



CITY OF MARTINEZ

**CITY COUNCIL AGENDA
March 19, 2014**

TO: Mayor and City Council
FROM: Tim Tucker, City Engineer
SUBJECT: Water Treatment Plant Electrical Upgrade Project
DATE: March 11, 2014

RECOMMENDATION:

By motion, direct staff to use Bidder Pre-qualification process for the Water Treatment Plant Electrical Upgrade Project; and adopt a resolution authorizing the Interim City Manager to execute a \$59,000 amendment to the consultant services agreement with Carollo Engineers for additional design and bid phase support services for the Water Treatment Plant Electrical Upgrade Project.

BACKGROUND:

The City Council approved the Water Treatment Plant (WTP) Master Plan in February of 2012. The plan identified twenty-three projects to be completed over an estimated fifteen year period. One of the highest priority projects was to overhaul the electrical system. In the WTP Master Plan the electrical system was identified as being as the highest risk asset in the WTP. The 2013-14 and 2014 – 15 Biennial Budget includes \$2,125,700 for the Water Treatment Plant Electrical Upgrade Project.

On February 6, 2013, the City Council adopted a resolution allocating funds and authorizing the City Manager to enter into an agreement for consultant services with Carollo Engineers to perform the design of the Water Treatment Plant Electrical Upgrade Project. Carollo Engineers was deemed most qualified as part of a competitive selection process.

During the preliminary design phase, it became evident that the City would benefit from incorporating the replacement of the reclaimed water pumps into this project. In addition to providing a more robust pumping system, the replacement pumps will provide an increased overall capacity, fully redundant pumps for increased reliability and a more automated control system. It is necessary to amend Carollo’s agreement to incorporate \$12,300 of additional design work related to the reclaimed water pumps. The construction costs to replace the reclaimed water pumps are estimated to be \$150,000.

Engineering services during the bidding phase were not included in the original agreement for design services. Authorization of such services would authorize Carollo Engineers to assist the City with any questions from bidders and the preparation of clarification documents, if required. It is proposed to budget \$46,700 for this task. These two proposed additions to the agreement, totaling \$59,000 are described in detail as Tasks 1 and 2 of the attached Carollo Engineers letter, dated February 7, 2014.

Once construction bids are received, it is staff's intention to bring this project back to the City Council for authorization of award of construction contract and funding allocation for the construction phase.

The project plans and specifications are nearly complete. The project is scheduled to move into the bidding phase and ultimately into construction this summer.

The construction of this project is more complicated and requires more specialized contractor experience than the majority of City capital improvement projects. In 1997, the City Council directed staff, by Resolution No. 153-97, to consider and provide recommendation to City Council on the use of Bidder Pre-qualification for public works projects which require formal bid procedures. This prequalification process requires a 30 day period in addition to the traditional period for bidding. The project schedule will accommodate a pre-qualification period and potential overall savings may be realized by the City by reducing the risk of having an unqualified contractor fail to perform the contract work. Bidder pre-qualification was used on the recently awarded Harbor View Reservoir Replacement project. Past City projects that were subject to a pre-qualification process include the City Hall Renovation Project in 1994 and the Thomas Hill Reservoir and Hillside Reservoir Replacement project in 1999. Based on the foregoing, it is recommended that the City Council direct Staff to use the Bidder Pre-qualification process for the Water Treatment Plant Electrical Upgrade project.

FISCAL IMPACT:

The project is budgeted under Account No. C7037. The project is funded with \$1,800,000 of Water Funds and \$325,700 of Water Bond funds. The project budget and funding is as follows:

<u>Budget</u>	<u>Amount</u>	<u>Amount</u>
Existing Design Agreement		\$325,700
Additional Design Services	\$12,300	
Bid Phase Services	\$46,700	
Amendment 1	\$59,000	\$59,000
Staff project administration		\$50,000
Construction Phase		\$1,691,000
TOTAL BUDGET		\$2,125,700
<u>Funding</u>		<u>Amount</u>
Water System funds		\$1,800,000
Water Bond funds		\$325,700
TOTAL FUNDING		\$2,125,700

ACTION:

Motion directing staff to use Bidder Pre-qualification process for the Water Treatment Plant Electrical Upgrade Project; and adopt a resolution authorizing the Interim City Manager to execute a \$59,000 amendment to the consultant services agreement with Carollo Engineers for additional design and bid phase support services for the Water Treatment Plant Electrical Upgrade Project.

Attachment:

Resolution

Amendment No. 1 to Carollo Engineer's Agreement

Carollo Engineers letter, dated February 7, 2014

APPROVED BY:


Interim City Manager

RESOLUTION NO. -14

RESOLUTION AUTHORIZING THE INTERIM CITY MANAGER
TO EXECUTE A \$59,000 AMENDMENT TO THE CONSULTANT SERVICES
AGREEMENT WITH CAROLLO ENGINEERS FOR ADDITIONAL DESIGN AND
BID PHASE SUPPORT SERVICES FOR THE
WATER TREATMENT PLANT ELECTRICAL UPGRADE PROJECT

WHEREAS, on February 15, 2012 the City Council by motion approved the 2012 Water Treatment Plant Master Plan (Plan); and

WHEREAS, the Plan identified the Water Treatment Plant Electrical Upgrade Project (Project) as being the highest priority project in the Plan; and

WHEREAS, the City of Martinez determined that Carollo Engineers of Walnut Creek, California is best qualified to provide engineering services for this work; and

WHEREAS, Carollo Engineers has performed tasks for the City in the past on budget and in a timely and professional manner; and

WHEREAS, the scope and proposal provided by Carollo Engineers has been determined fair and equitable; and

WHEREAS, on February 6, 2013, the City Council authorized the City Manager execute a standard Consultant Services Agreement with Carollo Engineers, for the design of the Project; and

WHEREAS, the 2013-14 and 2014-15 Biennial Budget includes \$2,125,700 of funding for the Project; and

WHEREAS, additional design and bid phase services, in the amount of \$59,000 is needed for a more efficient upgrade and to move the project through the bidding phase.

NOW, THEREFORE, BE IT RESOLVED that the City Council authorizes the Interim City Manager to execute a \$59,000 amendment to the consultant services agreement with Carollo Engineers for additional design and bid phase services for the Water Treatment Plant Electrical Upgrade Project.

* * * * *

I HEREBY CERTIFY that the foregoing is a true and correct copy of a resolution duly adopted by the City Council of the City of Martinez at a Regular Meeting of said Council held on the 19th day of March, 2014, by the following vote:

AYES:

NOES:

ABSENT:

RICHARD G. HERNANDEZ, CITY CLERK
CITY OF MARTINEZ

February 7, 2014

Mr. Jim Zumwalt
City of Martinez
525 Henrietta Street
Martinez, CA 94553

Subject: Electrical Power Distribution System Upgrade Project – Amendment #1

Dear Mr. Zumwalt:

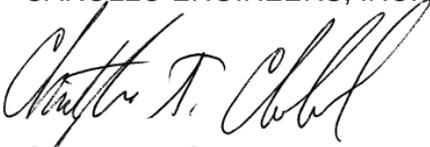
We are pleased to provide the attached amendment for the Electrical Power Distribution System Upgrade Project at the City of Martinez Water Treatment Plant. As requested, we have included a proposed scope and budget for the design amendment associated with the replacement of the Reclaimed Water Pumps, Bid Phase Support Services, and Engineering Support During Construction. We also include an allowance for additional services as discussed in our recent meeting.

We understand that the City will be providing construction management and inspection services for the project during construction for this project. As such, our scope for engineering assistance during construction has been developed to support this effort with typical office engineering tasks, regular site visits and construction meeting attendance, and specialty inspection as needed.

We would be happy to discuss this amendment at your convenience and are happy to make changes as necessary to customize it to the City's needs.

Sincerely,

CAROLLO ENGINEERS, INC.



Christopher Cleveland, P.E.

BJH:bjh

cc: Jim Enke
Beverly Hann

Electrical Power Distribution System Upgrade Project Amendment #1

INTRODUCTION

Design for the Electrical Power Distribution System Upgrade Project at the City of Martinez Water Treatment Plant (WTP) is currently underway, with delivery of Bid Documents scheduled for April 2014. This work includes engineering services associated with the design and coordination for replacement of all items discussed in Alternative 1 "Partial Electrical Upgrade" of the 2012 WTP Master Plan. In short, the following elements are included during construction of the upgrade:

- The main switchboard located near the old plant will be replaced with a new switchgear located in a new electrical room retrofitted into the 1948 building's old chlorine room.
- Replacement of motor control centers (MCCs) MCC-A, MCC-B, MCC-C, and MCC-G.
- Replacement of feeder conductors and conduits between MCCs A, B, C, and G and equipment.
- Replacement of feeder conductors and exposed or underground conduits between the main switchboard and downstream MCCs and equipment.
- Replacement of the 100kVA transformer located in the basement of the 1948 Building.
- Allowance for replacement of corroded conduit (and wiring) not associated with the replacement of the electrical equipment.
- Replacement of valves and electric actuators on the discharge piping of Finished Water Pumps No. 5 and 6.
- Modifications to the Old Chlorine Room for use as New Switchgear and MCC-G Electrical Room.

As work has progressed, additional needs have been identified for the design project. This amendment also includes follow-up bid phase and engineering services during construction. Scope and budget for these items are described herein.

SCOPE OF SERVICES

Scope and budget is included for the following additional services:

- Detailed design of additional components, including replacement of the Reclaimed Water Pumps serving the Washwater Receiving Basin
- Bid phase support
- Engineering services during construction

An optional task for engineering services associated with protective device coordination and arc flash is also included herein that would be performed at the completion of the construction phase of the project.

Task 1 – Reclaimed Water Pumps

Design associated with replacement of the existing reclaimed water pumps with a duplex pumping system will be fast tracked for inclusion into the current electrical project. This work will include replacement of the pumps with a more robust pumping system, one that also has:

- An increased overall capacity (10% of the peak flow return capability to the plate settler)
- Fully redundant pumps (duty/standby for increased reliability)
- A more automated control system

To accommodate the new pumps within this project, modifications to the Washwater Receiving Basin that are currently included in the Seismic and Structural Upgrade Project will be performed as part of this project. The additional design fee included for this task is only for additional efforts associate with the pump replacement.

Task 2 – Bid Phase Services

Engineering services during project bidding were not included in the original contract. The fee estimate and scope included herein is based on the level of effort anticipated to support the City during bidding of the project.

2.1 – Attend Prebid Conference

Key members of Consultant's project team will participate in the prebid conference and prebid site visit and will prepare conference notes for distribution to attendees by the City.

2.2 – Answer Bidder Questions

Consultant will answer questions from prospective bidders and suppliers during the bidding period. Questions will be responded to within addenda if clarification is deemed necessary.

2.3 – Prepare Addenda

Consultant will prepare addenda for distribution by the City, as required. Consultant will prepare one original copy of each addendum to be provided to the City for reproduction. This task assumes two (2) addenda will be required.

2.4 – Prepare Conformed Documents

Upon issuance of the Notice of Award by City staff, Consultant will prepare Conformed Documents by incorporating all changes by addenda into the final documents for construction. Five (5) sets of half-size drawings and five (5) copies of specifications will be provided to the City for its use and distribution to the Contractor. One (1) electronic copy of each document will be provided in PDF format.

Task 3 – Engineering Services During Construction

Engineering services during construction was not included in the original contract. The fee estimate and scope included herein is based on the level of effort anticipated to support the City during construction of the project.

3.1 – Submittal Review

Consultant's design/office engineering staff will assist in the review of product submittals received during the construction project. This Scope of Services assumes that the City will perform construction management and inspection, will directly receive and log submittals and shop drawings from the Contractor, and will submit them to Consultant in electronic format. Those submittals that require design team assistance will be forwarded to Consultant for review. Consultant will review submittals received and provide comments directly to the City. Review by Consultant will determine whether equipment and materials proposed by the Contractor will meet the design intent of the project and the requirements stipulated in the Contract Documents. Written responses to each submittal will be provided on Carollo's standard submittal response form, delivered electronically to the City.

Consultant will provide review comments for each submittal in a summary written response within fifteen (15) working days after receipt of each submittal in the Consultant's home office. If for any reason the review cannot be performed within this fifteen (15) working day period, Consultant will notify the City and provide reason for the delay.

Consultant's review is not intended as acceptance of the Work if submittals deviate from the Contract Documents or contain errors, omissions, or inconsistencies, nor is the review intended to relieve Contractor of his full responsibility for performance as required by the Contract Documents, nor is the review intended to ensure or guarantee lack of errors, omissions, or inconsistencies between the submittals and the Contract Documents.

This Scope of Services assumes review of sixty-five (65) submittals (including re-submittals) at an average of four hours per submittal.

3.2 – Design Clarifications/Requests for Information

Consultant will respond to requests for information (RFI) or clarification of the Contract Documents transmitted electronically to Consultant by the City. RFIs that might require a response include those RFIs that cannot be resolved through a close and thorough examination of the Contract Documents or for which an interpretation may represent a material change in the design or operational intent of the facility. The work will involve both written responses to formal RFIs and informal verbal (telephone) responses to the City. Written responses will be provided on Carollo's standard response form and will be delivered electronically to the City. Consultant will also issue Design Clarifications (DC) where deemed necessary to clarify the Contract Documents, but where cost impacts are not anticipated.

Consultant will provide written responses to the City within five (5) working days after receipt of each RFI in Consultant's home office. If for any reason the review cannot be performed within this five (5) working day period, Consultant will notify the City and provide reason for the delay.

This Scope of Services assumes responses to fifty-four (54) RFIs (and/or preparation of DCs) at an average of 4 hours each.

3.3 – Request for Proposal Preparation/Contract Change Order Review Assistance

In the event that a change to the contract documents is required (and as requested by the City), the Consultant will either review the Change Order Request (COR) prepared by the Contractor or will issue a Request for Proposal (RFP). If the COR/RFP requires redesign, the Consultant will prepare detailed contract change order specifications, drawings, or sketches, as required, for electronic submittal to the City.

This Scope of Services assumes preparation of five (5) RFPs and/or contract change orders at an average of 12 hours each.

3.4 – Specialty Inspection

Specialty inspection is required during construction and includes specialty inspection services associated with reinforcing steel and equipment (mechanical and electrical) anchorage. The Scope of Services assumes ten (10) specialty inspection site visits at four (4) hours each.

3.5 – Site Visits/Construction Meetings

Consultant's Project Manager, Project Engineer, and/or discipline engineers will attend construction meetings held with the City and the Contractor. For budgeting purposes, it is assumed that construction meetings will occur weekly throughout the duration of the construction project (assumed maximum of 24 months) and that Consultant's attendance will occur every other meeting (on average).

Consultant's office engineering staff will conduct site visits to provide opinions and observations to City staff regarding general compliance with the Contract Documents, to assist City staff in resolving field related issues and/or to attend construction meetings at the City's request. Site visits will be scheduled to coincide with construction meeting attendance.

3.6 – Record Drawings

Consultant will prepare and submit electronic record drawings. Field data, information, sketches, and working drawings to be incorporated with the record drawings will be provided to Consultant by the City's construction manager. The Contractor is responsible for maintaining accurate on-site record drawings throughout the project. It is assumed herein that the City's construction manager will check on-site documentation of changes regularly throughout the project for accuracy.

The record drawings will include above-grade and below-grade changes from the original design drawings. Changes reflecting as-installed conditions will be made in the same level of

detail and to the same degree of drafting quality as the original design drawings, but no better than the level of detail provided in the Contractor's drawings and mark-ups. Two (2) half-size drawing sets on paper and one (1) full-size drawing set on bond will be delivered to the City as well as electronic PDF files. Original documentation from the Contractor used by Consultant to prepare the record drawings will be delivered to the City for its files.

3.7 – Project Management

Consultant's Project Manager will make staffing assignments, review work progress, and communicate progress to the City. The Project Manager will also manage the budget, schedule, and invoicing. This task assumes completion of all services included herein within 25 months of initiation of the bid phase.

Task 4 – Optional Services Allowance

This task assigns a budget allowance for additional work that may come up during the completion of the project (either due to unforeseen conditions or because of a City requested change). Consultant will utilize the allowance as directed by the City on an as-needed basis during the progression of work.

ASSUMPTIONS AND EXCLUSIONS

The following assumptions were made in the preparation of this Scope of Services:

- The City will provide construction management services and will manage the document flow between the Contractor and Consultant.
- The City will provide all legal services related to contract review, bidding irregularities, protests, claims, and related items.
- The hours allotted for each task are based on the assumed number of deliverables as indicated herein. An amendment to this task order may be needed if the effort required by Consultant exceeds that defined herein.
- Regular inspection and testing services are not included in this Scope of Services. These services, if desired, can be provided under a separate task order.
- Consultant shall not be responsible for the means, methods, techniques, sequences, or procedures of construction selected by Contractor or the safety precautions and programs incident to the work of Contractor.
- Consultant will not be responsible for the Contractor's failure to carry out work in accordance with the Contract Documents or compliance of Contractor submittals that are not reviewed by Consultant.
- The City will complete any necessary environmental documentation and/or permit requirements for the implementation of this Project. Environmental documentation and permitting are specifically excluded from this Scope of Services.

PAYMENT

Consultant will perform the duties described herein on a time and materials reimbursable basis in accordance with Consultant's standard fee schedule in affect at the time services are rendered. A copy of the current fee schedule is attached. The maximum compensation will not exceed the values indicated in the table below for each task without prior written approval.

Task	Fee
Task 1 – Reclaimed Water Pumps (Additional Design)	\$12,300
Task 2 – Bid Phase Services	\$46,700
Task 3 – Engineering Services During Construction	\$198,000
Task 4 – Additional Services Allowance	\$60,000

SCHEDULE

Consultant will manage the following schedule for completion of the tasks defined herein:

Event	Approximate Date
90% Design Submittal	February 19, 2014
90% Design Review Meeting	Within 2 weeks following submittal of 90% design
Bid Document Submittal	Within 30 days of Receipt of City Comments on 90% Design
Advertise for Bid	Per City's project schedule

OPTIONAL TASK

Task 5 – Arc Flash Study (Optional)

As an optional task to the Scope of Services presented herein, Consultant will conduct a comprehensive Arc flash Study for the electrical power distribution system (power system) at the Martinez WTP after improvements are completed by the Contractor. This task is composed of the following individual tasks.

5.1 – Initial Site Visit/As Built Document Review

Consultant will conduct an initial site visit to the WTP to investigate and confirm the configuration of the existing power system and electrical equipment ratings. Given that the initial site visit will consist of visual inspection only, de-energization of electrical equipment will not be required. Consultant will review all available power system as-built documents and equipment shop drawings for consistency with the current installed conditions and equipment ratings.

5.2 – Utility Coordination

Consultant will coordinate with the Electric Utility serving the WTP to obtain the following information needed to perform the Arc Flash Study calculations: service voltage operating range, minimum and maximum fault current and impedance values, and upstream protective device settings.

5.3 – Preliminary Risk Assessment

Prior to conducting detailed field investigation of the power system, Consultant will develop a preliminary risk assessment to conservatively estimate the arc flash hazard associated with each piece of equipment that will be investigated. The arc flash hazards will be estimated by using either a preliminary hazard model or NFPA 70E Table 130.7(C)(15).

5.4 – Field Investigation

Consultant will conduct detailed field investigation of the power system equipment including the following specific activities:

- De-energization of electrical equipment
- Absence of voltage testing
- Inspection and documentation of equipment ratings, relay settings, model/serial numbers
- Documentation of physical condition (internal and external)
- Verification of proper operation of equipment
- The return of equipment to their as-found energized state

Every effort will be made to de-energize equipment prior to investigation. However, in the event that a piece of equipment cannot be de-energized, the appropriate PPE will be utilized (based on the Preliminary Risk Assessment for that particular piece of equipment). Consultant will employ the services of a licensed electrical contractor to assist with the field investigation activities.

5.5 – Draft Arc Flash Study Report

Using the information gathered in the field investigation, utility coordination, and review of as-built documentation, Consultant will develop a power system software model using the SKM Power*Tools for Windows (PTW) software package. The PTW software model will be used to perform fault-current calculations, protective device coordination (based on the as-found protective device/circuit breaker settings), and arc flash incident energy calculations for the various elements comprising the WTP power system. The calculations and results will be summarized in a Draft Arc Flash Study report. More specifically, the Draft Arc Flash Study report will include the following:

- Summary of information gathered during field investigation and utility coordination

- Results of fault current calculations, protective device coordination, and arc flash incident energy calculations
- Recommendations to reduce arc flash incident energy levels where possible
- Listing of information for each arc flash hazard label
- Summary of any insufficient equipment ratings or other technical concerns related to the operation or condition of electrical equipment, and recommended repairs or equipment replacement alternatives
- Documentation of any incomplete verification data including omissions and calculation assumptions made in the development of the report
- Complete listing of nameplate data for each piece of electrical equipment included in the report

Following submittal of the Draft Arc Flash Study Report, Consultant will conduct a review meeting with the City (to occur within 2 weeks of study submittal) to discuss the study and receive feedback.

5.6 – Final Arc Flash Study Report

Consultant will address all City comments received on the Draft Arc Flash Study Report and incorporate responses into a Final Arc Flash Study. The final study report will also be updated to reflect changes to protection settings needed to reduce arc flash incident energy, as well as any repairs or replacements made to the power system equipment. A summary table documenting all protection settings used in the final arc flash incident energy calculations will be included in the final study. In addition to the written final study, Consultant will provide the actual power system software model files in the native PTW format on CD-ROM.

5.7 – Arc Flash Label Installation

Based on the results of the Final Arc Flash Study, Consultant will create and install arc flash hazard labels for the WTP power system equipment.

5.8 – Arc Flash Training

Following the final Arc Flash Study review meeting and installation of the arc flash hazard labels, Consultant will prepare and conduct an 8-hour arc flash training seminar for the WTP operation and maintenance staff. The training seminar will cover the following topics:

- Causes of arc flash incidents
- Hazards associated with arc flash
- Explanation of arc flash hazard labels and approach boundaries
- Proper use of personnel protective equipment (PPE) and PPE requirements for various maintenance activities
- Review of the arc flash hazard labeling provided for the WTP power system equipment

At the City's request, Continuing Education Units (CEU's) and certifications of completion will be provided for attendees. As required for CEU eligibility, the training seminar will conclude with either an oral or a written exam.

Summary of Deliverables and Meetings Associated with Optional Task

Meeting(s):

- Coordination meeting with Electric Utility (if necessary)
- Draft Arc Flash Study review meeting
- Arc Flash Training Seminar

Deliverable(s):

- Preliminary Risk Assessment (1 electronic PDF copy)
- Draft Arc Flash Study (2 hard copies, 1 electronic PDF copy)
- Final Arc Flash Study (2 hard copies, 1 electronic PDF copy)
- PTW model files (native PTW file format on CD-ROM)
- Arc flash hazard labels
- Training seminar materials (1 hard copy for each attendee)
- Certificates of completion (1 hard copy for each attendee).

Assumptions and Exclusions (Optional Task)

The following assumption was made in the preparation of the scope associated with the Arc Flash Study:

- The City will assist Consultant, as necessary, in contacting and coordinating with PG&E to obtain information needed for the Arc Flash Study.

Payment

Consultant will perform the duties described herein on a time and materials reimbursable basis in accordance with Consultant's standard fee schedule in affect at the time services are rendered. The maximum compensation will not exceed the value indicated below for the optional task without prior written approval.

Task	Fee
Task 5 – Arch Flash Study (Optional)	\$60,400

**Exhibit B
CITY OF MARTINEZ
Amendment 1 - Electrical Power Distribution System Upgrade Project**

Task	Task Description	PIC	PM	QM	Civil/ME	PE	AP	CAD	WP	Total	Labor	PECE	Mileage/ Printing	ODC	Total
		Cleveland	Hann	JD	Hook	Robinson	Cai	Technician	WP						
1.0	Reclaimed Water Pump Replacement	0	6	2	24	8	0	24	4	68	\$11,514	\$796	\$ -	\$796	\$12,300
	Task Totals =	0	6	2	24	8	0	24	4	68	\$11,514	\$796	\$0	\$796	\$12,300
2.0	Bid Phase Support Services														
2.1	Attend Prebid Conference	0	8	0	0	8	0	0	1	17	\$2,995	\$199	\$100	\$299	\$3,300
2.2	Answer Bidder Questions	4	12	8	0	24	0	0	4	52	\$9,824	\$608	\$ -	\$608	\$10,400
2.3	Prepare Addenda	2	8	4	4	40	0	40	0	98	\$17,148	\$1,147	\$300	\$1,447	\$18,600
2.4	Prepare Conformed Documents	2	8	4	4	24	0	24	12	78	\$12,928	\$913	\$600	\$1,513	\$14,400
	Task Totals =	8	36	16	8	96	0	64	17	245	\$42,895	\$2,867	\$1,000	\$3,867	\$46,700
3.0	Engineering Services During Construction														
3.1	Submittal Review	6	16	8	16	112	96	0	6	260	\$46,010	\$3,042	\$ -	\$3,042	\$49,100
3.2	Design Clarifications/Requests for Information	6	24	16	8	70	66	20	6	216	\$38,686	\$2,527	\$ -	\$2,527	\$41,200
3.3	Request for Proposal Preparation/Contract Change Order Review Assist.	8	24	8	0	20	0	0	0	60	\$12,344	\$702	\$ -	\$702	\$13,000
3.4	Specialty Inspection	0	0	0	0	40	0	0	0	40	\$7,520	\$468	\$300	\$768	\$8,300
3.5	Site Visits/Construction Meetings	12	60	16	8	96	0	0	0	192	\$37,916	\$2,246	\$2,640	\$4,886	\$42,800
3.6	Record Drawings	0	12	0	0	40	8	90	8	158	\$26,404	\$1,849	\$1,000	\$2,849	\$29,300
3.7	Project Management	24	32	0	0	0	0	0	2	58	\$12,580	\$679	\$1,001	\$1,680	\$14,300
	Task Totals =	56	168	48	32	378	170	110	22	984	\$181,460	\$11,513	\$4,941	\$16,454	\$198,000
4.0	Additional Services Allowance														\$60,000
	Project Totals =	64	210	66	64	482	170	198	43	1,297	\$ 235,869	\$ 15,175	\$ 5,941	\$ 21,116	\$ 317,000
Optional Task (Arc Flash Study)															
5.0	Arc Flash	6	16	40	0	132	96	0	20	310	\$55,998	\$3,627	\$ 750	\$4,377	\$60,400
	Task Totals =	6	16	40	0	132	96	0	20	310	\$55,998	\$3,627	\$750	\$4,377	\$60,400

* 2014 Fee Schedule Rates Shown. Design phase rates held at 2013 fee schedule rates

Legend:

- PIC Principal in Charge
- PM Project Manager
- QM Quality Manager
- PE Project Engineer
- AP Assistant Professional
- CAD Cadd Drafter/Graphics
- WP Word Processor
- PECE Project Equipment Communication Expense

**CAROLLO ENGINEERS, INC.
FEE SCHEDULE**

**As of January 1, 2014
California**

	<u>Hourly Rate</u>
Engineers/Scientists	
Assistant Professional	\$154.00
Professional	188.00
Project Professional	223.00
Lead Project Professional	244.00
Senior Professional	265.00
Technicians	
Technicians	115.00
Senior Technicians	162.00
Support Staff	
Document Processing / Clerical	102.00
Project Equipment Communication Expense (PECE) Per DL Hour	11.70
Other Direct Expenses	
Travel and Subsistence	at cost
Mileage at IRS Reimbursement Rate Effective January 1, 2014	\$.56 per mile
Subconsultant	cost + 10%
Other Direct Cost	cost + 10%
Expert Witness	Rate x 2.0

This fee schedule is subject to annual revisions due to labor adjustments.