RESOLUTION NO. ______
RESOLUTION OF THE COUNCIL OF THE CITY OF PALO ALTO
ESTABLISHING ONE OR MORE DEDICATED SOURCES OF
REVENUE FOR REPAYMENT OF FUNDING PURSUANT TO
THE FEDERAL CLEAN WATER ACT AMENDMENTS

WHEREAS, the CITY OF PALO ALTO (the "Agency") desires to finance the costs
of constructing and/or reconstructing certain public facilities and improvements relating to its
water and wastewater system, including certain treatment facilities, pipelines and other
infrastructure (the "Project"); and

WHEREAS, the Agency intends to finance the construction and/or reconstruction of
the Project or portions of the Project with moneys ("Project Funds") provided by the State of
California, acting by and through the State Water Resources Control Board (the "Water Board"); and

WHEREAS, Section 603(d)(1)(C) of the Federal Clean Water Act Amendments
require each financing recipient to establish one or more dedicated sources of revenue for State
Revolving Fund (SRF) assistance; and

WHEREAS, Revenue will be considered dedicated when the municipality passes a
resolution committing a source of funds for repayment.

NOW, THEREFORE, the Council of the City of Palo Alto does RESOLVE as
follows:

SECTION 1. The City of Palo Alto hereby dedicates the following source of
revenue (Regional Water Quality Control Plant Operating Fund) to repayment of any and all
State Revolving Fund financing on Project No. C-06-5044-110. The operating fund will be
funded by sewer user fees. This dedicated source of revenue

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shall remain in effect throughout the term of such financing unless modification or change of such dedication is approved in writing by the State Water Resources Control Board.

INTRODUCED AND PASSED:

AYES:

NOES:

ABSENT:

ABSTENTIONS:

ATTEST:

______________________________
City Clerk

______________________________
Mayor

APPROVED AS TO FORM:

______________________________
Senior Asst. City Attorney

______________________________
City Manager

______________________________
Director of Public Works

______________________________
Director of Administrative Services

APPROVED:
RESOLUTION NO
RESOLUTION OF THE COUNCIL OF THE CITY OF PALO ALTO
ESTABLISHING A WASTEWATER CAPITAL RESERVE FUND IN
ACCORDANCE WITH THE STATE WATER RESOURCES
CONTROL BOARD'S REQUIREMENTS OF THE STATE
REVOLVING FUND PROGRAM

WHEREAS, the Council of the City of Palo Alto (the “Agency”) authorized the City
Manager to apply for State Revolving Fund (SRF) financing to fund all or a portion of the cost of
expansion and improvement of its water and wastewater system (Project No. C-06-5044-110),
including certain treatment facilities, pipelines and other infrastructure (the “Project”); and

WHEREAS, the State Water Resources Control Board requires, as a condition of
approval of the financing, the establishment of a Wastewater Capital Reserve Fund for future
expansion, major repair or replacement costs;

NOW, THEREFORE the Council of the City of Palo Alto does RESOLVE as
follows:

SECTION 1. A dedicated Wastewater Capital Reserve Fund exists, and,

SECTION 2. Said Wastewater Capital Reserve Fund shall be administered by the
Agency as required by the “Policy for Implementing The State Revolving Fund for Construction
of Wastewater Treatment Facilities” adopted by the State Water Resources Control Board on
SECTION 3. The Council finds that the adoption of this resolution does not constitute a project under the California Environmental Quality Act, California Public Resources Code section 21080, subdivision (b)(8).

INTRODUCED AND PASSED:

AYES:

NOES:

ABSTAIN:

ABSENT:

ATTEST:

______________________________  
City Clerk  

______________________________  
Mayor

______________________________  
Deputy City Attorney

______________________________  
APPROVED AS TO FORM:

______________________________  
APPROVED:

______________________________  
City Manager

______________________________  
Director of Public Works

______________________________  
Director of Administrative Services Department

080205 jb 0130261
CITY OF PALO ALTO

Memorandum

TO: HONORABLE CITY COUNCIL
FROM: CITY MANAGER
DATE: AUGUST 6, 2007
DEPARTMENT: PUBLIC WORKS
CMR: 322:07

SUBJECT: ADOPTION OF A RESOLUTION AUTHORIZING THE CITY MANAGER TO FILE AN APPLICATION FOR A STATE REVOLVING FUND LOAN IN AN AMOUNT NOT TO EXCEED $25,000,000 AND APPROVAL OF WASTEWATER TREATMENT ENTERPRISE FUND AMENDMENT NO. 1 TO CONTRACT NO. C06116829 WITH RMC WATER & ENVIRONMENT IN THE AMOUNT OF $1,000,000 FOR DESIGN SERVICES FOR THE ULTRA-VIOLET DISINFECTION SYSTEM AT THE REGIONAL WATER QUALITY CONTROL PLANT – CAPITAL IMPROVEMENT PROGRAM PROJECT #WQ-06014

The above-referenced City Manager’s Report (CMR:322:07) was distributed to the Council in the July 30, 2007 packet.

J. MICHAEL SARTOR
Acting Director of Public Works

EMILY HARRISON
Assistant City Manager
TO: HONORABLE CITY COUNCIL
FROM: CITY MANAGER
DATE: JULY 30, 2007

DEPARTMENT: PUBLIC WORKS

SUBJECT: ADOPTION OF A RESOLUTION AUTHORIZING THE CITY MANAGER TO FILE AN APPLICATION FOR A STATE REVOLVING FUND LOAN IN AN AMOUNT NOT TO EXCEED $25,000,000 AND APPROVAL OF ENTERPRISE FUND AMENDMENT NO. 1 TO CONTRACT NO. C06116829 WITH RMC WATER & ENVIRONMENT IN THE AMOUNT OF $1,000,000 FOR DESIGN SERVICES FOR THE ULTRA-VIOLET DISINFECTION SYSTEM AT THE REGIONAL WATER QUALITY CONTROL PLANT – CAPITAL IMPROVEMENT PROGRAM PROJECT #WQ-06014

RECOMMENDATION
Staff recommends that Council:

1. Adopt the attached resolution (Attachment A) authorizing the City Manager or his designee to apply for a State Revolving Fund (SRF) loan in an amount not to exceed $25,000,000 for the construction of an ultra-violet (UV) disinfection system.

2. a) Authorize the City Manager or his designee to execute Amendment 1 (Attachment B) to contract #C06116829 with RMC Water & Environment (RMC) in the amount of $1,000,000 for the design services of the UV disinfection system for the Regional Water Quality Control Plant (RWQCP). The amended contract amount would total $1,299,940.
   b) Authorize the City Manager or his designee to negotiate and execute one or more change orders to the contract with RMC for additional meetings, value engineering, permit assistance, and special services identified in Exhibit B of the contract, the total value of which shall not exceed $350,000.

BACKGROUND
The RWQCP began planning for a sustainable future with the initiation of the Long-Term Goals Study (LTGS) in 2000. Through a series of workshops, the RWQCP and stakeholders established a set of goals for the Plant that meets the environmental and socio-economic needs of the member communities. The UV disinfection system was the focus of the LTGS because of its use of hazardous chemicals, and was identified for change as the first step towards sustainability. Subsequent studies and workshops with the stakeholders concluded that UV disinfection presents the most viable alternative to replace the existing chemical disinfection system. On June 19, 2006 (CMR:266:06), Council authorized RMC to prepare the UV Facility Plan to assess the feasibility of implementing a UV disinfection system to replace the existing disinfection system at the RWQCP. The executive summary of the Plan is Attachment C.
DISCUSSION
The UV Facility Plan (Plan) builds upon the work done in previous studies, primarily the LTGS and subsequent studies that spanned a period of several years. Two alternative projects were evaluated by the Plan. Alternative 1 would replace the existing disinfection system with UV disinfection. Alternative 2 would maintain the existing chemical disinfection at the RWQCP. The Plan includes life-cycle environmental and economic review of the UV alternative versus maintaining the existing chemical alternative, as well as technical analyses and the pre-design of the UV system. The life-cycle assessment took into account manufacturing, processes, and transportation associated with each alternative. As summarized in the table below, the UV alternative releases fewer toxins, consumes less energy, and lowers the RWQCP’s greenhouse gas emissions.

<table>
<thead>
<tr>
<th></th>
<th>UV Disinfection Alternative</th>
<th>Existing Chemical Disinfection Alternative</th>
</tr>
</thead>
<tbody>
<tr>
<td>THMs (lb)</td>
<td>0</td>
<td>1570</td>
</tr>
<tr>
<td>NDMA (lb)</td>
<td>0</td>
<td>8</td>
</tr>
<tr>
<td>Dioxin TEQ (lb)</td>
<td>$1.3 \times 10^{-7}$</td>
<td>$5.6 \times 10^{-7}$</td>
</tr>
<tr>
<td>Cyanide (lb)</td>
<td>0</td>
<td>190</td>
</tr>
<tr>
<td>Mercury (lb)</td>
<td>$1.4 \times 10^{-3}$</td>
<td>$1.0 \times 10^{-3}$</td>
</tr>
<tr>
<td>Ammonia (lb)</td>
<td>0</td>
<td>57,000</td>
</tr>
<tr>
<td>Greenhouse Gas, CO2 (lb/yr)</td>
<td>1,171,523</td>
<td>4,002,490</td>
</tr>
<tr>
<td>Energy Consumption (kWh)</td>
<td>1,180,000</td>
<td>3,823,000</td>
</tr>
<tr>
<td>20-year present worth costs</td>
<td>$26,950,000</td>
<td>$12,556,000</td>
</tr>
</tbody>
</table>

Minimization of chemical use and emissions of toxins are the core elements of the RWQCP long-term goals. The Council, at its January 2007 meeting, directed staff to reduce materials as soon as possible to Sub-Title 19 thresholds. Implementation of the UV facility project will accomplish both goals. In addition to reduction of toxins, the UV alternative also offers higher reliability, fewer regulatory risks, and fewer risks of safety and health impact. While the economic cost of UV treatment is greater than traditional chemical treatment, in view of the many environmental and social advantages of UV disinfection, staff believes the higher cost is justified.

Pursuing State and Federal low-interest loan and grants could minimize the financial impacts of the project on rate-payers. Staff has made presentations to the State Water Resources Control Board (SWRCB) on the UV facility project. The project is listed on the SWRCB priority list for a low interest State Revolving Fund (SRF) loan. Council authorization is a required part of the loan application and must be submitted to the SWRCB before the application will be considered. Once the application is submitted, there are several steps in the loan process that must be completed, and Council will be making decisions in the subsequent steps, including the actual loan amount, before the final loan approval by the SWRCB. Staff will return to Council as the loan process progresses.

The UV disinfection facility is required to have sufficient capacity to treat the high wet-weather flow that occurs each winter. During the lower flow summer months, the RWQCP plans to use
the unneeded UV capacity to generate additional recycled water to match the peak summer irrigation requirement. This expanded recycled water capacity qualifies the RWQCP for a State grant under the Water Recycling Program. Staff is monitoring State and Federal grants for the project and will report to Council when the grant application process commences.

For the SRF loan and potential grant from the SWRCB, readiness to proceed is the highest-ranking criteria for consideration of an award. Staff recommends proceeding with the design of the UV system immediately to position the project favorably for financial assistance. The cost for the design is retroactive for financial assistance. Under the basic contract, RMC completed the UV Facility Plan. Amendment I would require RMC to perform the design services for the UV facility including the backup system and auxiliaries.

Summary of Solicitation Process
A request for proposal (RFP) for the UV facility planning and the design services was sent to nine consulting firms on April 10, 2006. The firms were given 29 days to respond to the request. Two proposals were received on May 9, 2006. Those firms not responding indicated that they did not submit a proposal because they are busy on other projects.

An evaluation committee consisting of representatives from the City of Los Altos, a Palo Alto resident representing the stakeholders, and staff from Environmental Compliance and the RWQCP reviewed the proposals and interviewed both firms. The committee carefully reviewed each firm's qualifications and submittal in response to the RFP relative to the following criteria: specialized experience, past performance, qualifications, understanding of project goals, ability to work with the public, familiarity with funding requirements, and other criteria. RMC was selected because of its qualifications and experience, and the team communicated the best understanding of the issues, challenges, and objectives of the project.

Council awarded the contract in an amount of $299,940 to RMC for the initial planning services. In addition, the RFP provided that the contract could be modified to include additional detailed design services. Staff recommends amending the contract with RMC for those additional design services for the following reasons:

- RMC’s proposed design team has completed six UV facility design projects and has very good experience in the design and construction of UV facilities. Such record is impressive since there are less than a handful of design firms that has a history of successful wastewater UV design experience in the Bay area.
- RMC showed clear understanding of the project issues including funding requirements. RMC’s past records indicate that they would be instrumental to the State and Federal funding processes.
- RMC has worked with the stakeholders and regulatory agencies on the facility plan. Their design team would provide continuity from planning to implementation for the project.
- RMC’s proposed fee is competitive for the type, amount, and complexity of work. The following table provides a comparison of the design fee as a percentage of construction costs for UV system projects in the Bay Area.
<table>
<thead>
<tr>
<th>Agency</th>
<th>Construction Cost</th>
<th>Design Fee</th>
<th>Design/construction cost %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Watsonville Treatment Plant</td>
<td>$24.7 million</td>
<td>$1.89 million</td>
<td>7.65%</td>
</tr>
<tr>
<td>Novato Wastewater Treatment Plant</td>
<td>$66.4 million</td>
<td>$4.04 million</td>
<td>6.1%</td>
</tr>
<tr>
<td>Proposed RWQCP UV system</td>
<td>Est. $18.6 million</td>
<td>Proposed $1 million</td>
<td>5.4%</td>
</tr>
</tbody>
</table>

**RESOURCE IMPACT**
Funds for this contract have been appropriated under the FY 2007-2008 Wastewater Treatment Capital Improvement Program Project WQ-06014.

The design could lead to subsequent implementation of the UV system. The construction cost of the UV project is currently estimated at $18.6 million. With a low-interest SRF loan, the annualized cost of the project (design plus construction costs with no grant funding) would be approximately $1.4 million for twenty years, which would be partially offset by operational savings. Staff will return with cost details when the design is finalized.

**TIMELINE**
- Submit SRF loan application package: August 2007
- Start design: August 2007
- State approval of SRF loan: August 2008
- Construction start: November 2008
- Full facility on-line: August 2009

**POLICY IMPLICATIONS**
Recommendations of this staff report are consistent with City Council’s Sustainability Policy, by reducing toxins discharge and greenhouse gas emissions.

**ENVIRONMENTAL REVIEW**
The Palo Alto Department of Planning and Community Environment determined that the project is a replacement facility, which is categorically exempt from the California Environmental Quality Act (CEQA) review pursuant to section 15302 of the California Code of Regulations Guidelines for implementation of CEQA.

**ATTACHMENTS**
- Attachment A: Resolution
- Attachment B: Amendment No. 1 to Contract C06116829 with RMC Water & Environment
- Attachment C: Executive Summary

Copies of the attachments to this CMR:322:07 may be viewed at the Public Works Department counter located at 250 Hamilton Avenue, 6th Floor, Palo Alto or by contacting Senior Engineer Daisy Stark at 650-329-2287.
RESOLUTION NO.
RESOLUTION OF THE COUNCIL OF THE CITY OF PALO ALTO AUTHORIZING THE CITY MANAGER TO SIGN AND FILE A FINANCIAL ASSISTANCE APPLICATION FOR A STATE REVOLVING FUND LOAN IN AN AMOUNT NOT TO EXCEED TWENTY-FIVE MILLION DOLLARS FROM THE STATE WATER RESOURCES CONTROL BOARD ON BEHALF OF THE PALO ALTO REGIONAL WATER QUALITY CONTROL PLANT FOR THE DESIGN AND CONSTRUCTION OF THE UV DISINFECTION FACILITY

WHEREAS, the State Water Resources Control Board provides low-interest loan funding through the State Water Pollution Control Revolving Fund for construction of publicly-owned wastewater treatment facilities, local sewers, sewer interceptors, water reclamation facilities, as well as expanded use projects such as implementation of nonpoint source (NPS) projects or programs, development and implementation of estuary Comprehensive Conservation and Management Plans, and storm water treatment; and

WHEREAS, the Palo Alto Regional Water Quality Control Plant (PARWQCP) staff has reviewed the application for loan funding and other supporting information for the water recycling project and has determined that the project complies with the Water Resource Fund Guidelines; and

WHEREAS, the PARWQCP operates a disinfection facility and treats the wastewater prior to discharge. The existing facility needed replacement; and

WHEREAS, the State Water Resources Control Board presently has loan funding available in the State Water Pollution Control Revolving Fund to provide low-interest loan funding for construction to assist in funding the costs of the waste water treatment facilities construction project.

NOW, THEREFORE, the Council of the City of Palo Alto does RESOLVE as follows:

SECTION 1. The Council hereby authorizes and directs the City Manager or his designee to sign and file, for and on behalf of the City of Palo Alto, a Financial Assistance Application for a loan from the State Water Resources Control Board in an amount not to exceed twenty-five million dollars ($25,000,000.00) for the design and construction of the UV Disinfection Facility Project (the "Project").
SECTION 2. The City of Palo Alto hereby agrees and authorizes the City Manager or his designee to certify that the City has and will comply with all applicable state and federal statutory and regulatory requirements related to any federal and state loans received.

INTRODUCED AND PASSED:

AYES:

NOES:

ABSENT:

ABSTENTIONS:

ATTEST:

______________________________  ________________________________
City Clerk                          Mayor

APPROVED AS TO FORM:

______________________________  ________________________________
Senior Asst. City Attorney      City Manager

______________________________
Director of Public Works

______________________________
Director of Administrative Services
CITY OF PALO ALTO CONTRACT NO. C06116829

AMENDMENT NO. 1 TO CONTRACT NO. C06116829
BETWEEN THE CITY OF PALO ALTO AND
RMC WATER AND ENVIRONMENT

This Amendment No. 1 to contract No. C06116829 ("Contract") is entered into ______________, by and between the CITY OF PALO ALTO, a California Charter City ("CITY"), and RMC WATER AND ENVIRONMENT, a California Corporation located at 2290 North First Street, Suite 212, San Jose, CA 95131 ("CONSULTANT").

RECITALS:

WHEREAS, the Contract was entered into between the parties for the provision of professional consulting services relating to the Disinfection Facility Plan ("Project"); and

WHEREAS, the parties wish to amend the Contract to increase the scope of services and compensation;

NOW, THEREFORE, in consideration of the covenants, terms, conditions, and provisions of this Amendment, the parties agree:

SECTION 1. Section 1, SCOPE OF SERVICES, is hereby amended to add the following:

"The scope of services and deliverables constituting the Project ("Basic Services") will be performed, delivered or executed by CONSULTANT in accordance with the schedule and the requirements of Exhibit "A" and Exhibit "A-1" for the additional scope of services."

SECTION 2. Section 4, NOT TO EXCEED COMPENSATION, is hereby amended to read as follows:

"The compensation to be paid to CONSULTANT for performance of the Services described in Exhibits "A" and "A-1", including both payment for professional services and reimbursable expenses, shall not exceed one million two hundred ninety-nine thousand nine hundred and forty dollars ($1,299,940.00). In the event Additional Services are authorized, the total compensation for services and reimbursable expenses shall not exceed one million six hundred seventy-nine thousand nine hundred and thirty dollars ($1,679,930.00). The applicable rates and schedule of payment are set out in Exhibits "C", "C-1 and "C-2", which are attached to and made a part of this Agreement.

Additional Services, if any, shall be authorized in accordance with and subject to the provisions of Exhibits "C", "C-1 and "C-2".
CONSULTANT shall not receive any compensation for Additional Services performed without the prior written authorization of CITY. Additional Services shall mean any work that is determined by CITY to be necessary for the proper completion of the Project, but which is not included within the Scope of Services described in Exhibits "A" and "A-1".

SECTION 3. The following exhibit(s) to the Contract are hereby set forth as attachment(s) to this Amendment, which are incorporated in full by this reference:

EXHIBIT "A-1": ADDITIONAL SCOPE OF SERVICES
EXHIBIT "C-2": ADDITIONAL COMPENSATION
SECTION 3. Except as herein modified, all other provisions of the Contract, including any exhibits and subsequent amendments thereto, shall remain in full force and effect.

IN WITNESS WHEREOF, the parties have by their duly authorized representatives executed this Amendment on the date first above written.

APPROVED AS TO FORM: CITY OF PALO ALTO

Senior Asst. City Attorney Assistant City Manager

APPROVED: RMC WATER AND ENVIRONMENT

Director of Administrative Services

By: Lydell A. Story
Name: Lydell A. Story
Title: Executive Officer
By: [Signature]
Name: [Signature]
Title: Vice President

Taxpayer Identification No. 943295096

(Compliance with Corp. Code § 313 is required if the entity on whose behalf this contract is signed is a corporation. In the alternative, a certified corporate resolution attesting to the signatory authority of the individuals signing in their respective capacities is acceptable).
Consultant shall prepare final design documents for a UV disinfection facility at the Palo Alto Regional Water Quality Control Plant (RWQCP). The scope of work includes preparation of the Basis of Design report, final design, and project management.

The RWQCP currently uses chlorine gas to disinfect its treated water and sulfur dioxide gas to dechlorinate the water prior to discharge to the Bay. Minimization/elimination of toxic chemicals such as gaseous chlorine and sulfur dioxide is a core element of the RWQCP's long-term goals that were established in 2002. During the fall of 2004 the RWQCP embarked on a project entitled the Disinfection Alternatives Work Plan Study in which the RWQCP and its stakeholders collaborated to identify, develop and screen candidate disinfection technologies. Through the Work Plan Study, it was concluded that UV disinfection technology presented the most viable alternative to gaseous chlorine and sulfur dioxide use at the RWQCP. The Disinfection Facility Plan, completed in 2007, built upon the work of the previous studies and evaluated UV disinfection versus the no-project alternative in more detail. The Facility Plan concluded that UV technology was the preferred alternative for disinfection at the RWQCP.

This scope of work includes development of contract documents for bidding and construction of a UV facility, including the auxiliary system, in accordance with the recommended project from the Disinfection Facility Plan. The Consultant shall perform, on parallel track, the design of (1) The hypochlorite-bisulfite system as the auxiliary system for non-disinfection uses; and (2) The UV disinfection system. Consultant shall fast-track the design, and assist with the expedition of the installation of the auxiliary system so that the RWQCP can utilize the auxiliary system while the UV system is being finalized and constructed.
This Scope of Work defines the tasks that Consultant will perform in completing the Project: The major task headings are as follows:

- Task 1  Basis of Design report
- Task 2  Design of Sodium Hypochlorite/Bisulfite System
- Task 3  Design of the UV system
- Task 4  Project Management

Task 1 Basis of Design Report

Consultant shall prepare a basis of design report to finalize the design concepts presented in the Facility Plan report. The primary objective of the basis of design report is to present information and to receive feedback sufficient to "freeze" the major design criteria and configurations. The basis of design planning report shall:

- Finalize the overall treatment processes and configuration
- Define discipline engineering design and operating criteria
- Define basic facility layout
- Define equipment requirements and procurement methods

The Basis of Design report shall include the following topics:

1.1 Sodium hypochlorite/sodium bisulfite design criteria

The system shall be designed to serve as an auxiliary system for non-disinfection plant uses, as well as providing disinfection during the construction of the UV system. Review the RWQCP pre-design information. Finalize the strategy to fast track the design, bidding, and installation of the system. Develop the design criteria, facility sizing, and facility layout for a sodium hypochlorite/bisulfite system as the auxiliary system for the non-disinfection chlorine uses at the plant, and to provide disinfection during the construction of the UV system. The TM shall develop design criteria, facility sizing, and facility layout for a sodium hypochlorite/bisulfite system. The sodium hypochlorite/bisulfite system shall be sufficiently sized so that it can serve as the primary disinfectant during construction of the UV facilities, when it is anticipated that the existing disinfection facility will be demolished to make room for the UV system.
CITY OF PALO ALTO CONTRACT NO. C06116829

1.2 UV Design criteria and process configuration

Review comments from City of Palo Alto Planning Department Site/Design review. Update the UV TM from the Facility Plan, finalize design criteria, process schematics, facility layouts, and equipment procurement method.

1.3 Site Plan, yard piping, construction constraints and sequencing

Develop the facility site plan taking into account the need to maintain existing process functions in operation during construction. TM will include the following:

- Overall site plan showing all process structures and access roadways
- Location of major yard piping in the vicinity of the UV system, i.e. pipes greater than 24 inches in diameter

Identify corridors for other yard piping and for electrical duct banks.

1.4 Electrical and controls strategies

Update the electrical and controls strategy presented in the Facility Plan report. It will include an updated analysis of the electrical requirements and standby power for the UV system and the hypochlorite/bisulfite system, and an electrical/control room layout assuming it will be located in the existing chlorine storage room of the Chlorination Building. Instrumentation and control will be designed to interface with the existing computer system and control software. P&ID diagrams for the new facilities will be included in the TM.

1.5 Implementation schedule

Develop an implementation schedule for the project, which will include the following milestones:

1. Fast track design, bidding and installation of the backup system
2. Financing
3. Development and review of contract documents
4. Permitting process
5. Bid Period for the UV system
6. Construction Period including specific milestones for construction sequencing
7. Substantial Completion
8. Final Completion
1.6 Cost Estimate

Update the construction cost estimate from the Facility Plan report based on the process sizing and facilities presented in the basis of design report. The estimate will be based on vendor price quotes for major equipment, detailed cost estimates for similar facilities, published construction cost estimating guides, and in-house construction cost data. All cost resources will be adjusted for work in the San Francisco Bay Area and a bid in the summer of 2008. The American Association of Cost Engineers defines this as a Budget level estimate which is expected to be accurate within plus 30 percent or minus 15 percent.

1.7 Workshops

It is anticipated that three planning workshops with RWQCP staff will be held as follows to present information and to receive feedback:

- Workshop 1  UV and Hypochlorite/Bisulfite Systems
- Workshop 2  Construction Sequencing
- Workshop 3  Electrical and Controls Strategies

**Deliverables**

- 1 electronic file and 5 copies of Draft and Final Basis of Design report
- Workshop agendas and minutes as listed above.

Task 2 Design of the Sodium hypochlorite/bisulfite System

The final design will be based on the design concepts developed in Task 1, the Basis of Design Report. Consultant shall perform fast-track design of the sodium hypochlorite/bisulfite system. The RWQCP will prepare specifications based on the criteria developed in Task 1 and procure major equipment. Consultant shall prepare bid documents suitable for competitive bidding by the RWQCP for the installation of the system based on the agreed upon schedule between the RWQCP and Consultant.

Consultant shall incorporate appropriate comments from the RWQCP, and prepare a final set of drawings and specifications that will be stamped and signed by a licensed professional engineer.
Deliverables:

• 15 copies - Specifications and Half size drawings for installation of the system
• 1 copy - Mylars (22" x 34") of all drawings, wet signed and stamped.
• 1 copy - Electronic files of specifications and drawings in CD

Task 3 Design of the UV System

The final design will be based on the design concepts developed in Task 1, the Basis of Design Report. Services provided include surveying, performing engineering analyses, and preparing drawings and specifications representing approximately a mid-point, 90% and 100% level of design completion. The RWQCP will review all submittals in a timely manner and provide a consolidated list of comments to Consultant.

The design package for the UV system shall address all of the Planning Department's site/design review comments including flood zone and structural requirements, complete for submittal to Building Department by the RWQCP. Consultant shall prepare the UV system bid documents to meet the RWQCP's plan to convert to UV disinfection as soon as possible.

3.1 Permitting

Consultant shall provide plans and calculations per City of Palo Alto Planning Dept. comments. The RWQCP will prepare permit application package, coordinate, and submit application package for the UV system to the City of Palo Alto Building Dept.

Deliverables:

• Permit application plans and calculations for City of Palo Alto Building dept.

3.2 Geotechnical Analysis

Consultant shall provide geotechnical analyses to enhance and expand the existing geotechnical reports available for the RWQCP.
3.3 Surveying

Consultant shall provide site surveying for the proposed UV site within the RWQCP boundaries.

3.4 UV Process Equipment Procurement Proposals

As recommended by the Consultant, the scope of work shall assume that a "competitive proposal method" will be used for the procurement of the UV equipment. The RWQCP understood that the Consultant's recommendation is based on the following:

- UV process equipment is a key to plant performance, and reliability, safety, and maintenance.

- Selection of the UV process equipment through a "competitive proposal method" will enable the RWQCP to make a selection based on relevant factors of construction cost, annual O&M cost, reliability, and energy efficiency.

- It will allow the detailed design to address the specific features of the chosen equipment. Otherwise, due to the wide differences in facility requirements among the vendors, multiple designs would need to be done for each alternative process vendor, significantly increasing the level of design effort.

Consultant shall devise the competitive proposal method to enable the RWQCP to receive competitive pricing, and select based on qualifications. Consultant shall attend a meeting with the RWQCP to present the procurement method to the State Water Resources Control Board (SWRCB) and obtain the SWRCB's approval on the process. The portions of design that are dependent on this procurement process shall not begin until approval is received from the SWRCB. In the event that the SWRCB does not approve the procurement process, Consult shall immediately strategize with the RWQCP to modify the design/procurement method and to proceed with an efficient design.

Consultant shall provide the following services and deliverables:

- Prepare technical sections of the Request for Proposals
- Define Basis of Determination (Selection Criteria)
CITY OF PALO ALTO CONTRACT NO. C06116829

- Revise Equipment Specifications
- Prepare General Arrangement drawings
- Attend pre-proposal Meeting with Vendors
- Answer Vendor Questions
- Evaluate Vendor Proposals
- Prepare Selection TM
- Selection Workshop with City
- Assist City’s Purchasing Dept. with the negotiation of terms with selected vendors

3.5 Preparation of Contract Documents

This subtask includes the technical work necessary to develop biddable plans and specifications for the project. Construction drawings shall be prepared using the latest version of AutoCAD and specifications will be prepared in the CSI format using Microsoft Word. Consultant shall be responsible for the preparation of technical specifications. Consultant shall also be responsible for the review of City’s boiler plate "Section 1, Division 0" specifications and provide recommendations to City for any modifications needed to ensure a complete and functional bid document as intended. The instrumentation and control work shall also include development of process loop control descriptions to be used in the PLC programming by RWQCP staff.

Mid-point Design Submittal

Mid-point design package shall consist of:

Drawings:

- General drawings (abbreviations, legends, symbols)
- Hydraulic profile and plant flow schematics
- Project P&IDs
- Grading, drainage and roadway work
- Yard piping plans showing major pipelines
- Mechanical drawings for each process
- Equipment layouts for all major facilities
- Electrical single line drawings
- Control system architecture block diagram
- Equipment data sheets for all major equipment
- An updated list of drawings remaining to be prepared
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Specifications:

- Draft Construction Sequencing and Special Constraints section
- Technical Provision specification sections on selected major equipment.
- An updated list of specification sections remaining to be prepared
- A list of specific items requiring RWQCP decisions

Drawings and specifications shall be submitted on a work-in-progress basis, and work to prepare for value engineering shall begin while the Mid-point Submittals are being reviewed by the RWQCP and the SWRCB. Following RWQCP review of the Mid-point design review submittal, Consultant shall hold a half-day workshop with the RWQCP staff to discuss the review comments on the submittal. Consultant shall attend and assist the RWQCP with a presentation to the SWRCB on the design.

Deliverables:

- 5 copies of the Mid-point drawings - half size
- 5 copies of the Mid-point specifications

90% Design Submittal

The 90% design shall incorporate comments from the RWQCP, the SWRCB, and value engineering. The 90% submittal package shall contain a complete set of all drawings and specifications for the project components, updated construction schedule, updated construction cost estimate, and summary of changes from the Mid-point design submittal. Following RWQCP review of the 90% design review submittal, a half-day workshop will be held involving the project team and the RWQCP to discuss the review comments on the submittal.

Deliverables:

- 5 copies of the 90% drawings - half size
- 5 copies of the 90% specifications
- Memorandum presenting the 90% design cost estimate
- Meeting minutes from the half day review workshop

100% Design Submittal

Consultant shall incorporate comments from the 90% submittal into a final set of drawings and specifications and will submit them for review by the RWQCP and the SWRCB. The
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purpose of the 100% submittal is to obtain the SWRCB’s approval.

Deliverables:

- 5 copies of the 100% drawings - half size
- 5 copies of the 100% specifications

Final Bid Documents Submittal

Consultant shall incorporate appropriate comments from the 100% submittal into a final set of drawings and specifications that will be stamped and signed by a licensed professional engineer.

Deliverables:

- 50 copies - Specifications and Half size drawings
- 1 copy - Mylars (22” x 34”) of all drawings, wet signed and stamped.
- 1 copy - Electronic files of specifications and drawings in CD

Task 4 Project Management

Project management shall be an integral part of the Consultant’s scope of work. Consultant shall provide project management to monitor all activities, schedule, and budgets of the project. The Project Management activities will include the following:

4.1 Project Progress Meetings

Consultant shall prepare for and conduct monthly project progress meetings with the RWQCP. Project progress meetings between Consultant and the RWQCP shall communicate progress on the project, obtain review comments, discuss upcoming work activities, identify and resolve project issues, obtain endorsement for the design decisions, and/or discuss permits and easements.

Consultant shall also prepare for and give up to three (3) presentations to external parties (CITY Council, SWRCB, external stakeholders, etc.)
4.2 Monthly Progress Reports

Consultant shall furnish monthly progress reports to the RWQCP to keep the RWQCP informed regarding the project work progress, issues, and financial status. These reports will include:

- Invoices by task and by individual
- Scope Report - A narrative progress report of specific accomplishments during the reporting period, problems encountered or anticipated, project decision log, and work scheduled for the next reporting period.
- Cost Report - A report that shows the current period and accumulated expenditures to date by task, the approved not to exceed fee, the estimated cost of completion, and a comparison of the latter two to show any variation. The planned expenses will be provided for comparison.

4.3 Quality Assurance and Quality Control Reviews

Quality assurance and quality control (QA/QC) activities shall include detailed review of project design documents, drawings, and calculations.

**Deliverables:**

- Monthly progress report
- Monthly invoice by task and by individual
- Agenda, Preparation Materials, and Minutes for Project Meetings

**ADDITIONAL SERVICES**

Consultant may be required to perform additional services listed below. Consultant shall perform the additional services upon written authorization by the RWQCP. Payment for the additional services shall be time and expense based on the schedule of charges but not to exceed a pre-negotiated maximum. The maximum limit for each additional task shall be negotiated and agreed upon prior to providing the service. Consultant shall provide a schedule of charges with the fee information. Additional services may include:

A1. Field services and assistance with installation of the sodium hypochlorite/bisulfite system
A2. Additional design as an unexpected outcome of task 3.4
A3. Additional workshops and meetings that are not part of the basic scope of work
CITY OF PALO ALTO CONTRACT NO. C06116829

A4. Assistance with permitting
A5. Attendance or assistance with Value engineering
A6. Services during bid phase

PROJECT SCHEDULE

The project shall start in August 2007. The consultant shall perform work on the Project in accordance with the schedule included as Exhibit "A-1" to this scope of work.

PAYMENT

Progress payments for consultant services shall reflect the amount of effort and percent completion. The cumulative payment shall not exceed the completed percent of the total project fee based on the completed tasks or deliverables, and the attached Schedule of Charges.

*** END ***
EXHIBIT "C-2"
ADDITIONAL COMPENSATION

The CITY agrees to compensate the CONSULTANT for professional services performed in accordance with the terms and conditions of this Agreement, and as set forth in the budget schedule below. Compensation shall be calculated based on the hourly rate schedule attached this agreement as exhibit C-1 up to the not to exceed budget amount for each task set forth below.

The compensation to be paid to CONSULTANT under this Agreement for all services described in Exhibit "A-1" ("Additional Scope of Services") and reimbursable expenses shall not exceed $1,000,000.00. CONSULTANT agrees to complete all Additional Scope of Services, including reimbursable expenses, within this amount. In the event CITY authorizes any Additional Services, the maximum total compensation shall not exceed $1,350,000.00. Any work performed or expenses incurred for which payment would result in a total exceeding the maximum amount of compensation set forth herein shall be at no cost to the CITY.

CONSULTANT shall perform the tasks and categories of work as outlined and budgeted below. The CITY's project manager may approve in writing the transfer of budget amounts between any of the tasks or categories listed below provided the total compensation for Basic Services, including reimbursable expenses, does not exceed $1,000,000.00 and the total compensation for Additional Services does not exceed $350,000.00.

<table>
<thead>
<tr>
<th>BUDGET SCHEDULE</th>
<th>NOT TO EXCEED AMOUNT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Task 1 (Basis of Design)</td>
<td>$100,400</td>
</tr>
<tr>
<td>Task 2 (Design of Sodium Hypochlorite/Bisulfite System)</td>
<td>$127,500</td>
</tr>
<tr>
<td>Task 3 (Design of UV System)</td>
<td>$739,200</td>
</tr>
<tr>
<td>Task 4 (Project Management)</td>
<td>$32,700</td>
</tr>
</tbody>
</table>
Sub-total Basic Services $999,800
Reimbursable Expenses $200

Total Basic Services and Reimbursable expenses $1,000,000

Additional Services (Not to Exceed) $350,000

Maximum Total Compensation $1,350,000

REIMBURSABLE EXPENSES

CITY shall reimburse CONSULTANT for reimbursable expenses including, postage, mileage and other miscellaneous costs, at cost plus 10%. All requests for payment of expenses shall be accompanied by appropriate backup information.

ADDITIONAL SERVICES

The CONSULTANT shall provide additional services only by advanced, written authorization from the CITY. The CONSULTANT, at the CITY’s project manager’s request, shall submit a detailed written proposal including a description of the scope of services, schedule, level of effort, and CONSULTANT’s proposed maximum compensation, including reimbursable expense, for such services based on the rates set forth in Exhibit C-1. The additional services scope, schedule and maximum compensation shall be negotiated and agreed to in writing by the CITY’s project manager and CONSULTANT prior to commencement of the services. Payment for additional services is subject to all requirements and restrictions in this Agreement.

Work required because the following conditions are not satisfied or are exceeded shall be considered as additional services:

A1. Field services and assistance with installation of the sodium hypochlorite/bisulfite system

A2. Additional design as an unexpected outcome of task 3.4

A3. Additional workshops and meetings that are not part of the basic scope of work
A4. Assistance with permitting
A5. Attendance or assistance with value engineering
A6. Services during bid phase