLOSE OUT

Task 1 - Operation and Maintenance Manual

- 1.1 Prepare an Operation and Maintenance Manual setting forth the method of operating the treatment plant and appurtenance facilities, and describing a preventive maintenance program for equipment and materials, five copies of which shall be furnished to the CITY.
- 1.2 Organize all equipment manufacturers' technical literature into bound volumes, five copies of each to be supplied to the CITY.

Task 2 - Plant Start-up

- 2.1 Direct start-up of facilities completed in Phase III.
- 2.2 Review performance of major equipment under the contractor's guarantee.

Task 3 - Operator Training

- 3.1 Conduct operator training sessions with CITY's operational staff.
- 3.2 Prepare training schedule and text. (It is envisioned that the O&M Manual will be used as a textbook for the training sessions.)

5. SPECIAL SERVICES

- (a) Use of JMM's Digital Equipment Corporation VAX 11/780 computer and programs where such use is deemed necessary for efficient prosecution of the engineering effort.
- (b) Provide analytical services for water and wastewater constituents in JMM's Water Quality Laboratory.

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6. ADDITIONAL SERVICES

If requested or required, the following Additional Services will be provided.

- (a) Perform bench and pilot-scale investigations as required. Pilot-scale investigations will only be conducted if direct filtration appears feasible after analysis of water quality data and discussions with State Health Department officials. Precise scope of work and additional fee requirements for conduct of pilot studies would be formulated based upon requirements outlined by the State Health Department.
- (b) Perform work resulting from changes in design criteria made at the direction of the CITY after acceptance of the criteria.
- (c) Prepare applications and supporting documents for government grants or loans for public projects.
- (d) Provide additional services resulting from the delinquency or insolvency of one or more of the contractors; or as a result of damage to the construction projects caused by fire, flood, earthquake, or other acts of God.
- (e) Provide additional services resulting from strikes, walkouts, or other acts of trade or labor unions.
- (f) Provide Construction Management Services other than those described in the scope of work herein.
- (g) Perform any other items of work not specifically mentioned above.

B. PROJECT PERSONNEL

JMM will utilize the following individuals in key positions during the prosecution of work described under Phase I and Phase II of Section A, Scope:

Principal-in-Charge:	Philip Gatsoulis
Project Manager:	Susumu Kawamura
Project Engineers:	Brian L. Ramaley Robert C. Siemak

These personnel and positions will not be changed prior to notification of and approval by the CITY.

C. CITY-FURNISHED SERVICES

The CITY shall furnish all existing maps of the proposed site, information on existing facilities (including downstream reservoirs, pump stations,

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aqueducts, etc.) and shall provide all available pertinent data and information necessary for design of the proposed treatment plant and any necessary pipelines.

D. FEES AND CONDITIONS

1. It is mutually agreed upon by the CITY and JMM that this executed agreement constitutes authorization for preparation by JMM of a Design Report and Detailed Design as described under Phase I, and Tasks 1 and 3 of Phase II, in Section A, Scope.
2. Based on our present knowledge of the work described herein, the estimated fee budget for Phase I work is \$60,000. The fee for Tasks 1 and 3 of Phase II work is \$548,000; this amount will not be exceeded without prior written authorization.
3. Work described in the Scope for Phase I, Task 1 would be completed within an estimated 120 calendar days after receiving notice to proceed. At that time, the draft copy of the Design Report will be submitted to the CITY for review. Within 30 days of receipt of CITY comments, 20 copies of the final report would be submitted to the CITY. Detailed design will commence within 15 days of submittal and approval by the CITY of the final report and will be completed within an estimated 240 calendar days.
4. Work described under Phase II (Task 2), Phase III, and Phase IV of the Scope may be authorized through amendment to this contract as mutually agreed upon by JMM and the CITY. Fees for services provided by JMM for these additional Tasks would be as mutually agreed upon by JMM and the CITY at the time of authorization.
5. Work performed by JMM under Phases I, II, III and IV as described in the Scope, will be provided on a salary cost-plus basis in accordance with the following:
 - 5.1 The fee for services will be based on salary cost plus 130 percent of said salary costs. Salary cost is the cost of salaries (including sick leave, vacation, holiday and incentive pay) of personnel for time directly chargeable to the project; plus unemployment, excise, and payroll taxes; contributions for social security, employment compensation insurance, retirement, medical and insurance benefits and for the purpose of this project, salary costs are defined as 1.3 times actual payroll. Non-salary expenses directly attributable to the project like (1) living and travel expenses of employees when away from the home office on business connected with the project, (2) identifiable communication expenses, (3) identifiable drafting and stenographic supplies and expenses, and (4) identifiable reproduction costs applicable to the work will be charged at

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actual cost plus 15 percent service charge. For use of VAX 11/780 computer, word processors, etc., fees will be in accordance with the most recent fee schedule. For services provided by JMM's approved water quality laboratory, fees will be in accordance with the most recent laboratory fee schedule.

- 5.2 The fee for Outside Services will be at actual cost plus 15 percent of actual cost to cover overhead and administration.
- 5.3 Payment shall be due within 30 days after date of monthly invoice describing the work performed and expenses incurred during the preceding month.
- 5.4 In order to defray carrying charges resulting from delayed payments, simple interest at the rate of eighteen percent (18%) per annum (but not exceeding the maximum rate allowed by law) will be added to the unpaid balance of each invoice. The interest period shall commence 30 days after date of original invoice and shall terminate upon date of payment. Payments will be first credited to interest and then to principal. No interest charge will be added during the initial 30-day period following date of invoice.
6. The work will be commenced immediately upon receipt of notice to proceed. If after commencement of work the project is delayed for any reason beyond the control of JMM for more than 60 days, the terms and conditions contained herein are subject to revision.
7. **BOOKS OF ACCOUNT.** JMM will maintain books and accounts of payroll costs, travel, subsistence, field and incidental expenses. Said books will be available at all reasonable times for examination by the CITY at the Corporate office of JMM.
8. **INSURANCE**
 - 8.1 JMM will maintain insurance as will protect the CITY from claims under the Worker's Compensation Laws and from General Liability claims for bodily injury, or death, or property damage which may arise from the negligent performance by its employees in the functions and services required under this Agreement.
 - 8.2 JMM agrees to maintain Professional Liability insurance to protect the CITY from JMM's negligent acts, errors or omissions of a professional nature; the total aggregate of JMM's professional liability, however, to all parties related

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to this Agreement shall not exceed \$50,000 or the total amount of JMM's fee, whichever amount is greater.

9. **DOCUMENTS.** All tracings, survey notes, and other original documents as instruments of service are and shall remain the property of JMM, except where by law or precedent these documents become public property. The CITY agrees to hold harmless, indemnify and defend JMM against all damages, claims, expenses and losses arising out of any reuse of the plans and specifications without the written authorization of JMM.
10. **TERMINATION OR ABANDONMENT.** If any portion of the work is terminated or abandoned by the CITY then the provisions of this Schedule of Fees and Conditions in regard to compensation and payment shall apply insofar as possible to that portion of the work not terminated or abandoned. If said termination occurs prior to completion of any phase of the project, the fee for services performed during such phase shall be based on JMM's reasonable estimate of the portion of such phase completed prior to said termination, plus a reasonable amount to reimburse JMM for termination costs.
11. **REVISION OF TERMS.** If notice to proceed is delayed for any reason beyond 60 days, the terms and conditions contained in this schedule are subject to revision.
12. **ATTORNEY'S FEES.** If either party becomes involved in litigation arising out of this contract or the performance thereof, the court in such litigation shall award reasonable cost and expenses, including attorney's fees to the party justly entitled thereto. In awarding attorney's fees, the court shall not be bound by any court fee schedule, but shall, if it is in the interest of justice to do so, award the full amount of costs, expenses, and attorney's fees paid or incurred in good faith.
13. **SUCCESSORS AND ASSIGNS.** All of the terms, conditions, and provisions hereof shall inure to the benefit of and be binding upon the parties hereto and their respective successors and assigns provided, however, that no assignment of the contract shall be made without written consent of the parties to the agreement.

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If the above proposal meets with your approval, it may serve as the basis for agreement by affixing the signatures in the spaces provided below.

Respectfully submitted,

JAMES M. MONTGOMERY,
CONSULTING ENGINEERS, INC.

By:


Susumu Kawamura
Vice President

By:


Philip Gatsoulis
Vice President

Accepted by:

CITY OF REDLANDS

By:


City Manager

10-27-83

Date