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Chief Executive Officer and General Manager

January 22, 2008

The Honorable City Council
Office of the City Clerk
Room 395, City Hall
Mail Stop 160

Attention: Councilmember Jan Perry
Chairperson, Energy and Environment Committee

Councilmember Jose Huizar
Chairperson, Audits and Governmental Efficiency Committee

Honorable Members:

Subject: Council File No. 05-2252-S2 – 3rd Party Audit of the Los Angeles
Department of Water and Power (LADWP) Owens Lake Dust Mitigation
Project (OLDMP)

This is in response to the motion (Huizar – Greuel) directing LADWP to report to the
Audits and Governmental Efficiency and Energy and Environment Committees with the
results of the third party audit of its OLDMP.

Attached for your information is the "Final Report, Performance Audit of Contracts
10390 and 10001 Between Los Angeles Department of Water and Power and CH2M
Hill", prepared by GCAP Services, Inc.

FEB 07 2008

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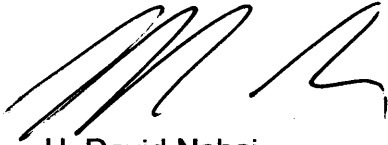
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The Honorable City Council
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January 22, 2008

If you have any questions or if further information is required, please contact me at (213) 367-1338, or have your staff contact Ms. Winifred Yancy, Government Affairs Representative, at (213) 367-0025.

Sincerely,

A handwritten signature in black ink, appearing to read 'H. David Nahai', written in a cursive style.

H. David Nahai
Chief Executive Officer and
General Manager

Enclosure

c/enc: Council President Eric Garcetti, Vice-Chair, Energy and Environment Committee
Councilmember Richard Alarcon, Member, Energy and Environment Committee
Councilmember Tony Cardenas, Member, Energy and Environment Committee
Councilmember Wendy Greuel, Member, Energy and Environment and Audits
and Government Efficiency Committees
Councilmember Dennis Zine, Vice-Chair, Audits and Government Efficiency
Committee
Ms. Winifred Yancy



LOS ANGELES
DEPARTMENT OF
WATER & POWER

FINAL REPORT
~~CONFIDENTIAL~~ *ll*

PERFORMANCE AUDIT OF
CONTRACTS 10390 AND 10001
BETWEEN
LOS ANGELES DEPARTMENT OF WATER AND POWER (LADWP)
AND
CH2M HILL

MAY 7, 2007

Prepared By
GCAP Services, Inc.



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Appendix F: Task Order Audit Sample

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Executive Summary

GCAP Services, Inc. has completed its performance review on two Los Angeles Department of Water and Power (Department or LADWP) professional services contracts awarded to CH2M Hill. The scope of the review included work associated with Department Agreement Nos. 10390 and 10001. The primary objectives of the review were to evaluate the Agreements to assess whether contract provisions were adequate and best served the interests of the Department; to review the Department's management and oversight of the Agreements; to evaluate whether Department controls and procedures are adequate; to assess the performance of CH2M Hill; and evaluate compliance with contract provisions.

In February 2007, GCAP was requested to perform an additional review of markup of subcontractor costs under these two Agreements. That analysis has been incorporated into the findings included herein.

GCAP submitted a detailed Work Plan to the Department as a contract deliverable. This Work Plan served as the framework for this review. The Work Plan incorporated RFP Appendix J *Forensic Engineer Audit* requirements and any other requirements detailed in the scope of services. It includes a review of the adequacy of the solicitation and contracting approach, examination of internal controls, the development and approval of contract task orders, the effectiveness of cost and schedule monitoring, review of MBE/WBE utilization and reporting, appropriateness of contractor and subcontractor billings, and overall compliance with contract provisions, city charter and code.

Background

The Department's contract administration is decentralized and each business unit is responsible for the administration of contracts after award. The Water Resources Division was responsible for managing and administering the Owens Lakebed Dust Mitigation Program (OLDMP) Agreement Nos. 10390 and 10001. The Water Resources Division is primarily involved in water-related policy and regulatory issues and has managed very few projects similar to the scope of the OLDMP.

The two OLDMP agreements awarded to CH2M Hill for Owens Lake Dust Mitigation Environmental Program Management Services were awarded under the Department's Task Management System (TMS). The Department uses the TMS to contract for specific services, such as design, engineering, project management, and other professional services when the scope of work is not completely known or poorly defined at the time of contract award. Hourly labor rates and other unit prices proposed by the successful contractor are the basis for establishing the contract compensation for tasks approved by the Department. Almost all task orders awarded under these two OLDMP agreements were Time & Material task orders, which provide little incentive for cost containment.

Thirty-four (34) task orders were awarded under Agreement No. 10390. Ninety-eight (98) task orders were awarded under Agreement No. 10001. Agreement No. 10390 was performed between 1999 and 2001. Agreement No. 10001 was performed between 2001 and 2006. From January 27, 1998 to June 30, 2006 approximately \$96.5 million had been billed under these two Agreements. In total, 132 task orders have been awarded with only five task orders awarded on

a fixed price basis for about \$4.1 million, which represents 4.25% of the total billed amount. Many of these task orders were amended several times to increase scope, funds, or time.

Summary of Audit Findings

We found that Agreement Nos. 10390 and 10001 lacked terms, conditions and provisions to limit and control both cost and performance risk. Specifically, the Agreements lacked provisions to limit or control subcontractor labor rates; did not include an approval authority matrix requiring the review and approval of Department senior management for large dollar, task order awards; and failed to include an audit recovery clause. The Agreements also failed to describe the basis for markup on subcontractor costs or other direct costs, for which we questioned subcontractor and associated markup costs of \$116,814 under Agreement No. 10390 and \$627,405 under Agreement No. 10001.

We also found that the Agreements include differing contract formats and contain differing contract clauses making contract administration difficult. Although Design-Build-Operate (DBO) agreements were originally planned by the Department for the construction phases at Owens Lake, after the first construction phase, a Design-Bid-Build approach was established for all subsequent construction phases.

The Water Resources Division and the Department lacked internal controls to ensure the proper review, award, and management of task orders under these Agreements. We found no written documentation for the basis of award decisions for any of the task orders reviewed. In some instances, invoice payments were made without proper analysis and review, resulting in the reimbursement of unallowable costs. We found inadequate monitoring of contract compliance, inadequate reporting on the utilization of MBE/WBE firms, and untimely and inadequate monitoring of contractor performance. The Department's contracting and management practices resulted in reduced competition, increased costs, and inadequate project reporting.

We found that although CH2M Hill performed the technical requirements of the task orders, they lacked effective oversight in the areas of cost controls, subcontractor management, and in some cases, construction management. CH2M Hill allowed subcontractors and second-tier subcontractors to markup costs, which was prohibited by both Agreements, subcontracted to MBE/WBE firms who "passed through" the work to non-MBE/WBE firms on some task orders, and allowed subcontractors to begin work prior to contract award. This resulted in increased costs to the Department, limited competition, and unnecessary and unallowable costs to be paid by the Department.

Nineteen task orders issued under the two Agreements for Environmental Program Management of the OLDMP were selected for review. The task orders were reviewed for adequacy of technical approach and for contract compliance. The major findings of our technical review are contained in Findings 18 and 19. Most of the other findings contained herein are managerial and financial in nature. The project was unique and complex which required the coordination of a large number of state agencies, local districts, and advocacy groups. The schedule for the project was maintained under rigorous time constraints. The efforts at achieving dust mitigation involved a great deal of engineering expertise combined with trial and error. We found that the technical outcomes that were mandated by the State Implementation Plan were achieved, but were not achieved in a cost effective or efficient manner.

On the following two pages we provide a brief summary of our findings. Beginning on Page 11 of this report we discuss the details of each finding.

We reviewed our draft findings with CH2M Hill management on several occasions and revised our findings as appropriate. Based on discussions with CH2M Hill, we were informed that written comments would not be provided to be incorporated into this Report.

EXHIBIT 1: SUMMARY OF AUDIT FINDINGS

Finding No.	Finding Description	Page No.
Section 1 – Review of LADWP Procurement Process		
Finding 1	The procurement process utilized for Agreement No. 10390 did not include sole source justifications or engender full and open competition.	11
Finding 2	The Request for Proposal (RFP) for Agreement No. 10001 was poorly structured, contained ambiguous wording, and was not developed from a standardized template.	12
Finding 3	Use of a Time & Materials task order versus a Fixed-Price task order may have increased the cost of the project.	14
Finding 4	Department purchasing and contract administration procedures are not standardized and are not universally available to purchasing staff or contract administrators.	15
Section 2 – Review of LADWP Management of Owens Lake Project		
Finding 5	Standard protocols for project management and project controls were not consistently incorporated into the management of the Owens Lake Dust Mitigation Project.	16
Finding 6	The Department did not verify that labor rates proposed by CH2M Hill and its subcontractors under Agreement Nos. 10390 and 10001 were fair and reasonable.	19
Finding 7	Markups on reimbursable expenses and subcontractor costs allowed under Agreement No. 10001 were found to be excessive compared to other local government agencies.	19
Finding 8	Improved controls are required to ensure that Task Orders billing limits are not exceeded.	20
Finding 9	The Department’s invoice processing procedures for the Owens Lake Dust Mitigation Program is duplicative, incomplete, and inefficient.	21
Finding 10	Department management and oversight of Task Order billings need improvement. We found CH2M Hill billed \$330,136 of questionable labor and \$13,884 of questionable expenses for Task Orders during the period February 1, 2005 through April 28, 2006. In addition, we found 18% of billed labor was for positions not included in approved Task Orders.	22
Finding 11	Contract compliance monitoring was very limited on the project and no effort was made to ensure that MBE/WBE’s were serving a commercially useful function.	23

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Finding 12	Legal services were procured without the approval of the City Attorney.	24
Review of CH2M Hill's Management of Owens Lake Project		
Finding 13	We found no evidence that the Department reviewed design costs over the course of the project.	25
Finding 14	CH2M Hill improperly applied cash discounts in the amount of \$606,516 for work performed in excess of Task Order authorized limits.	26
Finding 15	CH2M Hill invoiced direct costs totaling \$477,740 for subcontract management and also invoiced markup on subcontractor costs.	27
Finding 16	We questioned \$398,107 of unallowable charges in CH2M Hill's subcontractor billings for the period February 1, 2005 through April 28, 2006 based on a 100% review of subcontractor invoices. The \$398,107 represents about 5.4% of the subcontractor billings for this period.	28
Finding 17	Markup on subcontractor costs under Agreements Nos. 10390 and 10001 were found to be excessive.	28
Finding 18	The provision of acceptable "as-built" construction drawing records for test wires and anodes installed by the construction contractor was not confirmed by CH2M Hill Construction Management staff in a timely manner and led to the expenditure of additional resources. Department Operations staff also identified problems with locating "as-built" drawings.	30
Finding 19	The Fiberglass Pipe to North Sand Sheet Shallow Flooding Area at Owens Lake did not meet pressure-testing requirements.	31

Introduction

In January 2006, LADWP solicited proposals to assist in reviewing the Department management of CH2M Hill's performance on two Owens Lake Dust Mitigation professional services contracts and to identify and propose alternative contracting practices to achieve maximum value from its professional services contracts. The overall objective of the review was to provide the Department with an objective analysis and recommendations to ensure that:

- Up-to-date and effective operating policies and procedures are in place and that implementation is monitored.
- Resources have been managed in an effective manner and comply with applicable laws and regulations.
- Contracts achieved their objectives and desired outcomes.
- Contracted services were provided efficiently economically, and effectively.

GCAP Services, Inc. was selected to conduct the performance review, which commenced on May 31, 2006. In August 2006 GCAP submitted a Preliminary Report to the Department. In February 2007 GCAP was requested to perform a review of subcontractor markup costs for Agreement Nos. 10390 and 10001. This report has been prepared to consolidate all findings developed under this performance review and is organized by sections that correlate with the Statement of Work in the GCAP Agreement. Each of the three review sections is introduced with background information. Each finding in the section is followed by criteria, conditions, cause and effects related to the finding, and if applicable, recommendations. Best practices have been included in Appendix A.

Source documents used for best practices in this report include the City of Los Angeles Bureau of Engineering Project Delivery Manual, the Los Angeles Department of Water and Power Policies and Procedures for Professional and Personal Services Contracts, the Metropolitan Water District of California Contract Negotiation Guidelines, the Federal Acquisition Regulations (FAR), the Federal Acquisition Streamlining Act (FASA) and the FTA Best Practices Procurement Manual.

Contracting Overview of Owens Lake Dust Mitigation Program

In July 1998 a Memorandum of Agreement was signed by the City of Los Angeles (the City) and the Great Basin Unified Air Control District (Great Basin). The Agreement was the result of a settlement of issues with the Owens Valley PM₁₀ State Implementation Plan (SIP) adopted by Great Basin in July 1997. In 2003, the SIP was revised to incorporate knowledge gained by the "first start" dust control measures and provide a revised strategy for on time attainment of the Ambient Air Quality Standards required by the federal Clean Air Act.

In support of those efforts, the Department commenced contractual actions on January 27, 1998 with the sole source award, of a three-year contract (Agreement No. 10390) to CH2M Hill in the amount of \$550,000 to provide scientific, technical and expert services. A Time and Material (T&M) contract was executed, which included agreed upon rates for the various CH2M Hill labor categories. The contract was increased to \$12,945,000 in January 1999 by Contract

Amendment No. 1 to include project management services. In February 2001 Contract Amendment No. 2 increased the contract period to 38 months, and increased the contract value by \$1,000,000, to a total of \$13,945,000. The City Attorney's office made a determination on May 22, 2000 and June 28, 2000 that there was no justification for awarding the remaining work for the OLDMP on a sole source basis and that the new scope should be offered for a competitive bid.

In August 2000, a Request for Proposal was issued for Owens Lake Dust Mitigation Environmental Program Management services. Parsons Engineering and CH2M Hill were the only two firms who submitted proposals. CH2M Hill was ranked number one and was awarded a three-year contract (Agreement No. 10001), which was funded in the amount of \$28 Million. The contract was authorized in January 2001 and executed in April 2001. Amendment No. 1 was requested in the amount of \$38 Million, but was approved for \$10 Million and included changes to the original contract language. On February 28, 2003 the contract was increased by \$17 Million in Amendment No. 2 to a total of \$55 Million. Amendment No. 3 authorized on April 6, 2004 increased the contract value to \$90 Million and extended the term of the Agreement to April 26, 2006. Amendment No. 4 authorized on October 19, 2004 was executed in March 2005. Amendment No. 5 authorized on or about February 28, 2006 and extended the contract expiration date from April 26, 2006 to July 26, 2006. The amendment removed the option to extend the term of the Agreement by two years and increased the expenditure limit by \$16 Million. The total contract value of \$90 Million was not increased. Amendment 6 was authorized on or about May 5, 2006 and extended the contract expiration date from July 26, 2006 to December 31, 2006. The contract amount was increased by \$2,600,000 and labor rates were reduced. The total contract value is currently at \$92,600,000. The amount awarded to CH2M Hill under both Agreements totaled \$106,545,000.

Objectives, Scope and Methodology

The scope identified in the Agreement for the performance review required expert examination, evaluation and assessment of LADWP Agreement Nos. 10390 and 10001 awarded to CH2M Hill, including all amendments, task letters, management and oversight thereof and consultant selection procedures. Best management practices along with added benchmarking activities were analyzed to recommend improvements and enhancements to the Owens Lake Dust Mitigation Program and the operation of the Department in regard to procurement, management and monitoring of contracts.

The review focused on the overall procurement process related to the two CH2M Hill agreements, including solicitation development, evaluation and award processes, contract and contractor monitoring, project management, contract administration, contract compliance, and MBE/WBE utilization. To achieve these objectives, the GCAP team made two visits to the Owens Lakebed, held over forty interviews and meetings with Department, CH2M Hill, and other public agency personnel and obtained and reviewed a significant number of documents from various sources, including the Department, CH2M Hill and other outside sources. The GCAP team submitted over ninety-nine document requests and also collected documents during interviews. Our team visited CH2M Hill offices in Santa Ana on numerous occasions to review CH2M Hill project files and collect relevant documents. The team had access to the Department files and records and collected relevant Department documents and information. The GCAP

team reviewed Department policies and procedures, Board Bulletins, City Charter and Codes, best practices manuals, Department audit reports, other water agency contracts, and other materials related to these Agreements.

Our review methodology includes the following:

Statistical Sampling of Invoices

The team recapped the results of the audits performed by the Department's Internal Audit and conducted random scientific samples covering the time period between February 2005 and April 2006 for Agreement No. 10001. The team assessed the integrity of the current billing and the adequacy of current invoice reviews. Our test was broken into three segments: labor, subcontracts, and expenses.

Labor Analysis

For Agreement No. 10001, the team randomly selected a 10% sample of 292 out of a universe of 2,929 line item labor billings in invoices submitted to the Department from February 1, 2005 through April 28, 2006. The review included verification that the labor rates billed are in accordance with contract terms and the hours are supported by the timesheets. The team also verified the mathematical accuracy of those charges to the project, assessed the integrity of CH2M Hill's timekeeping and billing systems, and the integrity of the timesheet data.

Subcontract Analysis

All subcontractor invoices were reviewed for the selected fifteen-month period for Agreement No. 10001. The tests performed determined whether labor charges are in accordance with contract terms and supported by timesheets. The team also tested for duplicate billings. During the review process, the team determined that additional reviews of subcontractor invoices, purchase orders and file documents were necessary. The GCAP team reviewed four CH2M Hill subcontractor files in detail based upon documentation that suggested a variance with contract terms and conditions.

For the review of subcontractor markup, the team requested purchase orders, invoices, and Accounts Payable verification of payment from CH2M Hill and some of its subcontractors and lower-tier subcontractors for Agreement Nos. 10390 and 10001. An analysis of this information was performed to calculate and project the markup that was unallowable under the two Agreements. The amount of markup was determined by calculating the difference in the rates charged by the lower-tier contractors and the amount charged to CH2M Hill and also included direct charges that were determined to be markup and unallowed markup of equipment and direct expenses.

Appendices B and C detail the markup that was identified or projected and the elements that were part of the analysis. A projection of the markup, based on documentation that was available, was performed in instances where the data was missing or incomplete. Most of the missing documentation was related to Agreement No. 10390, which expired in 2001. In some instances, CH2M Hill subcontractors declined to provide documents and cited the records retention clause in the earlier Agreement which only required access to records for "three years after final payment and until all disputes, appeals, litigation or claims have been resolved."

Expense Analysis

All expense invoices were reviewed for the selected fifteen-month period for Agreement No. 10001. Our tests were limited to determining whether expense charges were reasonable and comply with contract terms.

Task Order Review

A summary listing of all task orders for each contract was completed. This summary consists of key data points and descriptions for each task order issued under the CH2M Hill contracts. From this task order summary, a judgmental sample of task orders was selected for review. Nineteen (19) task orders from all phases of the project were selected for review. The task orders selected were based on inherent risk indicators such as a large number of changes, technical complexity or a significant increase in funding.

Interviews

The team interviewed project stakeholders about the various aspects of the project. The team developed an interview list. Interviews were conducted with individuals from the Department, CH2M Hill, subcontractors, and other public agencies.

Project Documents Review

An integral part of the review was to review project related documents for both the Department and CH2M Hill. Documents reviewed include the following:

- Cost, Schedule, and Project Control information
- Solicitations, memoranda, correspondence, proposals, negotiation files, change order documents, etc.
- Procurement related documents
- Project Management and planning documents, including reports and budgets
- Technical documents such as specifications, drawings, studies, reports, deliverables, audits, and other technical data
- CH2M Hill Subcontractor files

Processes/Procedures Review

Department processes were evaluated and documented. We have mapped several procurement processes. Department procedures and various regulations were reviewed to determine requirements. Our recommendations for improvements and best practices are based on our review of processes and procedures in place at the Department. The fieldwork for this review was performed from May 31, 2006 to May 4, 2007. These findings were presented to Department and CH2M Hill representatives.

Audit Findings

The audit findings have been organized into the following three sections:

- Section 1 – These findings address items concerning the Department’s procurement process related to Agreement Nos. 10390 and 10001.
- Section 2 – These findings address items concerning the Department’s management of Agreement Nos. 10390 and 10001.
- Section 3 – These findings address items concerning CH2M Hill’s management of Agreement Nos. 10390 and 10001.

SECTION 1 - Review of the LADWP Procurement Process

Reviews of contract files for Agreement Nos. 10390 and 10001 were performed. In addition, we reviewed various State of California Public Contract Code and Government Code sections applicable to municipalities, various Los Angeles City Charter and Administrative Code sections, and Department procedures to determine applicability and compliance. Interviews with Department staff and City Attorneys were also conducted to review and confirm interpretation and application of various codes. A contract analysis table was prepared comparing Agreement Nos. 10390, 10001 and LADWP contract Nos. 47514-6, 47515-6, 47516-6 and 47517-6 (See Appendix D).

Finding 1

The procurement process utilized for Agreement No. 10390 did not include sole source justifications or engender full and open competition.

Under the City Charter, competitive proposals shall be obtained as far as reasonably practicable and compatible with the City's interests (See, §372). Current Charter §371 (Charter §386 in 1999), Competitive Bidding; Competitive Sealed Proposals, allows for exceptions to the competitive bidding process under ten (10) exceptions. We found that Agreement No. 10390 was awarded without competition to CH2M Hill. We found no formal explanation or justification in the Board of Commissioner's resolution for awarding a sole source contract or for amending the contract to add new scope. Sole source contracts should include a separate justification and rationale for award and cite the applicable City Charter exception. Department form CCCS-04 (revised 6/06) currently addresses this practice.

The Board resolution stated that CH2M Hill was in a unique situation and that it would be impossible to complete the prototype research within the year if an RFP was issued. However, no exception to the City Charter's competitive bidding requirement was noted in the submittal requesting Board approval of a resolution to award Agreement No. 10390, nor in the executed resolution (No. 98125), nor in any of the amendment documents or contract files. Of the exceptions available, we believe there are two possible exceptions that could have been used. Exception under §371(e)(2) for the performance of professional, scientific, expert, technical, or other special services of a temporary and occasional character for which the Department finds that competitive bidding is not practicable or advantageous. The other possible exception, which we believe could have been used, is under §371(e) (10), which is available for the same type of services noted previously under §371(e) (2). This exception is a "catch all" and allows the Department to avoid competitive bidding when it would be undesirable, impractical or impossible.

The initial scope of work for Agreement No. 10390 for \$550,000 called for professional, scientific, technical and expert services. Amendment No. 1 to Agreement No. 10390 for Program Management services was executed for \$12 Million. We believe a contract amendment adding program management in the amount of \$12 Million to the scope of work to a contract for research services is likely considered a significant change, which is defined as a change that is beyond the scope of the original contract. This amendment should have been either competitively solicited or awarded separately as a sole source procurement. However, no sole

source justification for awarding the \$12 Million amendment without competition was found in the contract files.

Moreover, a CH2M Hill proposal estimating the approximate number of hours for Amendment No. 1 to Agreement No. 10390 for Program Management Services was not provided and one was not found in the contract files. In addition, no independent cost estimate was prepared internally to validate the total dollars budgeted. We found that independent cost estimates to support requests for additional funding were not routinely developed by Department staff.

Recommendations:

We recommend the following:

- The Corporate Purchasing Manual should be revised to provide possible justifications for sole/single source contracting (Section 3-D-6) as referenced in the City Charter requirements.
- Review of all contract amendments is currently conducted by Purchasing. This review should address issues of cardinal changes and require a separate contract for work outside the general scope of a contract.
- Department contracts should include a clause that identifies the type of changes allowed under the contract. These clauses usually include changes to the general scope of the contract, quantity, and schedule.
- Sole source justifications or explanations should be stated in Agreement approval documents.

Finding 2

The Request for Proposal (RFP) for Agreement No. 10001 was poorly structured, contained ambiguous wording, and was not developed from a standardized template.

Standardized Templates Not Used

In most large public organizations, the development of a solicitation is coordinated with procurement staff who are the “custodians” of electronic templates. Templates contain “boilerplate” instructions, guidelines and standard terms and conditions. Procurement staff also assist technical staff with the determination of solicitation type and then provide the appropriate template. This template has typically been developed in coordination with legal, procurement and the sponsoring departments. Once the need for procurement of a service is identified, the “sponsoring” department team tailors the appropriate template sections such as scope of services, schedule, special conditions, and evaluation criteria. All other sections of the template are kept in a “read-only” basis to maintain the integrity of the template. Under this approach, Procurement issues the solicitation, coordinates the receipt of bids or proposals, supports the evaluation effort and issues the resultant contract. The use of a library of templates significantly reduces the author’s time as well as the review time of legal and management staff. Consistency between the solicitation and the resulting contract is maintained and the risk of using risky contract clauses or omitting critical rights of the organization in solicitations is minimized.

We found that no template was used in the preparation of the solicitation that resulted in Agreement No. 10001. The RFP was developed and issued by the technical staff in the Water Resources Department on August 7, 2000. The pre-proposal meeting was held on August 9,

2000 and proposals were due on August 30, 2000. Thirty days is the usual response time for an RFP. For large, complex procurements the response time is frequently forty-five days at minimum. Short response times generally have the effect of limiting competition. In fact, only two proposers responded to the RFP.

We also found that the solicitation did not provide the criteria against which the proposers would be evaluated in the RFP. In interviews, Purchasing Department staff stated that they typically assist the Contract Administrator by reviewing the solicitation methodology selected, developing commercial terms, assisting with the development of evaluation criteria, and reviewing the technical specifications against a master template and the professional services template. Purchasing staff stated that they were not consulted or involved in the development, release or evaluation of this solicitation.

Conflicting RFP Language

We found that the RFP's sample agreement contained conflicting provisions in the area of markup. The subject of subcontractors was addressed in two separate places. On page 3 the paragraph entitled Subcontractors states that "The provisions of the Agreement shall apply to subcontractors in the same manner as to Consultant." The paragraph appears to direct that each provision and general condition of the Agreement be included in lower-tier subcontractors agreements. On page 5 in the paragraph entitled Outside Services (Subcontracts) the sample Agreement states "The Department will reimburse Consultant for bona fide expenses of outside services (subcontracts) when verified by written bills, invoices, or purchase orders, and when submitted with Consultant's monthly invoices. The Department will not reimburse Consultant for any indirect, add-on, or pass-through charges from any subcontractor." The bullet below that provision states "Consultant may invoice the Department for the cost of the work of its subcontractors plus a 10% markup." The second clause would appear to direct that markup be limited to the first tier of subcontractors because of the prohibition of "pass-through" charges but is ambiguous in light of the earlier provision which flows all the Agreements provisions to subcontractors. Based on discussions with Department staff, we found that the intent of Subcontracts paragraph on page 5 was to limit the markup to the first tier only. If the intent was to limit the markup costs to one tier only, that intent was unclear due to the other clause that was included in the sample RFP and final Agreement.

"Consultant may invoice the Department for the cost of the work of its subcontractors plus a 10% markup." The bullet under the Paragraph entitled Outside Services (Subcontracts) was omitted from the executed Agreement. The allowable markup percentage was addressed in that Agreement through inclusion Exhibit B – Compensation Schedule. In the category "Outside Services (Subcontract) Rates" the markup issue was addressed in an item which read "Subcontractor agreements approved in a task order"- rate 10%, unit markup." This language would appear to limit the markup to those subcontractors identified in the task order but as stated earlier, the language in the Subcontractors paragraph of the executed Agreement adds ambiguity to the issue. The Agreement does, however, clearly limit markup to 10%. (See Finding 17 for discussion of markup greater than 10%).

Recommendations:

We recommend the following:

- A library of standard solicitation templates and terms and conditions should be developed and made available on-line to Department staff and the contractor community.

- Guidelines to the development of clear specifications and scopes of services should be incorporated into the Purchasing Manual.
- Notifications of upcoming bids and proposal opportunities should be posted to provide potential bidders with the optimal amount of time to develop a response to a solicitation.
- To ensure transparency, evaluation criteria should be required for inclusion in all solicitations and should be listed at a minimum in the relative order of importance. Evaluation teams should be composed of a cross-section of personnel who will be involved in the project, including operations and maintenance personnel.
- An analysis of the use of Request for Qualifications should be initiated. A system similar to the City of Los Angeles Department of Public Works Personal Services Contract System (PSCS) should be implemented. That system tracks professional services contracts and is used to produce a monthly status report which details the contract ceiling, number of amendments, invoiced amounts to date and MBE/WBE utilization data.

Finding 3

Use of a Time & Materials task order versus a Fixed-Price task order may have increased the cost of the project.

A Time & Materials contract allows the contractor to be paid for all hours worked, up to a not to exceed amount and provides little incentive for cost control. Without a review of task order proposals to analyze the type of contract best suited for the work proposed, the Department could incur additional costs for services as contractors have little incentive to complete work for less than the hours provided in the task order.

The City Charter, Administrative Code, or Department procedures do not fully address the approval requirements or limitations of awarding of contract services using task order proposals under the Department's Task Management System TMS model. The TMS was utilized for Agreement Nos. 10390 and 10001. The TMS allows for task orders to be used throughout the contracting process for an Agreement. At the commencement of our review, the Department's contract administrator for the project had the authority to approve task order proposals up to the total value of the contract without additional approval by Department management or the Board.

Based on documents received, we identified 132 task orders issued under both agreements, with only five task orders issued as Fixed Price (FP) task orders. All others were awarded on a Time and Materials, not-to-exceed basis. None of the task orders included any specific justification or explanation for the payment method selected.

Based upon our discussions with Department staff, review of the Great Basin Memorandum of Agreement, State Implementation Plans, and the statement of works for both agreements, a task order based contract was reasonable for most of the work performed. However, although we found that some of the research types of tasks are good candidates for Time & Materials contracting, some of the tasks reviewed seemed well defined and have specific requirements. Based on our review, these tasks should have been contracted on a Fixed Price basis. We found that fixed price task orders could have been awarded for task orders approved in the later phases

of the project when “lessons learned” from earlier phases could have been incorporated and the work could have been more accurately defined. (e.g. design and bid package preparation).

Recommendations:

We recommend the following:

- Include specific justification or explanation for the payment method selected for each task order especially in Time & Material contracting.
- Develop more discrete statements of work to reduce the reliance on TMS procurements. When the use of TMS contracts are determined to be in the best interest of the Department, appropriate project controls administration should be made a part of the project management effort, independent of tracking performed by the contractor.

Finding 4

Department purchasing and contract administration procedures are not standardized and are not universally available to purchasing staff or contract administrators.

Clearly defined and communicated procurement procedures and protocols which are standardized and readily available to purchasing and project personnel in a central electronic repository are essential to effective contract administration. Staff responsible for the administration of contracts should have experience in the area of contract administration and be provided with on-going training to ensure that risks in procurement of goods and services are minimized. Changes to policy and procedures should be implemented through a structured configuration management process to ensure that no conflicting procedures are implemented.

Based upon our review we found:

- The Corporate Purchasing Procurement Manual has not been updated to reflect changes in the contracting process. The Manual has not been formally adopted due to IT support issues. The Manual appears not to be "reader friendly" for online or desk use.
- Current staff resources are insufficient to conduct timely and comprehensive training of contract administrators. There are only three professional services employees in purchasing to train the hundreds of contract administrators at the Department. Formal training has not been conducted for a number of years.
- Guidelines or procedures for the identification of contract administrators or guidelines, which define roles and responsibilities were not identified. Newly assigned contract administrators may contact more seasoned administrators for counsel and guidance.
- According to Corporate Purchasing Services staff, a training budget for contract administrators was requested in 2002-2005 but was denied. Some training monies have been recently allocated.

Recommendations:

We recommend that Purchasing procedures be made available online to all Department staff and that a large scale training project for contract administrators and purchasing personnel be initiated. The Department should utilize both live and computer-based training.

SECTION 2 – Review of LADWP Management of Owens Lake Project

Reviews of Department procurement procedures, Board Directives, General Manager Bulletins, and Department processes were conducted to determine the reasonableness of practices and to review internal controls employed throughout the contract management process for Agreement Nos. 10390 and 10001. Reviews and analysis of Department solicitations, agreements, task order documents, including task assignment proposals, Department approval letters, Department contract files, and contract deliverables have been performed.

Extensive interviews and fact finding sessions with the Department, CH2M Hill and subcontractors were conducted by telephone and in person at the John Ferraro Building in Los Angeles, the Owens Lake Bed site, and at CH2M Hill's offices in Santa Ana. Interviews on the Department's invoice processing procedures were conducted with the Department's OLDMP Project Management Office and Accounts Payable staff, which included the Assistant Director of Water Resources, who acts as the Contract Administrator and the Manager of Disbursement from Accounts Payable. A random 10% sample was selected for an analysis of invoiced labor of CH2M Hill labor charges for the period extending from February 1, 2005 through April 28, 2006. The sample universe consisted of line item CH2M Hill labor charges as listed on CH2M Hill invoices by task, by employee. There were 2,929 line items for this time period with a total value of \$9,649,593. Additionally, samples included analyzing invoiced costs for subcontractors and expenses.

Four contract administrators of large capital projects were interviewed including the Owens Lake Project Contract Administrator. We also interviewed the Director of Supply Chain Management, Water and Power Department Heads, various Purchasing department managers, and support personnel from accounts payable. Interview subject areas included technical approach, quality control and assurance, inspection, contract administration, change orders, contract monitoring and compliance, operations and maintenance, construction management and recommendations for improvement. The City Attorney Office at DWP was contacted to review and confirm interpretation and application of various codes and to obtain clarification of contract terms.

During our interviews, we developed process maps to document certain processes. These process maps were provided to Department staff for review and comment. The Task Management System, Personal and Professional Services contracting process, and Construction Contracts greater than \$150,000 have been reviewed and mapped. These maps are provided in Appendix E.

Finding 5

Standard protocols for project management and project controls were not consistently incorporated into the management of the Owens Lake Dust Mitigation Project.

Project Management Plan Not Developed

A project management plan or project charter should be developed by the project manager at project initiation to define the project's scope, approach, objectives, schedule, budget, controls, deliverables, and roles and responsibilities. According to the Project Management Institute Project Management Body of Knowledge (PMBOK), standard performance reporting includes

information about status, progress, and forecasting. Reports that contain information that compares the project objectives to the project status, explains variances from schedule and cost estimates, identifies risk triggers and impacts, problems and contemplated solution, estimates at completion and next steps should be submitted to the client on a regularly scheduled basis. According to the PMBOK, Project Managers for large projects should be provided with project management training and encouraged to obtain certifications that foster professionalism.

We found that the Department's Project Office did not develop an internal project plan. In December 1998, CH2M Hill developed a Project Management Plan (PMP) to describe their role on the project and to address the City's obligations under the revised State Implementation Plan (SIP). The SIP served as the guiding source document for the project. Based on our review, we found under Amendment 1 of Agreement No. 10390, that the PMP remained in draft form because it was stated that the plan would be modified as they gained experience on the lake. While project-chartering workshops were held on January 29, 1999 and August 22, 2001, we found that no update or modification to the PMP was ever made.

We also found that Task Order 01.1S.SP (later changed to 30.1SP) was issued in the amount of \$150,000 for the development of a long-range strategic plan. The task called for a workshop, strategy session, meetings, and the production of two long-range plan documents. The meetings were held and an 85% complete "Program Management Plan for OLDMP through 2006" document was provided to Water Resources management on January 22, 2001. The task order was cancelled after \$127,500 was expended and no final update to the project management/strategic plan was ever submitted.

Contractor Performance Reporting Requirements Could Be Improved Under Agreement No. 10001

Under Agreement No. 10390 the only reporting requirement for the OLDMP was for brief semi-annual letters. However, we found that in their above-mentioned OLDMP Program Plan CH2M Hill committed to and provided monthly, quarterly, and semi-annual reporting. Project monitoring and the implementation of project controls by the Department were evident at the beginning of the project. Our review identified that under this Agreement Department project controls were in place to review invoices, control the number of staff assigned to the Project and to ensure that required reporting was submitted in a timely manner.

Agreement No. 10001 only required the submittal of quarterly reports. We were advised by Water Resources management that the earlier reporting requirements were no longer needed and only a spreadsheet report, containing the budget, expenditures to date, percent spent, percent complete and project completion was required. We found, however, that this report was not submitted on a quarterly basis as required under the "Monitoring of the Work" section of the Agreement. Additionally, Water Resources staff waived the reporting terms of the Agreement and requested reports on as needed basis. The staff relied completely on this reporting from CH2M Hill. There was no internal project control system to track expenditures on the project. We found that the detailed monitoring that was attempted by the Department staff under the first Agreement was not evident under the second Agreement. One of the administrators who was consistently questioning contractor performance was removed from the Project.

Project Budget Documents Were Unclear and Inconsistent

Our review found that project documents were not clear and consistent in reporting the overall budget for the project prior to the award of Agreement No. 10390. An estimate of approximately

\$313 to \$440 million for 35 square miles on Owens Lake had been provided to the Department by another contractor. The December 1998 PMP included a budget that was estimated at \$77.4 million for construction costs and \$30.4 million for planning and engineering costs through 2006 for a total of \$107.8M. However, the former director of Water Services Organization stated that the estimate was an error and only included 16 square miles (53.6% of the originally contemplated 35 square miles), did not include project management or engineering costs and was valid only through 2003 because that was all that was understood at the time. The January 19, 1999 cover letter to the request for Amendment No. 1 to 10390 estimated “the cost of installation for these facilities will be in the order of \$100 million” in addition to approximately \$20 million for project management. In a memorandum dated June 5, 2000, the project costs were estimated at \$193 million over the next five years of the program. The current estimate for project completion is \$415 million.

Department Staffing Levels Were Insufficient

We found that the project was insufficiently staffed to properly manage and monitor a large and complex mitigation project. No one person at the Lakebed has on-site responsibility for all lakebed activities. A reduction in force took place at LADWP just prior to the commencement of the OLDMP project. Following the reduction, the Department instituted a hiring freeze. The Department does not have a mechanism to hire “as-needed”, short-term employees. The project would have normally been administered by Water Engineering and Technical Services (WETS) but was placed under the Water Resources organization where water policy and aqueduct issues of Mono/Inyo are handled. WETS typically deals with management, design and planning of capital water projects and may have provided additional support in the area of project management. According to the Water Resources Business Unit Organization Chart, the team that manages the contracts at Owens Lake currently includes the Assistant Director of Water Resources, two full-time engineers, who act as contract administrator and assistant contract administrator for the construction management team, and one administrative support staff person. An on-site Waterworks Engineer is also assigned to the project.

Recommendations:

We recommend the following items:

- The Department should develop department-wide project management procedures and related training for contract administrators and project managers. Managers of large capital projects should be encouraged to obtain Project Management Professional (PMP) certifications.
- A PMP or project charter be developed by the project manager to define the project’s scope, approach, objectives, schedule, budget, deliverables, roles and responsibilities, risks and possible mitigations and dependencies that can influence the project’s success.
- Improve project performance reporting to provide better oversight and accountability of the project.
- Executive staff and the LADWP Board of Commissioners should be provided with regular monthly progress on this large, complex project, which had significant financial, policy and compliance issues.
- Standardized contract reporting templates should be developed to provide meaningful performance status to stakeholders and Department staff with oversight responsibilities.
- That the Department develop written procedure for waiver of specifications and that all waivers to specification are required to be reported to the Board at monthly meetings.

Finding 6

The Department did not verify that labor rates proposed by CH2M Hill and its subcontractors under Agreement No. 10390 and 10001 were fair and reasonable.

Whenever a public agency issues a contract on a basis of other than low bidder, that agency should, as a matter of public trust, perform a price or cost analysis to ensure that proposed prices are fair and reasonable. A cost or price analysis is required of Federal agencies and is generally practiced by state and local agencies. A cost or price analysis applies to both the prime contractor and its major subcontractors.

The Department did not perform a price or cost analysis to establish fair and reasonable prices for Agreement Nos. 10390 and 10001. LADWP procurement procedures do not require that a price or cost analysis be performed. Without such procedures, the Department may pay more than it should for services under such contracts. In January 1998, the Department awarded Agreement No. 10390 on a sole source basis without a cost or price analysis of CH2M Hill labor rates. The Department obtained competition for Agreement No. 10001, but awarded the contract to CH2M Hill in April 2001 based on its qualifications even though its labor rates were 21% higher than the only other competitor. Moreover, we noted in the contract files that the Department subsequently negotiated labor rates with CH2M Hill that exceeded CH2M Hill's proposed rates by about 10 percent. There was no documentation in the contract files evidencing that a cost and price analysis was performed justifying the increase in proposed rates.

Neither Agreement included labor rates for subcontractors until Amendment 6, which was submitted to the Board in May 2006. The LADWP Internal Audit Department conducted a cost analysis of CH2M Hill and three subcontractor proposed labor rates for Amendment 6 to Agreement No. 10001. This audit concluded that CH2M Hill's rates were reasonable, but recommended adjustments to some of the proposed subcontractor rates.

Recommendations:

The Department should establish a policy of conducting a price or cost analysis for the prime contractor and major subcontractors of all professional services contracts. Contracting officers should also be required to certify that the contracted rates were found to be fair and reasonable.

Finding 7

Markups on reimbursable expenses and subcontractor costs allowed under Agreement No. 10001 were found to be excessive compared to other local government agencies.

Agreement No. 10001 included an allowance for a 10% markup on subcontractor costs. As of April 28, 2006, Department subcontractor costs under Agreement No. 10001 totaled over \$20 million. Thus, markups paid on subcontract costs totaled approximately \$2 million. A markup at a more reasonable rate of 5% would have saved the Department about \$1 million in markup fees. In fact, Amendment 6 to Agreement No. 10001 dated May 8, 2006 decreased the subcontractor markup to 5%, and the Department Board approval letter for proposed Agreements No. 47514-6, No. 47515-6, and No. 47517-6 allows only a 5% subcontract markup.

A markup or fee on subcontractor cost can appropriately be provided on the basis of risk to the prime contractor. Under circumstances where the prime is held accountable for the work of the subcontractor and there are risks associated with that accountability, then markup is justified. However, for a cost type contract such as Agreement No. 10001, the risk to the prime contractor is considered low, therefore, markup allowed should reflect the level of risk. Similar governmental professional services contracts generally provide for a markup of 5% or less. For example, the Los Angeles County Metropolitan Transportation Authority generally limits markup on subcontractor costs to 3% unless the contractor can demonstrate and justify a higher rate. The Southern California Regional Rail Authority allows a fixed fee on its costs type contracts of 1 % to 5% of the estimated subcontract costs. The Metropolitan Water District negotiates markup on a case-by-case basis and recent negotiations for cost type, professional service contracts were negotiated at 3%. The Orange County Transportation Authority (OCTA) did not allow any markup on subcontract costs under a Time and Material, Project Management services contract for a large transportation project. Markups on subcontract costs under San Diego County Water Authority professional service contracts generally do not exceed 5%. Lastly, Caltrans generally does not allow a markup on subcontract costs under its professional service contracts.

Recommendations:

We recommend that the Department discontinue its practice of providing markup on subcontract costs, and replace that practice with a policy of providing a markup for profit on subcontractor costs when justified on the basis of risk.

Finding 8

Improved controls are required to ensure that Task Orders billing limits are not exceeded.

Under Agreement No. 10390 and 10001, Task Orders were issued on a not to exceed amount basis. Adequate internal control procedures under task order contracts require the agency to maintain its own independent record of amounts paid to ensure that task order limits are not exceeded. In addition, the contractor should be notified when incurred costs are at 75 and 90 percent of authorized funding levels. Such notification triggers the agency to assess the adequacy of remaining funds so that if additional funds are needed and justified the authorization process can begin without impeding the progress of the work.

The Department did not maintain a record of the amount it paid for Task Orders under Agreement No. 10390 and 10001 to ensure that Task Order limits were not exceeded. We noted several instances where Task Order limits had been exceeded, and the contractor worked without authorized funds until the Department granted retroactive authorizations. The Department relied on summary invoice to date data included in CH2M Hill's monthly invoice. CH2M Hill's invoices show by Task Order the amount invoiced to date and the remaining balance. Although the Department does record what it paid each month by Task Order in an independent record, it cannot attest to the validity of the summary data shown in CH2M Hill invoices.

Both Agreement Nos. 10390 and 10001 require that the contractor notify the Department when it has used 25, 50 or 75 percent of the funds authorized under each Task Order. Despite this

contractual requirement, CH2M Hill provided such data only when requested by the Department, and the Department has considered this requested data as meeting notification requirements under the Agreements.

Recommendations:

We recommend the following:

- The Department should maintain its own record of amounts paid by Task Order and consider ways of automatically limiting payments to authorized Task Order Not to Exceed levels through accounting system controls.
- The Department should enforce the contractual requirement of the contractor reporting expenditure notification thresholds of 25, 50 and 75 percent of the funds authorized.

Finding 9

The Department's invoice processing procedure for the Owens Lake Dust Mitigation Program is duplicative, incomplete, and inefficient.

Adequate internal controls over invoice processing should require formal written invoice processing procedures showing the various steps and tests necessary to ensure the validity or accuracy of the invoice package. The procedures should also identify the individuals responsible for performing such tests and detail when the tests should be performed during the invoice review process. Such procedures establish accountability and provide for easier transition from existing staff to new staff. Additionally, checklists containing certain basic review procedures help formalize invoice processing procedures as well as provide documentation that those procedures were followed. Checklists also help to establish accountability for having performed required procedures and may prevent duplicated effort by various people in the review process. Such information provides assurance that the package is complete and ready for payment.

Invoice processing under the Owens Lake Dust Mitigation Program is performed by the Department's Project Management and by LADWP Accounts Payable. We noted that both perform essentially the same tests. Project management performs tests on a spot check basis and Accounts Payable does a 100% review. Both departments test labor rates, verify hours to time sheets, and verify the mathematical accuracy of invoices. Neither used an invoice review checklist or other techniques to show the various tests performed or items verified. Technical staff does not review invoices to verify performance nor are they reviewed by Program Management to determine whether billed work was performed within the time period authorized by the Task Order.

The duplication of effort between Project Management and Accounts Payable, by itself, is not necessarily inefficient. But the order of this review diminishes its effectiveness. Spot checks performed by management during their final review and signoff on invoices serve as a test of the integrity of the invoice process system. But under this project, Program Management performs their review prior to the 100 percent review performed by Accounts Payable.

Recommendations:

We recommend the following:

- The Department should establish written invoice processing procedures and develop an invoice processing checklist. These procedures should require 1) tests to ensure that costs billed beyond the authorized period of Task Order performance are not paid, and 2) an assessment by technical staff in regard to Task Order performance versus amounts billed.
- If Program Management continues to perform spot verification and mathematical tests, that those tests be performed as a test of the integrity of the process after Accounts Payable has performed its 100% review.
- A sample invoice should be included in all solicitation packages. The invoice sample should require a task order period and the cumulative amount invoiced to date under each task order.

Finding 10

Department management and oversight of Task Order billings need improvement. We found CH2M Hill billed \$330,136 of questionable labor and \$13,884 of questionable expenses for Task Orders during the period February 1, 2005 through April 28, 2006. In addition, we found 18% of billed labor was for positions not included in approved Task Orders.

Our sample projection of CH2M Hill labor charges for invoices covering the period February 1, 2005 through April 28, 2006 found that \$330,136 of the billed labor charges for work performed was incurred outside Task Order authorized performance periods. Based on our sample testing, we identified \$34,415 out of \$1,005,925 or 3.4% of billed labor was for labor time charged outside of the Task Order authorized performance periods. Billings over six months after services are rendered are not allowed under the terms of Agreement No. 10001. We projected our test results to the sample universe and determined that CH2M Hill billed labor costs totaling \$330,136 for work outside of the Task Order authorized performance periods. Based on 100% testing of billed expenses, we also found \$13,884 (or 4%) of billed expenses was for expenses charged outside of Task Order performance periods.

Time charges outside the performance period of a Task Order generally involved Task Orders for which the period of performance had expired. Such charges are unauthorized and thus are questioned under this review. For example, CH2M Hill's billings for December 2005 included charges for a task with a period of performance ending date of September 1, 2004. (Task Number 24.6CNX for the development of Operations and a Maintenance Manual for the North Sand Sheet Shallow Flooding).

Under the terms of Agreement No. 10001, if consultant anticipates that additional work, fees, time, or expenses are needed to complete a task assignment, consultant shall promptly inform the Department in writing and the parties may then negotiate a revision to the task assignment.

Our sample also showed that 18% of billed labor was for positions not included in the approved Task Order. Positions not included in the Task Order generally involved Task Orders where CH2M Hill prepared the Task Order estimate using one or two position levels without

identifying individual name or descriptive work categories. Time and Material Task Order estimates should be prepared with as much labor detail as practical. As a minimum, the estimate should include descriptive work titles along with pay levels and rates for the majority of staff to be involved in the work. Such detail helps to ensure the accuracy of the estimates and provides a control mechanism for ensuring the accuracy of time charged to the Task, and the quality of staff performing the work.

We noted that the Department's Internal Audit division had identified an issue whereby CH2M Hill used higher position levels in the performance of the Tasks than was included in the Task Order estimate. This resulted in the Task Order using its funding authorization faster than anticipated. Consequently, the Task Order had to be amended.

Recommendations:

We recommend the following:

- The Department should consider disallowing labor billings of \$330,136 and expense billings of \$13,884 for charges outside of Task Order authorized performance periods.
- The Department should require Prime and subcontractors to identify authorized Task Order performance periods in its invoices and summarize costs incurred during previous invoices for expired Task Orders separate from active Task Orders.
- The Department should require prime and subcontractors to prepare Task Order estimates that include descriptive work titles along with pay levels and rates for the majority of staff planned for a Task Order. If possible, CH2M Hill should identify specific staff that will be working on the Task Order.

Finding 11

Contract compliance monitoring was very limited on the project and no effort was made to ensure that MBE/WBE's were serving a commercially useful function.

MBE/WBE compliance processes are developed to ensure that good faith efforts are utilized to identify qualified MBE/WBE firms for required work. Monitoring of MBE/WBE programs typically incorporates the following elements:

- Routine reporting of MBE/WBE utilization of qualified firms and the payment to those firms for work performed.
- Identifying responsibility for verification with staff that is most familiar with the MBE/WBE requirements.
- Setting MBE/WBE utilization goals based on the review and determination of available firms for specific projects.
- Ensuring MBE/WBEs serve a commercially valuable function for work performed.

Based on our review, we found that contract compliance monitoring was limited to receipt of "MBE/WBE Summary" submittals, which were required on a monthly basis. The Contract Administrator was required to provide the submittals to Contract Compliance on a quarterly basis; however, submittals were frequently not submitted unless some initiating circumstance occurred, such as a change order or contract amendment.

We found that CH2M Hill did not regularly submit monthly MBE/WBE expenditure reports as required in the agreement. Early on in the project, there were written documentation requests by one of the Contract Administrators attempting to enforce the MBE/WBE clause in the agreement. However, as the project progressed, we found no evidence of regular monitoring nor compliance with the submittal of monthly MBE/WBE expenditure reports.

Contract Compliance personnel had no contact with the consultant or subconsultants unless a substitution issue developed. The goals for MBE/WBE utilization are overall Department goals and were applied to the OLDMP without analysis of the scope of effort that could be subcontracted. We found that some contracts were issued to first tier MBE/WBE's on a "pass-through" basis wherein no substantive work was performed by the first tier.

Recommendations:

We recommend the following:

- MBE/WBE compliance should be managed by staff that understands the program requirements.
- Contract Compliance staff should be included in the early stages of a project to gain understanding of MBE/WBE firms involvement.
- The MBE/WBE utilization goals for large professional services projects should be established based on known or surveyed availability of MBE/WBE firms to perform the work.

Finding 12

Legal services were procured without the approval of the City Attorney.

In accordance with Section 275 of the City Charter, Departments seeking to procure legal services must first obtain the consent of the City Attorney. The law firm of Downey Brand, LLC was retained by CH2M Hill to represent and provide legal services for the Department in connection with environmental issues on the Owens Lakebed Dust Mitigation Project in the amount of \$108,776. Documents reviewed indicate that CH2M Hill retained the services of Downey Brand at the direction and with the approval of the Department. CH2M Hill also contracted for professional services with the law firm of Baise & Miller P.C. in the amount of \$6,128.

Water Resources staff stated that the services sought from these firms were not "legal services" as defined by the City Charter. However, based on our review of invoices submitted by the firms to CH2M Hill, we found repeated references to "drafting legal support", "providing legal support", "researched additional authority for legal position", "researched legal issues involved" etc.

The City Attorney's office stated that they had not been made aware of these services at the time they were performed and that the policy of the City requires that all legal services for the City are procured by the City Attorney.

Recommendations:

Department staff should consult with and gain approval from the City Attorney’s office before legal and technical advice provided from law firms are procured. We also recommend that the City charter procurement requirements should be incorporated into the course syllabus for project manager and contract administrator training.

Finding 13

We found no evidence that the Department reviewed design costs over the course of the project.

As uncertainty in the project requirements declined over time, the ability to more efficiently define these requirements should increase. The baseline used in previous solicitations under this project should have served to reduce the costs in subsequent solicitations. The cost of Design Packages for shallow flooding did not decrease significantly over time. In a letter dated April 2000, the CH2M Hill Project Manager wrote that “if the cost of DBO package development was \$5,000,000 in 1999, then it was assumed that DBO package development in subsequent years would be on the order of ½ the cost in 1999 due to greater understanding of Department DBO package requirements.” Although the use of the DBO project procurement method was replaced by the more traditional design, bid, build framework, the basic shallow flooding design was incorporated in Phase 1, Phase 2, and Phase 4. The design changed for Phase V. Changes to the design were incorporated in each phase as more was learned about the performance of the bubblers vs. “ponding”. We found that the design cost for Phase II were high, given that the Barnard-Boyle team produced the final design for shallow flooding under the design-build contract. There was no evidence that the Department tracked design costs to confirm reduce costs in subsequent packages. The design costs by shallow flooding phase are as follows:

Project Phase/Description	Task Order Number/Cost
I-Shallow Flooding (30%) – preliminary design - DBO design	24.4/ \$859,865
II-Shallow Flooding (100%) Design	25.4A/ \$2,109,500
IV-Shallow Flooding, Managed Vegetation, Gravel and Infrastructure to connect Southern Zones and North Sand Sheet (100%) Design	44.4C/ \$6,300,000
V- Shallow Flooding (100%) Design	46.4D/ \$3,434,000

Recommendations:

Design engineering estimates should be reviewed on task order projects to determine if efficiencies have been incorporated into subsequent estimates for the same or similar work. Analyze design engineering costs using various metrics to determine if similar design costs decrease over a long-term project.

SECTION 3 - CH2M Hill's Management of Owens Lake Project

Reviews of CH2M Hill practices under Agreement Nos. 10390 and 10001 were conducted to determine the adequacy the following:

- Technical approach
- Internal controls
- Construction oversight
- Compliance with contract terms and conditions.

The documents reviewed included task orders, design drawings and specifications, change orders requests and approvals, technical memoranda, engineering estimates, and inspection reports and purchase order file documentation. We have identified nineteen (19) task orders, which were reviewed in detail for technical and contractual compliance from Agreement Nos. 10390 and 10001 (See Appendix F).

A review of staff qualifications was completed. We selected staff identified in task orders reviewed, as well as, field inspectors performing work at Owens Lake. Based on our reviews, we found staff were qualified to perform the work.

The team visited the Owens Lake site on two separate occasions during the course of the review. While at the Lake, a tour of the entire Lakebed and all Phase areas were viewed. The SCADA system was demonstrated and personnel responsible for SCADA operations were interviewed. We interviewed CH2M Hill, and other contractors while at Owens Lake. Interviews subject areas include the quality assurance process, inspection process, change order process, and construction management processes.

The team interviewed CH2M Hill project manager, chief engineer, and procurement staff at the CH2M Hill Santa Ana office. Reviews of project files were performed at CH2M Hill's Santa Ana office.

Finding 14

CH2M Hill improperly applied cash discounts in the amount of \$606,516 for work performed in excess of Task Order authorized limits.

As of April 28, 2006 LADWP had paid CH2M Hill \$606,516 for invoiced amounts that exceeded Task Order authorized levels on thirty (30) different Task Orders. Of this amount, CH2M Hill applied \$603,530 of cash discount credits for those Task Orders to fund the amount billed above the Task Order authorized limits.

Agreement No. 10001 states that CH2M Hill shall not invoice the Department for any amount greater than a task's expenditure limit. The Agreement also requires that CH2M Hill provide a cash discount percentage for payment of invoices made by the Department within 30 days. There is no provision in the contract that states that the providing of these discounts constitutes an increase in the authorized invoice amount under a Task Order.

It is standard practice by government agencies to establish ceilings for task orders issued under contracts and to limit payment to approved task order limits. Such limits can serve as an effective cost control.

Based on discussions with DWP about the administration of the cash discount, it was unclear whether or not an agreement had been reached with CH2M Hill allowing billings greater than the task order limit due to the cash discount contract clause.

Recommendations:

The Department should determine whether authorization was granted to allow CH2M Hill to invoice for amounts greater than the Task order limits due to the cash discount contract clause. If authorization was not granted, the Department should then seek recovery of the \$606,516 in billed costs in excess of Task Order Authorized amounts.

Finding 15

CH2M Hill invoiced direct costs totaling \$477,740 for subcontract management and also invoiced markup on subcontractor costs.

Agreement No. 10001 allowed CH2M Hill to markup its subcontractor costs by 10%. Department project staff stated that the purpose of subcontract markups was to reimburse CH2M Hill for the administrative costs associated with handling subcontractors. As of April 28, 2006, Department subcontract costs under Agreement No. 10001 totaled over \$20 million. Thus, markups paid to CH2M Hill on subcontract costs total approximately \$2 million.

CH2M Hill was also paid for a Task Order under Agreement No. 10001 that we believe duplicates the reimbursement for subcontract administrative costs. A Task Order under Agreement No. 10001 was issued for subcontract management (20.1A.20) with a budgeted amount of \$556,500. As of March 31, 2006, CH2M Hill invoiced a total \$477,740 under this task order for subcontract management. As indicated above, CH2M Hill's administrative costs associated with processing its DWP invoices including subcontractor charges were already billed as part of the 10% markup allowed under Agreement No. 10001.

CH2M Hill states that, contrary to LADWP's position, subcontract markups are fees rather than administrative cost reimbursements. CH2M Hill's position is that the administrative costs associated with handling subcontractors under its LADWP contracts are direct costs per its accounting system.

Recommendations:

The Department should consider seeking recovery of the \$477,740 of costs paid CH2M Hill for subcontract management because the 10% markup provided CH2M Hill on subcontract costs was intended to cover the administrative costs of handling subcontractors.

Finding 16

We questioned \$398,107 of charges in CH2M Hill's subcontractor billings for the period February 1, 2005 through April 28, 2006 based on a 100% review of subcontractor invoices. The \$398,107 represents about 5.4% of the subcontractor billings for this period.

We found \$284,199 of billed subcontractor charges was for work performed outside of Task Order performance periods. These charges generally involved Task Orders for which the period of performance had already expired. Such billings are not allowed under the terms of Agreement No. 10001. Included in these questioned costs is \$75,222 of charges that were out of period based on data provided at the time our initial review, but were within the period of performance based on changes authorized on April 26, 2006. We continue to question these costs because the amendments were authorized on average 397 days after the costs were incurred and 585 days after the Task Order had expired. Also included in these questioned costs is \$94,142 of subcontractor charges more than 6 months after the subcontractor did the work that was also for effort outside of Task Order performance periods.

Our review also showed that CH2M Hill billed LADWP \$65,441 of subcontractor charges more than 6 months after the subcontractor did the work. The oldest charges were billed 12 months after the work was done and on average the billings were 8 months old. Payment for effort performed more than 6 months prior to invoicing are not allowed under the terms of Agreement No. 10001.

Lastly, our review showed that CH2M Hill billed LADWP \$48,467 of subcontractor charges at labor rates in excess of rates approved in CH2M Hill purchase orders with subcontractors.

Recommendations:

We recommend that the Department consider disallowing \$398,107 in questioned subcontractor billings. The Department should also require CH2M Hill and other consultants to identify authorized Task Order performance periods in its invoices and summarize costs incurred during previous invoices for expired Task Orders separate from active Task Orders.

Finding 17

Markup on second tier subcontractor costs under Agreements Nos. 10390 and 10001 were found to be excessive.

An estimated \$116,814 of unallowable markup on subcontractor costs was paid by the Department under Agreement No. 10390 and \$627,405 was paid by the Department under Agreement No. 10001. The markup provides CH2M Hill with additional profit and is not justifiable as a reimbursement of contractor administrative costs. The analysis performed identified \$570,368 of unallowable billed markup by CH2M Hill's 1st tier subcontractors of lower tier subcontractors which was greater than the "allowable" 10% under Agreement No. 10001. An additional \$57,037 was identified as unallowable markup by CH2M Hill because of the disallowance of markup by the lower tier subcontractors. Appendices B and C detail the markup that was identified or projected and the elements that were part of the analysis.

The total markup of 2nd tier subcontractor costs under Agreement No. 10001 was \$1,422,324. It should be noted that Agreement No. 10001 states in Section 2-Compensation that, "The Department will not reimburse Consultant for any indirect, add-on, or pass-through charges from any subcontractor". We found that this language as written was intended to limit subcontractor markup to the 1st tier only. Exhibit B of the Agreement references a 10% markup for outside services (subcontractor). Because of the conflict between the two references to markup, we were unable to clearly find that the Department should pursue recovery of the total markup of subcontractors by 1st tier subcontractors under this Agreement.

Project staff stated that the purpose of subcontract and expense markups was to reimburse CH2M Hill for the administrative costs associated with handling subcontractors and processing expenses reimbursement requests. CH2M Hill states that, contrary to LADWP's belief, subcontract and expense markups are fees (profit) rather than administrative cost reimbursements. The administrative costs associated with handling CH2M Hill subcontractors and processing expense invoices under its LADWP contracts are direct costs per CH2M Hill's accounting system. CH2M Hill's administrative costs associated with processing its LADWP expense invoices have been billed directly to LADWP under Agreement No. 10001

A markup or fee on subcontract cost can appropriately be provided on the basis of risk to the prime contractor. However under a cost type contract such as Agreement Nos. 10390 and 10001 these risks are low.

LADWP Agreement No. 10390 only allowed a \$10 markup per subcontract. Paragraph 6.7 of Agreement No. 10390 states that "The Department will reimburse the Consultant for the actual cost plus a nominal fee of no more than ten (10) dollars for the services of a subcontractor, as set forth in the task assignment, for performing services of the character covered by this Agreement provided, however, that no such services of a subcontractor shall be incurred by the Consultant without the prior approval of the Director of Water Services, or the Office of the City Attorney as the case may be, as to the subcontractor, the maximum cost, and the work to be performed. The nominal fee in addition to the actual cost is intended for normal administration of the subcontractor."

LADWP Agreement No. 10001 allowed a 10% markup of subcontractors for outside services. There were conflicting clauses in the Agreement (see Finding 2) but the language clearly did not allow markup that exceeded 10%. The Request for Proposal issued for Agreement No. 10001 included the allowance of a ten percent markup for subcontractor costs and other expenses. The solicitation did not include an explanation of the items included for the markup or the purpose of such markup on subcontractor costs. The 10% markup on subcontract costs is higher than what is normally paid when markup is justified as a fee on a cost-reimbursable type contract such as Agreement No. 10001.

During the course of the review, documents were identified that illustrated that unallowable markup of lower-tier contractors had been charged and paid on both Agreements 10390 and Agreement No. 10001. The LADWP Board of Commissioners were made aware of these findings and requested that GCAP Services, Inc. perform a detailed review of all subcontractors to CH2M Hill under LADWP Agreement Nos. 10390 and 10001. Specific subcontractor findings were provided to subcontractors for review and comment. Not all subcontractors responded to our request for comments concerning our draft findings. This detailed markup review was conducted from February 2007 until May 4, 2007.

Recommendations:

We recommend the following:

- The Department should describe the purpose for providing Markup on subcontract cost and direct expenses by clearly identifying items intended to be covered under these and negotiate the percentage of markup that will be allowed under the Agreement.
- Items covered by the Markup factor should be excluded from direct billings.
- We also recommend that the Department remove references to markup allowances from all professional service solicitations. If contractors propose fees or markup rates in their proposals, the Department should make an assessment of such proposed rates to determine whether or not they are appropriate.

Finding 18

The provision of acceptable “as-built” construction drawing records for test wires and anodes installed by the construction contractor was not confirmed by CH2M Hill Construction Management staff in a timely manner and led to the expenditure of additional resources. Department Operations staff also identified problems with locating “as-built” drawings.

LADWP Specification 9544, Division F4, Article 19 “As-Built Drawings” requires that “the Contractor shall prepare and submit as-built drawings showing all installed equipment and facilities as designed and constructed.” The Construction Manager is responsible for assuring that these submittals required under the contract are provided as required and in a timely manner. Complete and accurate as-built drawings are a key reference for future maintenance of the project and ensure that costs are kept to a minimum when future alterations, additions or repairs are required.

In the Operations and Maintenance Manual completed in September 2005 by CH2M Hill the Corrosion Protection Section 10.2.1.1 entitled “Buried Components” states the “the record drawings do not show the exact configuration or location of the test wires and anodes.” During interviews and in response to questions asked of Department staff and CH2M Hill consultants who worked on the lakebed indicated the construction contractor had not entered anode location information into the record drawings and that a significant effort to get the anode locations mapped and identified had taken place. Department staff also stated that at the time the O&M Manual was written the exact locations had not been entered into the record drawings. CH2M Hill stated that location surveys were conducted and the anode location information was provided by the contractor at no extra cost. However, in interviews conducted we were advised that the mapping took a “huge” effort that required the expenditure of additional resources by LADWP staff and at least one subconsultant.

Department Operations personnel at Owens Lakebed indicated that “as-built” drawings for lakebed equipment such as pipes and conduit locations frequently could not be found.

Recommendations:

We recommend the following:

- The project manager should ensure routine monitoring of the Construction Manager's tracking of as-built submittals.
- Contract language be developed in the Construction Management contracts and Construction contracts to strengthen the required submittal of as-builts.

Finding 19

The Fiberglass Pipe to North Sand Sheet Shallow Flooding Area at Owens Lake did not meet pressure-testing requirements.

We found that the as-constructed pressure rating of the fiberglass-reinforced pipe does not fulfill the Department's specifications. Interviews with Department staff raised issues concerning the fiberglass pipe testing at the North Sand Sheet phase. A review of project files was performed and it was determined that initial testing requirements were not met because of excessive leaking. Subsequent testing fell considerably short of the test required by the specifications.

Based on interviews with CH2M Hill, the problem was a concern that the pipe would appear to fail because they were testing with the valves in place. Although this was a valid concern, the required test was not performed. The pressure test was a requirement that the contractor was aware of when they accepted the contract and should have allowed additional time for the pressure testing. We requested, but did not receive the calculations showing the pressure rating and were unable to determine the exact pressure rating for the pipe used. The Department Project Manager stated that the Department had waived the specification requirement.

See **Appendix G** for details included in our technical report concerning this finding.

Recommendation:

Develop written procedures for deviations to specifications and require approval by Department Management other than the project manager.

Appendix A
Best Practices

Appendix A

Best Practices

SECTION 1 - Review of LADWP Procurement Process

1. Sole Source contracts should include a separate justification and rationale for award and cite the applicable City Charter exception. All Department sole source contract actions should use Department form CCCS-04 (revised 6/06).
2. A new contract should be executed for any added services that are beyond the general scope of the contract. This can be done as a sole source procurement if exceptions to the competitive bidding process allow for sole source procurement.
3. The use of standard templates for the development of solicitations and contracts allow for standardized contract language and expedites the procurement processing. Templates can be published online to provide basic information about “how to do business” with the Department. Any deviations to the templates can be reviewed by the City Attorney’s office. A library of standard solicitation templates and terms and conditions should be used and made available on-line to the Department staff.
4. Solicitations should provide for at least 30 days to respond. Pre-proposal meetings should provide prospective respondents with available documents. A forty-five (45) day proposal response duration would be preferable for larger complex projects. Notifications of planned and future upcoming bids and proposal opportunities should be posted to provide potential bidders with the optimal amount of time to develop a response to a solicitation.
5. A Statement of Work should detail all tasks the contractor should perform and include a project schedule. It should identify the service to be provided, the design standards and specifications to be used, a description of “what is to be left standing” when the project is completed and describe the work to be done to provide the desired results.
6. All reference documents that pertain to a solicitation should be listed and provided for review prior to proposal submittal due dates.
7. A notice of intent to bid or propose is often included in solicitations so that those requesting services are made aware of the adequacy of competition prior to due date of bids or proposals. If only a few intention letters are received, efforts can be initiated to determine the reason for lack of interest in the procurement or to conduct additional outreach and advertising.
8. The practice of publishing the relative importance of evaluation criteria should be considered. This practice ensures that proposers are aware of what is important to the

Department so that no one can allege that the process was created to achieve a specific result. It also allows the contractor to assess whether or not it can compete prior to expending funds on the proposal.

9. A qualification based selection process should be used to procure professional services, such as architectural, landscape architectural, engineering, environmental, land surveying, or construction project management. Emphasis should be placed on demonstrated competence and qualifications when selecting firms for these types of services.
10. Procurement status and contract administration information is a key element of an organization's Management Information System.
11. Contract types are determined based on the risk associated with the work to be performed. The more complete the statement of work, the more likely that performance risk is reduced. When the work to be performed is well documented fixed price contracts should be utilized.
12. Approval matrices should be developed for review of higher dollar and higher risk procurements to ensure the proper review by management, that City Charter required approvals are followed, and to provide independent review of procurements.
13. Purchasing manuals should be developed and placed online to be available for all staff within the organization.
14. Staff responsible for the administration of contracts should possess adequate experience in contract administration and should be provided with on-going training to ensure that risks in procurement of goods and services are minimized.
15. Changes to policy and procedures are implemented through a structured process ensuring adequate configuration management and reviews are performed prior to updating or changing practices.
16. Policy and Procedures should be reviewed routinely to update for regulatory and Department changes.
17. Training should be provided to Stakeholders through a developed training program that typically incorporates both live and computer-based training modules.
18. Subcontractor hourly rates should be included in the proposals to assess reasonableness of subcontractor costs.
19. A pre-award audit should be performed for projects this size to assess reasonableness of the cost proposal. This should include verifying labor rates of staff proposed, reasonableness of overhead rate per FAR, and assessing adequacy of accounting and billing systems.

SECTION 2 – Review of LADWP Management of Owens Lake Project

Items 1-6 are according to the Project Management Body of Knowledge (PMBOK) published by the Project Management Institute.

1. A project management plan or project charter is developed by the organizations project manager at project initiation to define the project's scope, approach, objectives, schedule, budget, deliverables, roles and responsibilities, risks and possible mitigations and dependencies that can influence the project's success.
2. Standard performance reporting should include information about status, progress, and forecasting. Reports should contain information that compare the project objectives to the project status, explains variances from schedule and cost estimates, identifies risk triggers and impacts, problems and contemplated solution, estimates at completion and next steps.
3. Project Managers for large projects should be provided project management training and are encouraged to obtain certifications that foster professionalism.
4. Waivers or changes to specification requirements should be processed through a written process. Approval of waivers to specifications should be required by a multi-disciplinary review board that is not directly involved in the day-to-day management of the project. Reporting of significant waivers should be provided to the Department management and Board on a monthly or quarterly basis.
5. Whenever a public agency issues a professional service contract on a sole source basis that agency should, as a matter of public trust, perform a price or costs analysis to ensure that proposed rates are fair and reasonable. Such procedures are required of Federal agencies and generally practiced by state and local agencies. Agencies in the Los Angeles area using these procedures include the Los Angeles Metropolitan Transit Authority, Orange County Transit Authority and the South Coast Regional Rail Authority.
6. A cost analysis should be required for professional service when contracts are issued with limited competition or if competition is based on professional qualifications rather than cost. Both Federal and California law require agencies to base competitive assessments for proposed architectural, engineering and construction management services on qualifications and performance issues, and to negotiate fair and reasonable prices. A cost analysis assess the reasonableness of proposed rates reviewing the elements of the contractor's costs including labor costs, labor burden and overhead, and also assesses the reasonableness of proposed profit.

7. Public Sector agreements should identify provisions that require certain clauses to be flowed down to subconsultants. They also typically limit the markup on costs so that only one party is marking up work performed by lower tiered subconsultants.
8. Markup, if authorized, should be defined in solicitation and contracts. (e.g. “Subconsultant direct costs shall be subject to no more than 3 % administrative fee.”).
9. Agencies maintain their own independent record of the amount paid under a Task Order and monitor amounts invoiced to ensure that payments are not paid in excess of authorized levels. Contract Task Orders “Not to Exceed” amounts represent the agency’s legal obligation for payment, and the agency must maintain its own independent record of the amount paid under a Task Order. The ideal method for maintaining such a record is to record payments in the agency’s accounting system by Task Order and establish system checks that will not allow payments in excess of authorized amounts. As a minimum, the contracting officer or other designated staff should maintain a file on all payment amounts by Task Order.
10. It is a normal practice under “Not to Exceed” Task Order contracts to require contractors to submit a separate notification of funds used when their billings exceed 75% or 90% of the authorized level. Such a notification brings special attention to the need to assess whether or not funds provided for the task are adequate and allows time for necessary budget consideration and authorization action.
11. Established formal written invoice processing procedures showing the various steps and tests to be performed to ensure the validity or accuracy of the invoice package and identifying those who should perform those tests. Such procedures establish accountability and provide for easier transition from existing staff to new staff. Checklists containing certain basic review procedures help formalize invoice-processing procedures as well as provide documentation that those procedures were followed. Checklists should include tests of math and billing rates as well as verification of work performed. Checklists also help to establish accountability for having performed required procedures. They might also prevent duplicated effort by various people in the review process because they show what has been reviewed, who did it and when. Such information provides assurance to those in the final review process that the package is complete and ready for payment.

12. A sample invoice form should be included in solicitation packages. The invoice should identify the task order period, the amount of approved markup, and the cumulative costs invoiced under the task order
13. Time charges outside of the Task Order’s authorized period of performance should not be paid without special approval. Task Order performance periods provide a control mechanism for ensuring that costs under a multi task contract are charged to the appropriate task.
14. Time and Material Task Order estimates should be prepared with as much labor detail as practical. As a minimum, the estimate should include descriptive work titles along with pay levels and rates for the majority of staff to be involved in the work. Such detail helps to ensure the accuracy of the estimates and provides a control mechanism for ensuring the accuracy of time charged to the Task, and the quality of staff performing the work.
15. Key components of MBE/WBE programs are: 1.) Routine reporting of MBE/WBE utilization of qualified firms and the payment to those firms for work performed, 2.) Identifying responsibility for verification with staff that is most familiar with the MBE/WBE requirement, 3.) Setting MBE/WBE utilization goals based on the review and determination of available MBE/WBE firms for specific projects, and 4.) M/WBEs serve a commercially valuable function for work performed.
16. Legal services for the Department should be procured by the Department in accordance with Section 275 of the City Charter which states “Departments seeking to procure legal services must first obtain the consent of the City Attorney.”
17. The Department should consider using Request for Qualification (RFQ) based solicitations for projects similar to Owens Lake. Engineering and construction management services are usually procured under a RFQ solicitation where experience and technical expertise are the most critical selection factors. Cost is not included in the initial submittals but is addressed in negotiations after the most qualified proposers are ranked and selected for negotiations. The City Charter allows for this type of solicitation under §371(e)(2) “for the performance of professional, scientific, expert, technical or other special services for which the Department finds that competitive bidding is not practicable or advantageous.”

SECTION 3 - CH2M Hill’s Management of Owens Lake Project

1. It is standard practice to establish ceilings for task orders issued under contracts and to limit payment to approved task order limits.
2. Subcontract charges at labor rates greater than approved rates and markup in excess of the markup rate are unallowable and should not be paid.
3. As uncertainty in the definition of the project declines the ability to more accurately define the outcome should increase. Cost Reimbursable and Time and Material contracts should be regularly audited by public agencies to ensure compliance with contract terms.
4. Incentives should be developed in the construction contract and responsibility for the ensuring the provision of accurate as-constructed records which are important to Operations and Maintenance personnel. The Construction Management Association of America (Petee, 2005) suggest that an effective approach may be to have the Construction Manager participate more actively in the as-built process so that they do not fail at the job of assuring an-acceptable as-constructed record.
5. The firm responsible for inspections of test requirements should document and process deviation in specifications forms to owner at the time of such a deviation.

Appendix B

Summary of Subcontractor Markup Agreement No. 10390

Appendix B

Summary of Subcontractor Markups Agreement No. 10390

Subcontractor 1

CH2M Hill Purchase Order Number: 45760
Number of 2nd tier subcontractors: 4
Total 2nd tier billings paid by Department: \$88,962
Contractually Unallowed markup: \$19,634.

Comments:

Three of the four sub-agreements between Subcontractor 1 and their subs were available for review. The sub-agreements included 2nd tier subcontractor rates. Because no 2nd tier invoices were provided we based our review on 2nd tier subcontract agreement rates. We found that Subcontractor 1 increased the rates billed by 2nd tier subcontractors in its invoices to CH2M Hill. To determine the costs associated with the one missing agreement, we applied the average markup percentage to estimate the markup amount. We questioned a total of \$19,634 as unallowed markup.

Subcontractor 2

CH2M Hill Purchase Order Number(s): 30804, 30805, 32943
Number of 2nd tier subcontractors: 3
Total 2nd tier billings paid by Department: \$114,015
Contractually Unallowed markup: \$26,407

Comments:

The original review uncovered several issues regarding markups:

- Purchase Orders 30804 in the amount of \$58,094 and 30805 in the amount of \$61,691 under Agreement No. 10390 includes language which stated “CH2M Hill will reimburse subconsultant for lower-tier subconsultant (*sic*) costs at cost plus fifteen (15) percent.”

Based on the document above and other documents reviewed, we classified all management and administrative hours as markup. The details for each purchase order are listed as follows:

- 1) Purchase Order 30804 billed two invoices totaling \$58,094. Based on our review, we found lower-tier 1 invoiced costs totaling \$46,132. The first invoice under this

purchase order, dated October 1999 includes a line item for 15% markup of lower-tier 1 costs and project management costs of \$4,024. In the second invoice, dated January 2000, the 15% markup line item was replaced with Subcontractor 2 staff hours for planning and administrative support of \$4,223 or 15.5% of lower-tier 1 costs. We questioned the 15% markup, management, and administrative costs totaling \$11,084 as unallowable markup.

- 2) Purchase Order 30805 invoices totaled \$51,019. Based on our review, we found lower-tier 2 invoiced costs totaling \$43,240. The first invoice under this purchase order, dated October 1999 includes a line item for 15% markup of lower-tier 2 costs and project management costs of \$3,180. In later invoices, we found Subcontractor 2 billed staff hours instead of the 15% markup line item on 2nd tier billings. The billed staff hours ranged between 10-15% of lower-tier 2 invoices. We questioned the 15% markup, management, and administrative costs totaling \$7,779 as unallowable markup.
- 3) Purchase Order 32943 invoices totaled \$21,107. Based on our review, we found that subcontractor, “Expert Panel”, invoiced costs totaling \$13,560. The November 1999 Fee Proposal included a 15% fee applied to subcontractor costs. The approved proposal, dated December 1999, replaced the 15% fee with Subcontractor 2 hours for management of the review panel. Three program managers were provided by Subcontractor 2 to manage this effort. No evidence of review or evaluation by Subcontractor 2 of these scientific expert reports could be identified in the CH2M Hill file. We questioned the management and administrative costs totaling \$7,544 as unallowed markup.

We questioned a total of \$26,407 of management hours as unallowed markups under this Agreement.

Subcontractor 4

CH2M Hill Purchase Order Number: 44509
Number of 2nd tier subcontractors: 1
Total 2nd tier billings paid by Department: \$51,856
Contractually Unallowed markup: \$10,178.

Comments:

Based on our review of 2nd tier invoices, we found that Subcontractor 4 increased the rates billed by 2nd tier subcontractors in its invoices submitted to CH2M Hill. We questioned a total of \$10,178 as unallowed markup.

Subcontractor 6

CH2M Hill Purchase Order Number: 41314
Number of 2nd tier subcontractors: 2
Total 2nd tier billings paid by Department: \$271,680
Contractually Unallowed Markup: Unable to determine with information available

Subcontractor 7

CH2M Hill Purchase Order Number: 45163 and 45164
Number of 2nd tier subcontractors: 2
Total 2nd tier billings paid by Department: \$ 53,770
Contractually Unallowed markup: \$8,948

Comments:

Subcontracts, 2nd Tier subcontractor invoices, and other related documents were not provided from Subcontractor 7 when formally requested. The reason given was that all of their documents were previously provided to the Department under a separate review performed by LADWP Internal Audit. We obtained Subcontractor 7 documents from the Department's Internal Audit unit.

Based on our review of 2nd tier invoices, we found that Subcontractor 7 increased labor and equipment rates billed by 2nd tier subcontractors in its invoice submitted to CH2M Hill. Markups in labor rates and equipment rates total \$6,435 and \$2,513, respectively. Thus, we questioned a total of \$8,948 as unallowable markup.

Subcontractor 8

CH2M Hill Purchase Order Number: 29358 and 29902
Number of 2nd tier subcontractors: 2
Total 2nd tier billings paid by Department: \$24,718
Contractually Unallowed markup: \$1,107

Comments:

Based on our review of 2nd tier invoices, we found that Subcontractor 8 increased the rates billed by 2nd tier subcontractors in its invoices submitted to CH2M Hill. Thus, we questioned a total of \$1,107 as unallowed markup.

Subcontractor 9

CH2M Hill Purchase Order Number(s): 29361, 30397
Number of 2nd tier subcontractors: None
Total 2nd tier billings paid by Department: None
Contractually Unallowed markup: \$ 1,129

Comments:

We found no evidence of any 2nd tier subcontractor billings in Subcontractor 9 invoices. We found markups of 15 percent on other direct costs and expenses by Subcontractor 9. Trucking costs, overnight express mailing, UPS mailing, office depot, and other supplies were billed to the Department with a 15 percent markup. Thus, we questioned a total of \$1,129 as unallowed markups.

Subcontractor 11

CH2M Hill Purchase Order Number: 28549

Number of 2nd tier subcontractors: 1

Total 2nd tier billings paid by Department: \$ 415,424

Contractually Unallowed markup: \$49,412

Comments:

Subcontractor 11 informed LADWP and GCAP that 2nd tier documents were no longer available. They advised in writing that it is their policy not to keep records for more than six years. The period of performance for this effort was 1999-2000. We questioned the markup costs based on information obtained during the course of the review.

The original review uncovered several issues regarding markups:

- An email dated June 1999, from Subcontractor 11 to CH2M Hill, stated that, “per our typical practice; I added 15 percent to 2nd tier subcontractors’ rates (5% administrative costs and 10% profit.)
- Based on an email dated August 1999, from Subcontractor 11 to CH2M Hill, the markup percentage applied to 2nd tier subcontractors was 13 percent.
- Based on 2nd tier subcontractor rates provided in above emails and Subcontractor 11 invoices, we computed a markup of 13.5 percent on 2nd tier subcontractor rates.

Based on the documents above, we applied the 13.5 percent markup to the missing 2nd tier subcontractor costs to calculate unallowed markup. We derived 2nd tier costs by applying the 13.5% to the total Subcontractor 11 billings. The total 2nd tier costs were \$366, 012. The unallowed markup amount totaled \$49,412.

Appendix B
Analysis of CH2M Hill Lower-Tier Consultant Markup
Agreement No. 10390

1st TIER Sub	Total Invoiced by 1st Tier to CH2M Hill	Total Invoiced by 2nd Tier to 1st Tier	Unallowed Markup	Notes
Subcontractor 1	\$159,866	\$69,280	\$19,634	
Subcontractor 2	\$869,035	\$102,932	\$26,407	
Subcontractor 3	\$1,672	NOT APPLICABLE		No 2nd Tier work performed.
Subcontractor 4	\$238,270	\$43,370	\$10,178	
Subcontractor 5	\$60,923	NOT APPLICABLE		No 2nd Tier work performed.
Subcontractor 6	\$456,673	-	-	
Subcontractor 6	\$277,663	\$105,502	X	Subcontractor 6 billed CH2M Hill \$277,663 using non-W2 staff, which includes labor and ODCs. We projected that 1099 individuals invoiced \$99,520 of labor to Subcontractor 6. This amount is about \$172,160 more than allowed for markup for subcontractors. However, Subcontractor 6 provided additional benefits to 1099 individuals. We are unable to determine the impact to the hourly rate of the additional benefits provided to 1099 individuals.
Subcontractor 7	\$96,018	\$45,473	\$8,948	
Subcontractor 8	\$142,036	\$23,611	\$1,107	
Subcontractor 9	\$120,165	\$0	\$1,129	
Subcontractor 10	\$109,393	NOT APPLICABLE		No 2nd Tier work performed.
Subcontractor 11	\$687,208	\$366,012	\$49,412	
Earthworks	\$56,511	NOT AVAILABLE		Earthworks declined to provide documentation.
G&C	\$158,470	NOT AVAILABLE		Documents were not provided to the Department. Insufficient time to perform analysis.
Pacifica Services	\$120,690	NOT AVAILABLE		Pacifica declined to provide documentation. Based on employee verification forms, \$120,690 was billed to CH2M Hill for non-Pacifica Services employees. It's unknown whether or not markup was included.
Ultrasystems	\$247,510	NOT AVAILABLE		Ultrasystems declined to provide documentation unless compensated for effort.
	\$ 3,218,924	\$ 756,181	\$ 116,814	

Total Unallowed Markup: \$ 116,814

Appendix C

Summary of Subcontractor Markup Agreement No. 10001

Appendix C

Summary of Subcontractor Markup Agreement No. 10001

Subcontractor 1

CH2M Hill Purchase Order Number: 48425
Number of 2nd tier subcontractors: 3
Total 2nd tier billings paid by Department: \$28,295
Contractually Unallowed markup: \$4,964

Comments:

CH2M Hill provided us with sub-agreements between Subcontractor 1 and their subs in lieu of 2nd tier invoices, which included 2nd tier subcontractor rates. Based on our review of 2nd tier subcontract agreements, we found that Subcontractor 1 increased the rates billed by 2nd tier subcontractors on their invoices to CH2M Hill. The markup amount totaled \$7,085. We questioned a total of \$4,964 as unallowed markup exceeding 10 percent.

Subcontractor 2

CH2M Hill Purchase Order Number(s): 72225, 74185, and 909125
Number of 2nd tier subcontractors: 3
Total 2nd tier billings paid by Department: \$ 755,773
Contractually Unallowed markup: \$33,113

Comments:

Based on our review of 2nd tier invoices, we found that Subcontractor 2 increased the rates billed by 2nd tier subcontractors in its invoices submitted to CH2M Hill. The markup amount totaled \$98,810. We questioned a total of \$33,113 as unallowed markup exceeding 10 percent.

Subcontractor 3

CH2M Hill Purchase Order Number(s): 66923, 67424, 73833, 73845, 900682, 900748,
900772, 901142, 901291, 905535, 905538, 907910, 907945, 907949,
908179, 911450, 911964, and 913175
Number of 2nd tier subcontractors: 7
Total 2nd tier billings paid by Department: \$ 2,287,365
Contractually Unallowed markup: \$128,580

Comments:

Based on our review of 2nd tier invoices, we found that Subcontractor 3 increased the rates billed by 2nd tier subcontractors in its invoices submitted to CH2M Hill. The markup amount totaled \$374,529. We questioned a total of \$128,580 as unallowed markup exceeding 10 percent.

Subcontractor 4

CH2M Hill Purchase Order Number: 47975

Number of 2nd tier subcontractors: 2

Total 2nd tier billings paid by Department: \$186,916

Contractually Unallowed markup: \$82,741

Comments:

Based on our review of 2nd tier invoices, we found that Subcontractor 4 increased the rates billed by 2nd tier subcontractors in its invoices submitted to CH2M Hill. The markup amount by Subcontractor 4 totaled \$90,141. We questioned costs of \$82,741 as unallowed markup exceeding 10 percent. In addition, markups totaling \$3,470 were projected due to missing 2nd tier invoices. The projection was calculated using the standard 2nd tier rates billed under this Purchase Order.

In one example of unallowable markup, a Sr. Project Engineer was temporarily laid off as a full-time Subcontractor 4 employee and worked as a subcontractor to Subcontractor 4 under Company 1. He did not receive any benefits from Subcontractor 4 as a subcontractor. During this period, he was still invoiced by Subcontractor 4 at his previous employee hourly rate of \$128 for a total of \$99,200, however he billed Subcontractor 4 at \$30 an hour for a total of \$23,250. The markup of this employee for the subcontracted period was 326.67% or \$75,950.

Subcontractor 13

CH2M Hill Purchase Order Number(s): 31562, 35815, 36621, 45811, 47689, 47893, 48262, 48263, 48815, 48816, 53990, 55400, 57008, 58101, 61394, 62431, 66735, 73516, 900103, 900731, 900735, 900847, 901114, 901176, 901527, 901572, 902285, 902347, 902435, 902536, 902541, 902651, 904078, 905021, 905237, 905267, 905280, 905896, 907993, 916832, 916835, and 916954

Number of 2nd tier subcontractors: Various (Rental companies, cleaning personnel, equipment purchases etc.)

Total 2nd tier billings paid by Department: \$1,020,305

Contractually Unallowed markup: \$ 10,734

Comments:

Subcontractor 13 invoiced costs totaling \$1,020,305 under Agreement No. 10001. The services included, and were not limited to, providing rental vehicles, storage rentals, office supplies, purchasing computers and equipment, office space rental, and subcontracting cleaning services. Based on our review, we found that Subcontractor 13 increased the rates its invoices submitted to CH2M Hill. The markup amount totaled \$102,003. We questioned a total of \$10,734 as unallowed markup exceeding 10 percent.

Subcontractor 5

CH2M Hill Purchase Order Number: 54191, 54192, 54570, 55503, 55504, and 55506

Number of 2nd tier subcontractors: 1

Total 2nd tier billings paid by Department: \$ 224,570

Contractually Unallowed markup: \$ 21,020

Comments:

Based on our review of 2nd tier invoices, we found that Subcontractor 5 increased the rates billed by 2nd tier subcontractors in its invoices submitted to CH2M Hill. Markup identified as increase in rates totaled \$17,405. In addition, we found that Subcontractor 11 billed for more hours than the 2nd tier subcontractor billed for. We classified these increases in staff hours as markup hours. Markup identified as increase in hours totaled \$21,005. The markup amount by Subcontractor 5 totaled \$38,410. We questioned a total of \$21,020 as unallowed markup exceeding 10 percent.

Subcontractor 6

CH2M Hill Purchase Order Number(s): 904479, 913837, 47980, and 47981

Number of 2nd tier subcontractors: (1) subcontractor and four (4) Independent Contractors
Total 2nd tier billings paid by Department: \$510,908 (Lower-tier 1) and \$1,860,720
(Independent Contractors)

Contractually Unallowed markup: \$7,047 (Lower-tier 1 only) Markup on Independent Contractors could not be determined with available information.

Comments:

Based on our review of Purchase Order 904479, we found that the 2nd tier subcontractor billed costs totaled \$458,396. Per Subcontractor 6, CH2M Hill instructed them to enter into a contract with the 2nd tier subcontractor, pay an individual working for this subcontractor an hourly rate of \$130 and bill him at \$145. CH2M Hill provided 2nd tier invoices to support these billings. We found that Subcontractor 6 increased the rates billed by the 2nd tier in its invoices submitted to CH2M Hill. We questioned a total of \$7,047 as unallowed markup exceeding 10%.

Subcontractor 7

CH2M Hill Purchase Order Number: 47970
Number of 2nd tier subcontractors: 3
Total 2nd tier billings paid by Department: \$500,239
Contractually Unallowed markup: \$84,497

Comments:

Subcontracts, 2nd tier subcontractor invoices, and other related documents were not provided from Subcontractor 5 when formally requested. The reason given was that all of their documents were previously provided to the Department under a separate review performed by LADWP Internal Audit. We obtained Subcontractor 7 documents from the Department's Internal Audit unit. In reviewing Subcontractor 7 documents provided to the Department's Internal Audit, it was determined that forty-one (41) 2nd tier invoices were not provided.

Based on our review of 2nd tier invoices, we found that rates billed by 2nd tier subcontractors were increased in its invoices submitted to CH2M Hill. The markup amount totaled \$118,045. We questioned a total of \$84,497 as unallowed markup exceeding 10 percent. Of the \$84,497 costs of \$45,491 was projected based on 2nd tier rates provided in other invoices. The remaining \$39,006 was unallowed markup exceeding 10% based on 2nd tier invoices obtained.

Due to unavailable 2nd tier invoices, GCAP was unable to determine markup on costs totaling \$67,145. This data was not included in the totals provided.

Subcontractor 17

CH2M Hill Purchase Order Number: 50755, 55596, and 900765
Number of 2nd tier subcontractors: 2
Total 2nd tier billings paid by Department: \$2,633,209
Contractually Unallowed markup: \$175,245

Comments:

CH2M Hill provided 1st tier sub invoices and purchase orders. Due to difficulties contacting Subcontractor 17, only one subcontractor provided 2nd tier sub invoices.

- 1) Based on our review of the invoices that were provided by the 2nd tier subcontractor, we found that rates billed by 2nd tier subcontractors were increased in its invoices to CH2M Hill. The markup amount totaled \$366,446. We questioned a total of \$172,644 as unallowed markup exceeding 10 percent.
- 2) We projected the markup of the subcontractor for whom we had no data by using a 2nd tier billing rate of \$130. (The basis for using this rate was that the same

subcontractor billed it to Subcontractor 6 for the same time period.) Per Subcontractor 6, CH2M Hill instructed them to pay a rate of \$130 and bill the \$145 rate. Because the subcontractor was also used by Subcontractor 6 and billed at \$145, we used the rate of \$130 for 2nd tier labor billings. The markup amount totaled \$19,508 and we questioned \$2,601 as unallowed markup exceeding 10%.

The markup amount by Subcontractor 17 totaled \$385,953. We questioned a total of \$175,245 as unallowed markup exceeding 10 percent.

Subcontractor 18

CH2M Hill Purchase Order Number: 49317
Number of 2nd tier subcontractors: 1
Total 2nd tier billings paid by Department: \$ 6,050
Contractually Unallowed markup: \$ 0

Comments:

Based on our review of 2nd tier invoices, we found that Subcontractor 18 increased the rates billed by 2nd tier subcontractors in its invoices to CH2M Hill. The markup amount totaled \$550, which was within the allowable markup percentage.

Subcontractor 10

CH2M Hill Purchase Order Number: 900612
Number of 2nd tier subcontractors: 3
Total 2nd tier billings paid by Department: \$46,846
Contractually Unallowed markup: \$22,427

Comments:

Subcontractor 10 was not identified by CH2M Hill as having 2nd tier subcontractors. GCAP staff determined this fact independent of CH2M Hill's input from the formal letters LADWP sent directly to CH2M Hill subcontractors requesting information and documentation related to 2nd tier subcontractors.

Markup identified as an increase in labor rates totaled \$23,602. In addition, we found that Subcontractor 10 billed 27.5 more hours than 2nd tier subcontractors billed for. We classified these increases in 2nd tier hours as markup. We also found that Subcontractor 10 applied an overhead of 9 percent to non-personnel, which we also classified as markup. Markup identified by the overhead applied to Subcontractor 10 non-personnel totaled \$969. The total markup on 2nd tier labor by Subcontractor 10 is \$24,571. Based on our review of 2nd tier invoices, we found that rates billed by 2nd tier subcontractors were increased on an average of 128 percent. We questioned costs of \$22,427 as unallowed markup exceeding 10 percent.

Appendix C
Analysis of CH2M Hill Lower-Tier Consultant Markup
Agreement No. 10001

1st Tier Sub	Total Invoiced by 1st Tier to CH2M Hill	Total Invoiced by 2nd Tier to 1st Tier	Total Markup	Unallowed Markup (Markup > 10%)	Notes
Subcontractor 1	\$58,673	\$22,623	\$7,085	\$4,964	
Subcontractor 2	\$3,691,452	\$656,963	\$98,810	\$33,113	
Subcontractor 3	\$3,454,826	\$2,522,341	\$374,529	\$128,580	
Subcontractor 4	\$470,959	\$96,775	\$90,141	\$82,741	
Subcontractor 13	\$1,020,305	\$918,303	\$102,003	\$10,734	
Subcontractor 5	\$1,486,953	\$186,160	\$38,410	\$21,020	
Subcontractor 6	\$511,248	\$458,396	\$52,853	\$7,047	
Subcontractor 6	\$3,515,170	\$793,013	x	x	Subcontractor 6 billed CH2M Hill \$1,885,930 using non-W2 staff, which includes labor and ODCs. We projected that 1099 individuals invoiced \$792,965 of labor to Subcontractor 6. This amount is about \$988,459 more than the 10% allowed for markup for subcontractors. However, Subcontractor 6 provided additional benefits to 1099 individuals. We are unable to determine the impact to the hourly rate of the additional benefits provided to 1099 individuals.
Subcontractor 7	\$2,160,588	\$382,194	\$118,045	\$84,497	\$44,879 of the unallowed markup amount was projected due to missing 2nd tier invoice documentation. Projections were made using data from 1st tier invoices to CH2M Hill, for billings totaling \$273,075, due to lack of 2nd tier invoices.
Subcontractor 19	\$356,106	NOT APPLICABLE			No 2nd Tier work performed.
Subcontractor 9	\$837,655	\$0	\$74	\$0	
Subcontractor 17	\$3,038,479	\$2,247,891	\$385,953	\$175,245	
Subcontractor 18	\$8,250	\$5,500	\$550	\$0	
Subcontractor 10	\$1,041,298	\$21,438	\$24,571	\$22,427	
Subcontractor 11	\$61,993	NOT APPLICABLE			No 2nd Tier work performed.
Earthworks	\$1,621,955	NOT AVAILABLE			Earthworks declined to provide documentation. \$192,725 was invoiced by Earthworks to CH2M Hill for 2nd tier subcontractors. It's unknown whether or not markup was included.
Pacifica Services	\$115,517	NOT AVAILABLE			Pacifica declined to provide documentation. \$23,442 was invoiced by Pacifica to CH2M Hill for 2nd tier subcontractors. It's unknown whether or not markup was included.
Ultrasystems	\$173,968	NOT AVAILABLE			Ultrasystems declined to gather and provide documentation, unless compensated for effort.
	\$ 23,625,396	\$ 8,311,595	\$ 1,293,022	\$ 570,368	

CH2M Hill Portion of Unallowed Markup (10%)

129,302	57,037
\$ 1,422,324	\$ 627,405

Appendix D

Contract Analysis Table

Item #	Contract Term and Provision	Agreement No. 10390 & Amendments 1 & 2	Agreement No. 10001 & Amendments 1 - 6	New Contracts Nos. 47514-6, 47515-6, 47516-6, & 47517-6	Comments
1	Date Executed	02/12/1998	04/26/2001	Approved by Legal on April 21, 2006	
2	Award Amount	\$13,945,000 with amendments.	\$106,000,000 with amendments.	Various Amounts	
3	K Type	Sole Source	Competitive	Competitive	
4	Term	2/12/98-4/12/01 with amendments.	4/26/01-12/31/06 with amendments.	Expires 12/31/08	
5	SOW	Research, analysis, evaluation and advice concerning control of airborne particulate matter. <u>Amendment 1 expands services to include project management, incorporates pmp and adds time of the essence.</u>	Provide the following services for OLDMP: 1) Environmental research, monitoring and modeling, 2) Permitting, environmental approvals, public outreach, 3) Environmental program management, 4) Strategic planning, design and testing, 5) Construction management, 6) Operation/maintenance planning and management.	Breaks SOW into 4 separate contracts. Includes Engineering Services; Environmental Services; Science, Technology & Air Quality Regulatory Compliance Services; and Program Operations Services for OLDMP consisting of, but not limited to, assisting the Department staff with labor, materials, supervision, equipment, supplies, and administration.	
6	TMS	Department will prepare a written task assignment proposal.	<u>Department or consultant may draft a task proposal.</u>	<u>Department will prepare a written task proposal for each task.</u>	TMS requirements have changes with every Agreement.
6a	Reporting of Money Spent	• Report at 25% and 75% for \$20K+ • Report at 25, 50 and 75% for \$100K+	• Report at 25%, 50%, 75% and 100% for all amounts.	• Report at 50% and 75% for \$20K+. • Report at 40% and 75% for \$100K+.	These requirements have changed for each Agreement.
7	Personnel	The Consultant shall furnish the Department the names, titles, and qualifications of its key personnel. Any change of the key personnel shall be made only upon written approval from the Director of Water Services Operation. Such written approval shall be given in a timely manner, and shall not be withheld (3.5.1).	Consultant shall promptly provide the Department with the names, titles, experience, and qualifications of key program personnel.	<u>The contractor shall furnish the Department with names, titles, and qualifications of its key project personnel (3.2.2). Contractor shall minimize changes to its key project personnel. The Department shall have the right to request key project personnel changes and to review and approve key project personnel changes proposed by the Contractor. Department's approval of key project personnel assignments and changes shall not be unreasonably withheld (3.2.4).</u>	
8	Compensation	• Rates-Exhibit A • CPI-Escalation • Travel Time-8 hrs.	• Rates-Exhibit B • CPI-Escalation • Travel Time-6 hrs.	• Rates-Exhibit A • Overtime Premiums • CPI-Escalation • Travel Time-4 hrs	
8a	Semi Annual Report	Brief letter summarizing all task assigned, amount of expenditures, start and completion dates, total dollar amount received for all tasks and documentation of all MBE/WBE expenditures.	Nothing specified in agreement.	Nothing specified in agreement.	

Item #	Contract Term and Provision	Agreement No. 10390 & Amendments 1 & 2	Agreement No. 10001 & Amendments 1 - 6	New Contracts Nos. 47513-3, 47513-6, 47516-3, & 47517-4	Comments
9	Records and Audits	1. Department shall have the right to audit all aspects of the project. This right shall retain this right for 3 years after final payment. The findings of any audit shall be treated by the department as confidential.	1. Department shall have the right to audit all aspects of the project. This right shall retain this right for 3 years after final payment. The findings of any audit shall be treated by the department as confidential. 2. Consultant shall submit the following deliverables: • monthly outreach documents • quarterly progress reports • quarterly injury and illness prevention program (IIPP) reports • annual compact discs (containing a set of all files, documents, reports and correspondences generated)	1. Department shall have the right to audit all aspects of the project. This right shall retain this right for 3 years after final payment. <u>The Contractor and Contractor's subcontractors and suppliers shall account for and be responsible for unallowable costs and mutually agreed unallowable costs. Auditors may require the Contractor to provide appropriate documentation to support the costs and prices proposed for a Contract Amendment (including a change order). All records, documents, and evidence/data related to a billing are subject to audit. If the audit reveals that there is an overpayment on a billing, and the over billing is more than 5 percent of the total billing, the Contractor shall pay all expenses and costs incurred by the Authorized Auditors arising out of or related to the audit.</u> 2. Consultant shall submit progress reports as required by the CA (no time periods specified).	
9a	Monthly Outreach	Nothing specified in agreement.	Monthly report submitted to the Department demonstrating compliance with Outreach Program.	Monthly report submitted to the Department demonstrating compliance with Outreach Program.	
9b	Quarterly Progress Reports	Nothing specified in agreement.	Quarterly report submitted to the Department demonstrating compliance with Outreach Program, accomplishments, challenges, 3 month task assignments, estimated task completion dates and detailing safety incidents and accidents. <u>Quarterly Injury and Illness Prevention Program report.</u>	Nothing specified in agreement.	
9c	Quarterly IIPP Report	Nothing specified in agreement.		Nothing specified in agreement.	
9d	Annual CD	Nothing specified in agreement.	<u>Set of CDs of all files, documents, reports and correspondences generated.</u>	Nothing specified in agreement.	
9e	Quality Assurance Review	Nothing specified in agreement.	<u>At no cost to the Department, Consultant shall promptly make available to the Department all work performed under this Agreement.</u>	Work performed under this Agreement will be subject to review by the Department's personnel.	
10	Invoice Requirements	Nothing specified in agreement.	Consultant shall submit monthly invoices to receive compensation for its services. Each month, before the 15th of the month, Consultant shall invoice Department.	Consultant shall submit monthly invoices to receive compensation for its services. Each month, before the <u>10th of the following month</u> , Consultant shall invoice Department.	
11	Payment	45 days.	45 days, 30 days -2%, 60 days -1%.	30 days.	
12	Program Documentation	Nothing specified in agreement.	Consultant shall submit monthly reports to Contract Administrator demonstrating its efforts with the Department's Outreach Program, and make related records available to Department upon request.	Consultant shall submit monthly reports to Contract Administrator demonstrating its efforts with the Department's Outreach Program, and make related records available to Department upon request.	

Item #	Contract Term and Provision	Agreement No. 10390 & Amendments 1 & 2	Agreement No. 10001 & Amendments 1 - 6	New Contracts Nos. 47514-5, 47515-6, 47516-5, & 47517-5	Comments
13	Conflicts	Nothing specified in agreement.	Consultants shall promptly pay, when due, all amounts payable for labor and materials furnished in the performance of Agreement. Consultants are solely responsible for correcting and remedying errors and omissions which occur in performance of services under Agreement. (see #7. Conflicts)	8.0 Conflicts <u>8.1 Claims and Protests</u> 8.2 Claims for Labor and Materials <u>8.3 Errors and Omissions</u> <u>8.4 Priority of Documents</u>	
14	General Conditions	<ol style="list-style-type: none"> 1. Excusable Delay (3.11.0) 2. Breach (3.11.1) 3. Suspension of Work (4.0) 4. Independent Consultant (3.12) 5. Integrated Agreement (3.1) 6. Notice to the Department (3.9) 7. Notices to Consultant (3.9) 8. 9. Amendments (3.2) 10. Prohibition Against Assignment or Delegation (3.3.0) 11. 12. Complying with Applicable Law and Permits (3.14.0, Not exactly the same) 13. Enforcement and Interpretation (3.14.0) Not exactly the same as 10001) 14. Severability (3.14.0) 15. Data Provided by the Department 16. 17. 18. Department Property and Facilities (3.6, 3.7) 19. <p>General Conditions in 10390 that are not found in 10001 include 3.3.1 in 3.6 and 3.13.</p>	<ol style="list-style-type: none"> 1. Excusable Delay 2. Breach 3. Suspension of Work 4. Independent Consultant 5. Integrated Agreement 6. Notices to the Department 7. Notices to Consultant 8. Illness and Injury Prevention Program 9. Amendments 10. Prohibition Against Assignment or Delegation 11. Non-Waiver of Agreement 12. Complying with Applicable Law and Permits 13. Enforcement and Interpretation 14. Severability 15. Beneficiaries 16. Data Provided by the Department 17. Conflict of Interest 18. Department Property and Facilities 19. Year 2000 Compliance 	<ol style="list-style-type: none"> 1. Excusable Delay (3.10.2) 2. Breach (3.10.3) 3. Suspension of Work (3.11) More detailed than before. 4. Independent Consultant (3.1.5) 5. Integrated Agreement (3.1) 6. Notices to the Department (3.10) 7. Notices to Consultant (3.10) 8. Illness and Injury Prevention Program (3.6) 9. Amendments (3.1.1) 10. Prohibition Against Assignment or Delegation (3.1.2) 11. Non-Waiver of Agreement (3.1.3) 12. Complying with Applicable Law and Permits (3.1.6) 13. Enforcement and Interpretation 14. 15. 16. Data Provided by the Department (3.1.7) 17. 18. Department Property and Facilities (3.4) 19. Year 2000 Compliance 	<p>New additions:</p> <ul style="list-style-type: none"> Time of Effectiveness (3.1.4) Integration of ODLDMP Audit recommendations (3.1.8) Personnel (3.2) Subcontractors (3.3) Contractor QA Program (3.5) Drawing Quality (3.7) Automated Drafting System (3.8) Professional Licenses (3.9) Permits (3.10.4) Infringement on Intellectual Property Rights (3.12) Express Warranty Provisions (3.13)
15	Suspension and Termination	Contract Administrator may orally direct the Consultant to suspend and to subsequently resume performance of all or part of the work. Such direction shall be confirmed within 24 hours in writing. An equitable adjustment in the work completion schedule and price shall be negotiated and confirmed by a revision task assignment if such suspension impacts the cost of the work and/or the work completion schedule. Unless amended, this Agreement shall terminate 36 months after approval by the Department or may be canceled by the Department without cause, on 30 days written notice or at any time by mutual agreement.	Contract Administrator may orally direct the Consultant to suspend and to subsequently resume performance of all or part of the work. Such direction shall be confirmed within 24 hours in writing. Consultant shall not invoice Department for suspended work, fees or expenses.	Contract Administrator may orally direct the Consultant to suspend and to subsequently resume performance of all or part of the work. Such direction shall be confirmed within 24 hours in writing. Consultant shall not invoice Department for suspended work, fees or expenses.	
16	Insurance	Prior to start of work, but no later than 30 days after the date of award of contract, Consultant shall furnish evidence of insurance to the Department in a form acceptable to the Risk Management Section of the Office of the Attorney. Should any portion of required insurance be on a "Claims Made" policy, the Consultant shall, at the policy expiration date following completion of work, provide evidence that the "Claims Made" policy has been renewed or replaced with the same limits, terms, and conditions of the expiring policy or that an extended discovery period has been purchased on the expiring policy at least for the contract under which the work was performed. Failure to do this shall constitute breach of contract.	Prior to start of work, but no later than 30 days after the date of award of contract, Consultant shall furnish evidence of insurance to the Department in a form acceptable to the Risk Management Section of the Office of the Attorney. Should any portion of required insurance be on a "Claims Made" policy, the Consultant shall, at the policy expiration date following completion of work, provide evidence that the "Claims Made" policy has been renewed or replaced with the same limits, terms, and conditions of the expiring policy or that an extended discovery period has been purchased on the expiring policy at least for the contract under which the work was performed. Failure to do this shall constitute breach of contract.	Acceptable evidence of required insurance must be submitted within 30 days of the date of award and maintained throughout the contract term. Said evidence must be on file with Risk Management in order to receive payment under any contract for services rendered, and in order to commence work. (Please also see new section titled "Insurance-Applicable Terms and Conditions" within 6.0).	

Item #	Contract Term and Provision	Agreement No. 10390 & Amendments 1 & 2	Agreement No. 10001 & Amendments 1 - 6	New Contracts Nos. 47514-6, 47515-6, 47516-6, & 47517-6	Comments
16.a	Workers Compensation/Employer's Liability	\$1,000,000 each accident.	\$1,000,000 each accident.	\$1,000,000 each accident.	
16.b	Commercial General Liability Insurance	\$1,000,000 combined single limit.	\$1,000,000 combined single limit.	\$1,000,000 combined single limit.	
16.c	Commercial Automobile Liability Insurance	\$1,000,000 combined single limit per occurrence.	\$1,000,000 combined single limit per occurrence.	\$1,000,000 combined single limit per occurrence.	
16.d	Aircraft Liability Insurance	Nothing specified in agreement.	Total coverage minimum of \$10,000,000 for each occurrence.	Nothing specified in agreement.	
16.e	Professional Liability Insurance	Total coverage minimum of \$1,000,000.	Total coverage minimum of \$1,000,000 combined single limit. Shall be maintained for 3 years after final completion of work.	Total coverage minimum of 3,000,000 combined single limit. Shall be maintained for 3 years after final completion of work.	
16.f	Excess Liability	Consultant may use an Umbrella or Excess Liability coverage to meet coverage limits specified above.	Consultant may use an Umbrella or Excess Liability coverage to meet coverage limits specified above.	Consultant may use an Umbrella or Excess Liability coverage to meet coverage limits specified above.	
17	Title of Work	All information contained in drawings, specifications, technical reports, and data provided by Department shall be held in confidence. None of the above are permitted to be copied. All material shall be returned no later than closing day of agreement. All reports, drawings, documents, specs, field notes and data developed by the Consultant for this Agreement is the property of the Department and may be used by the Department in any manner but will be at the sole risk of the Department without liability on the Consultant's part.	All information contained in drawings, specifications, technical reports, and data provided by Department shall be held in confidence. None of the above are permitted to be copied. All material shall be returned no later than closing day of agreement. All reports, drawings, documents, specs, field notes and data developed by the Consultant for this Agreement is the property of the Department and may be used by the Department in any manner but will be at the sole risk of the Department without liability on the Consultant's part.	Basically the same as before except in a different format and with a new section titled "Attorney Fees and Costs" which says that if there is a legal action to enforce the terms of the Agreement, each Party will be responsible for its own attorney fees.	
18	Social Policy Issues				New contract adds DWPF Recycling Policy (5.1), and Job Opportunities/Training Policy (5.6)
18.a	A/A	Consultant shall not discriminate in its employment practices because of race, religion, national origin, ancestry, sex, age, or physical handicap.	Consultant shall not discriminate in its employment practices because of race, religion, national origin, ancestry, sex, age, or physical handicap.	Consultant shall not discriminate in its employment practices because of race, religion, national origin, ancestry, sex, age, or physical handicap.	
18.b	MBE/WBE	Consultant shall use its best effort to attain MBE and WBE participation of 15 percent and 7 percent respectively.	Consultant shall use its best effort to attain MBE and WBE participation of 15 percent and 7 percent respectively.	Consultant shall use its best effort to attain MBE and WBE participation of 15 percent and 7 percent respectively.	
18.c	Living Wage Policy		Consultant has been provided with a copy of the Service Contract Worker Retention Ordinance (SCWRO) and the Living Wage Ordinance (LWO) and has agreed to comply with all terms and conditions.	Consultant has been provided with a copy of the Service Contract Worker Retention Ordinance (SCWRO) and the Living Wage Ordinance (LWO) and has agreed to comply with all terms and conditions.	
18.d	Child Support		Consultant and any subconsultants must fully comply with all applicable state and federal employment reporting requirements for the Consultant's and any subconsultant's employees.	Consultant and any subconsultants must fully comply with all applicable state and federal employment reporting requirements for the Consultant's and any subconsultant's employees.	
19	LABRT Requirements	Consultant shall obtain and keep in full force and effect during the term of the contract all Business Tax registration Certificates required by the City.	Consultant shall obtain and keep in full force and effect during the term of the contract all Business Tax registration Certificates required by the City.	Consultant shall obtain and keep in full force and effect during the term of the contract all Business Tax registration Certificates required by the City.	

Appendix E

Procurement Process Maps

Appendix E

LADWP Task Order Approval Process

Legend and Descriptions

Process Map Symbol Legend



Document - Any process flow step that produces a document



Terminator - Start and stop points in the process



Process - Shows a process or action step



Decision - Indicates a question or branch in the process flow



Preparation - Any process step that is a preparation process flow step



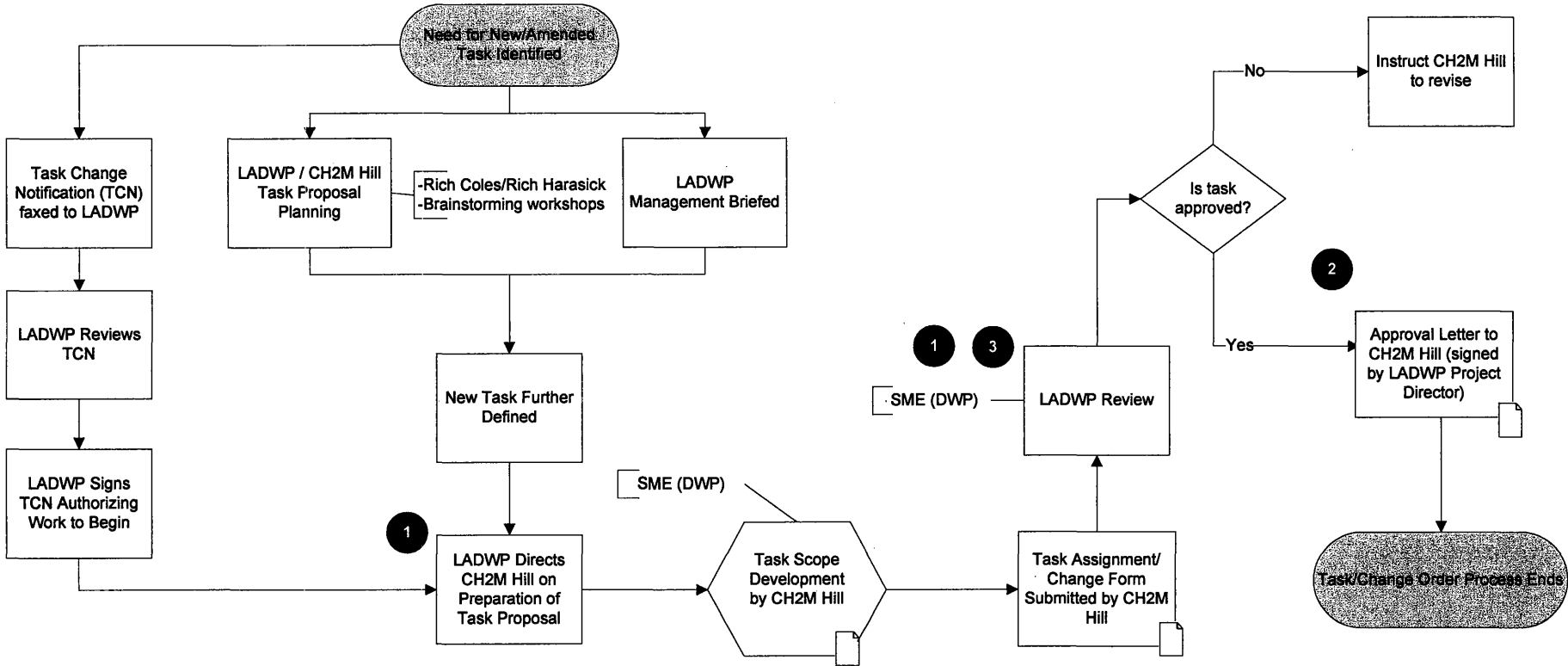
Numbers - Indicates issues that occur throughout the process

SME Subject Matter Expert

Issues Descriptions

- ❶ No documentation for the review of task assignment proposals or change proposals exists. No forms or files for the review and approval process are present.
- ❷ The Project Director performed all approvals until May 2006. Task orders greater than \$100,000 are reviewed and approved by the General Manager.
- ❸ There is no Board review for task order proposals of any dollar amount if the task order services fall within the general scope of work contained in the contract.

LADWP Task Order Approval Process



LADWP Purchasing Process Legend and Descriptions

Process Map Symbol Legend



Copy Center - Any process flow step that requires multiple copies of a document



Document - Any process flow step that produces a document



Terminator - Start and stop points in the process



Process - Shows a process or action step



Decision - Indicates a question or branch in the process flow



Preparation - Any process step that is a preparation process flow step



Mail – Documents or information sent via mail

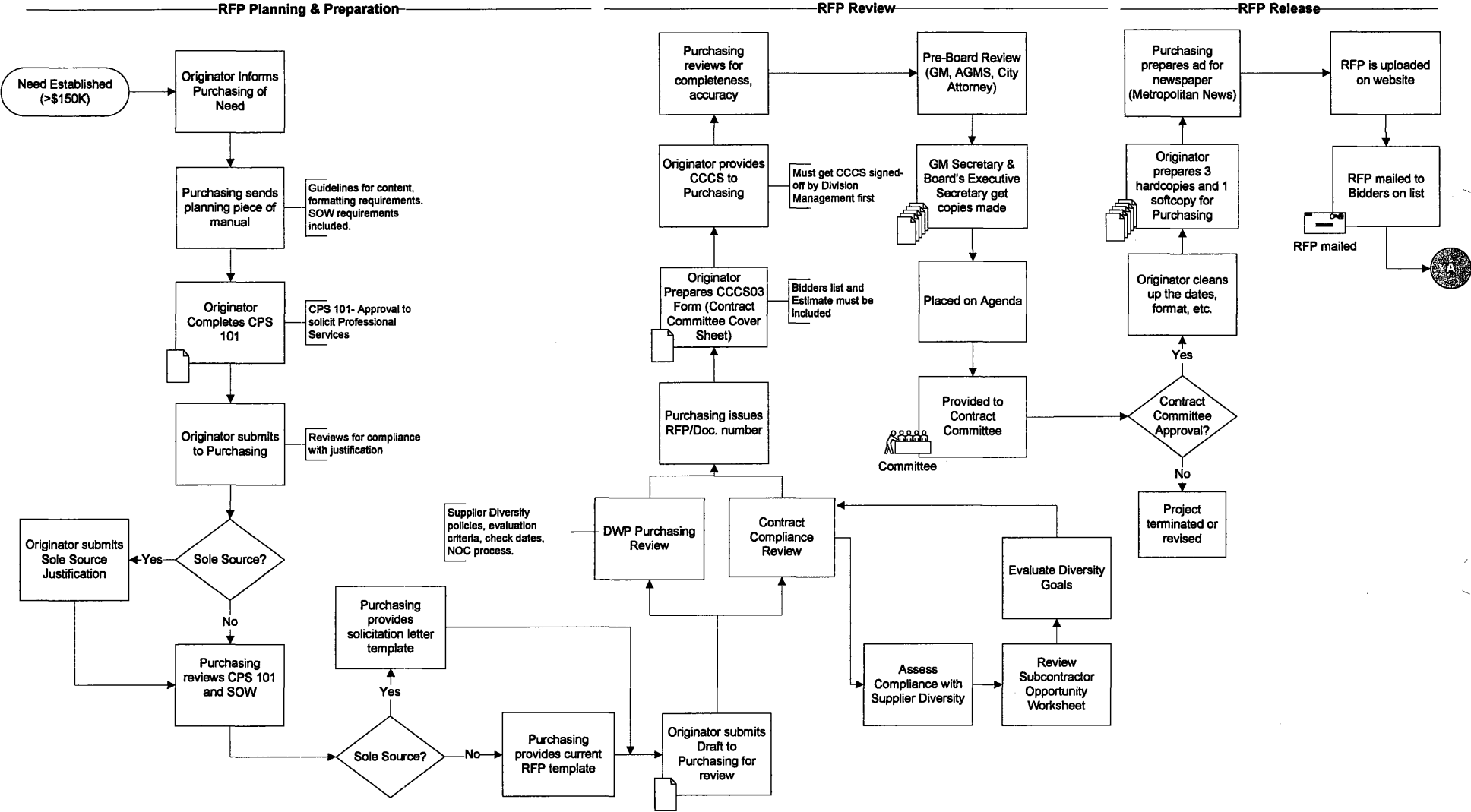


Email – Documents or information sent via email

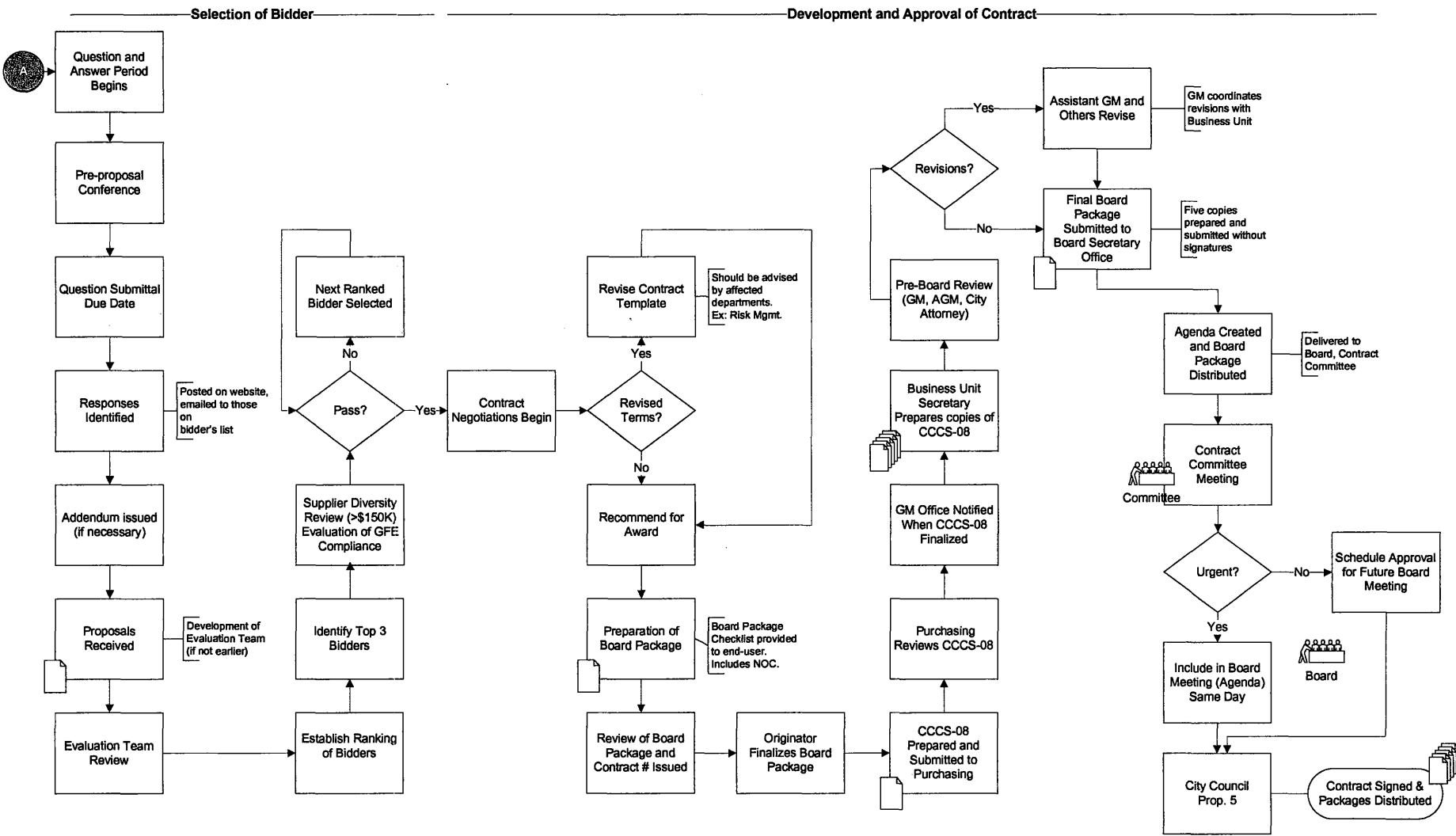


Indicates a process that involves an action from the Board of Directors or Contract Committee

LADWP Personal & Professional Services Process: RFP Preparation & Release (>Than \$150K)

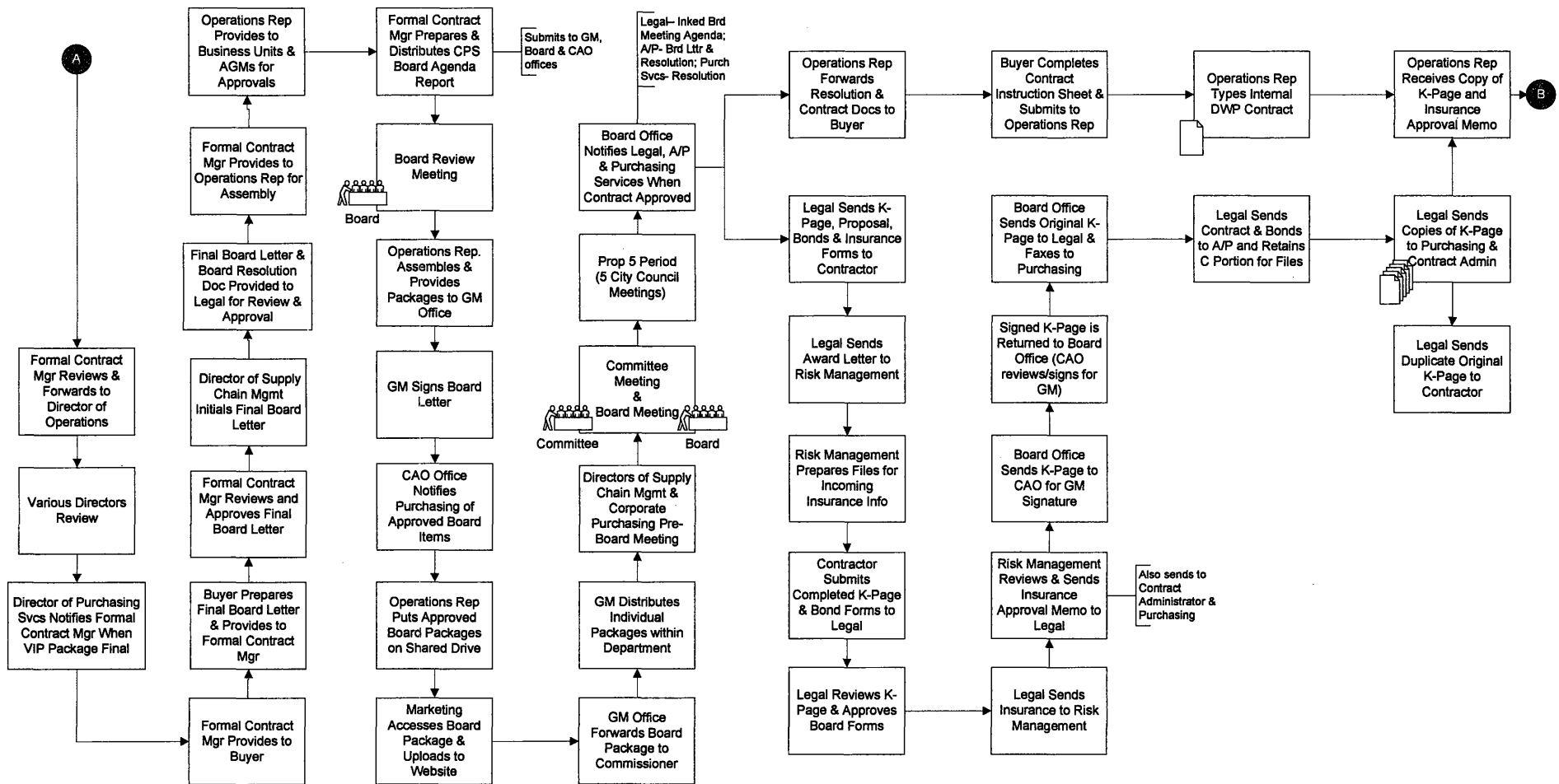


LADWP Personal & Professional Services Process: Selection of Bidder & Award (>Than \$150K)

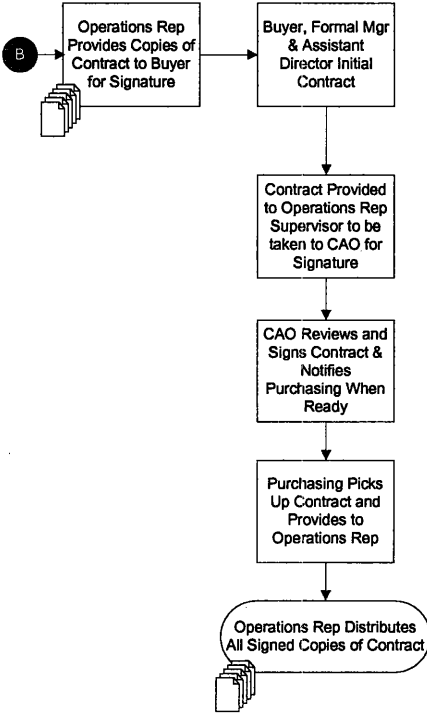


LADWP Specification Process: Awarding the Contract

Development & Approval of Contract



LADWP Specification Process: Awarding the Contract



Appendix F

Task Order Audit Sample

**Appendix F
Task Order Audit Sample**

*Performance Audit of Owens Lake Dust Mitigation Program
Professional Services Contract
Final Report – Agreement No. 47521*

Sample No.	Task Number	Total Amount	Term	1999	2000	2001	2002	2003	2004	2005	2006
Agreement 10001											
1	24.5A.CX	\$2,305,500.00	?-12/31/01				▼				
2	20.1A	\$5,786,000.00	4/27/01 - 4/30/06			▲					▼
3	24.6C.NX	\$461,000.00	2/10/03 - 9/1/04					▲		▼	
4	25.4A	\$2,109,500.00	10/15/01 - 4/3/02			▲	▼				
5	26.4A	\$1,883,000.00	4/27/01 - 12/31/01			▲	▼				
6	26.4A.5x	\$593,500.00	8/6/01 - 6/30/02					▲		▼	
7	28.4B	\$1,928,500.00	11/04/02 - 11/28/04					▲		▼	
8	36	\$3,805,000.00	2/21/01 - 4/26/01			▲	▼				

**Appendix F
Task Order Audit Sample**

*Performance Audit of Owens Lake Dust Mitigation Program
Professional Services Contract
Final Report – Agreement No. 47521*

Sample No.	Task Number	Total Amount	Term	1999	2000	2001	2002	2003	2004	2005	2006
9	44.5D.MX	\$754,000.00	10/1/04-1/1/05						▲▼		
				Owens Lake Dust Mitigation Project, Phase IV South 2004-2005 Build Out Design Package. Construction Mitigation Monitoring							
10	45.6D.FX	\$6,194,500.00	11/15/04-4/30/06						▲	▼	
				DCM Operations Support. Task: DCM Operations-Field Labor							
11	46.3D. NX	\$40,000.00	12/01/04 - 3/31/05							▲▼	
				Implemented Project: Phase V, DCM Development. Task: Ongoing Owens Lake Public Outrea							
12	46.4D	\$3,434,000.00	6/21/04 - 12/31/06						▲	▼	
				Project 10: Phase V-2006 Dust Control Measure Build-Out Design Package. Phase 5: Management Design and Specifications. Task: Task Order Management and 2006 DCM Buildout Design							
13	22.2D.6X	\$642,300.00	3/15/04-12/31/04						▲	▼	
				2004 Snowy Plover Awareness Training, Surveys, Monitoring, and Reporting.							
14	47.4D	\$1,369,500.00	?-5/7/04						▼		
				Sulfate Operations and Maintenance Facilities. Task: Engineering Design							
15	23.6B.DX	\$654,500.00	1/8/03-3/6/06					▲	▼		
				Implement Project 3: Research Coordination; Phase No. 6: Operation; Task: Data Management							
		\$31,960,800.00									

**Appendix F
Task Order Audit Sample**

*Performance Audit of Owens Lake Dust Mitigation Program
Professional Services Contract
Final Report – Agreement No. 47521*

Sample No.	Task Number	Total Amount	Term	1999	2000	2001	2002	2003	2004	2005	2006		
Agreement 10390													
1	1.0	\$2,211,419.80	3/8/99-2/1/01										
				Program Management Work Planning									
2	24	\$1,938,278.00	8/1/99-12/31/00										
				Implemented Project 2: NSS Shallow Flooding 2001 Build-Out DBO Package. Phase 4: Planning, design, and specifications.									
3	3	\$41,679.00	3/12/99-4/12/99										
				Project Controls Work Planning									
4	18.0	\$485,503.18	3/29/99-12/31/99										
				NSS Shallow Flooding Water Balance									
		\$4,676,879.98											

Appendix G

Fiberglass Pipe Report

December 14, 2006

Mr. Ed Salcedo
GCAP Services
18818 Teller Avenue, Suite 275
Irvine, CA 92612-1692

**Subject: Dust Control Water Delivery Pipeline Audit for the North Sand Sheet
Shallow Flooding Area, Owens Lake Dust Control Project**

Dear Mr. Salcedo;

GC Environmental, Inc. (GCE) as a subcontractor to GCAP Services, performed a records audit and participated in interviews with key stakeholders to evaluate the fiberglass pipe installed as part of the Dust Control Project (Project) for the Owens Lake bed. This Project was designed and constructed by Boyle Engineering and Barnard Construction, respectively. CH2M Hill acted as the Los Angeles Department of Water and Power's (LADWP) Project Manager. The constructed pipeline delivers water from the Los Angeles aqueduct to a portion of the Owens Lake bed. The primary audit objective was to compare the LADWP bid specifications with the actual design and construction of the fiberglass-reinforced pipe installed by Barnard Construction. A list of relevant documents reviewed by GCE is included in **Attachment 1** of this letter.

BACKGROUND

In July 1998, the City of Los Angeles and the Great Basin Unified Air Control District signed a Memorandum of Agreement (Agreement). The Agreement was the result of a settlement of issues with the Owens Valley PM10 State Implementation Plan adopted by the Great Basin Unified Air Control District in July 1997. In support of those efforts, the LADWP commenced contractual actions on January 27, 1998 with the award of a three-year contract to CH2M Hill to provide scientific, technical and expert services, including development of a pipe plan for the dust control delivery pipeline to the North Sand Sheet Shallow Flooding area.

Subsequent to this contract, the LADWP requested bids for the design/construction/operation for the Project. The team of Barnard Construction as the prime and Boyle Engineering as a subcontractor was the low bidder for this work and was awarded the Contract.

REVIEW CRITERIA

Specifications for Design/Construction

LAWDP Specification 9544 Division F3, Article 9.1 stated that the “Minimum working pressure rating on all mainline pipes shall be 200 psi.”

Pressure Test Requirement

The LADWP also provided a pressure test requirement for the pipe in Division F4, Article 8. The pipe needed to be pressure tested at 125 percent of the static pressures, 125 percent of the operating pressures, or 110 percent of anticipated surge conditions, whichever is higher.

DISCUSSION

Based on documents reviewed, there appeared to be considerable discussion between parties on the appropriate pipe pressure rating and pipe test pressure. According to Boyle Engineering’s letter to Mr. Scott Brady dated September 20, 2000, the maximum normal working pressure is 129 psig and the maximum surge pressure is 192 psig at the end of zone 2. GCE also reviewed the System Hydraulic Surge Analysis, dated 29 April 2004 prepared by the Bureau of Reclamation. According to this analysis, “The maximum pipeline pressure will occur during the period in July and early August when there is no OLDMP demand. The pressure along Zones 2 and 3 during that time will be about 95 to 100 psi.”

When the original design was performed, the minimum design pressure should have been 192 psi, and per the LADWP specifications the hydrostatic test pressure should have been at 1.25 times the maximum working pressure or 1.10 times the maximum surge pressure. In this case, the surge pressure controls, hence the test pressure would have been $1.1 \times 192 = 212$ psig.

Barnard Construction ordered class 150 pipe from Ameron for this project. To meet the pipe stiffness criteria, Ameron made a “heavy wall” class 150 pipe. A letter signed by Barnard Construction and a professional engineer at Boyle Engineering stated that the calculated pipe design pressure exceeds 200 psig (page number 001781). Ameron, on the other hand, states that the pipe is only class 150, although they also state that the pipe meets the specifications (i.e., 200 psig pressure rating). Ameron pressure tested the pipe at 300 psig as required for class 150 pipe. GCE requested design information from Ameron, however, they did not provide the requested information. Therefore, taking these discussions at face value, GCE accepts that the pipe meets the required minimum working pressure of 200 psig.

Barnard Construction performed several pressure tests with mixed results. Pressure testing was initially performed on the 42-inch fiberglass pipe from station 0+05 to 62+00

at 200 psig. Because this pipe elevation was higher than the elevation at the maximum surge pressure, CH2M Hill stated verbally that the pressure at the end of zone 2 would have been greater than 212 psig, therefore, this was an appropriate test pressure. Given the site elevation change, this seemed reasonable and was accepted. The pipe passed this initial test. The initial test of the entire pipe header was based on 212 psi at the lowest point in the pipe network. There were several failures, including leakage through the walls of several pipes, a hole in the bottom of one pipe, damaged spigot, and rolled o-rings. The pipe did not pass the pressure test at 212 psig because of excessive leakage.

The 212 psig test of the main header was performed in November 2001. The pipe repair was completed shortly afterward and rather than retest the pipe, a decision was made to immediately put the pipe in service to meet the required December 2001 timetable for initial mitigation. The system remained operational for nominally six months until it could be shutdown to perform the required pressure test.

At the time of the second main header test all pipe branches had been connected. It was reported that the initial test of the entire pipe header was performed with the branch connections disconnected with blind flanges over the valves. This was to prevent valve leakage from impacting the pressure test results. At the time of the second test, the lateral pipes were not disconnected; rather the valves were closed to isolate the header from the branch pipes. The isolation valves were rated for 150 psig differential pressure (LADWP specification Division F3, Article 10.8). To avoid possible valve leakage a decision was made by LADWP, CH2M Hill, Barnard Construction, and Boyle Engineering to test the pipe at 160 psig. In discussions with Mr. Richard Harasick of DWP on September 21, 2006, he stated that he made the decision to reduce the required test pressure from 212 psig to 160 psig. He followed this comment with an email dated October 18, 2006 stating that it was his decision to deviate from the original specification by accepting a greater leakage rate. The pipe passed the pressure test at 160 psig. The maximum actual operating pressure as the pipe is currently configured is about 100 psig.

Based on the pressure test requirement given in Division F4 Article 8, the allowable static or operating pressure of the pipe is 128 psig (160/1.25) and the surge pressure rating of the pipe is 140 psig. The pipe is rated for a higher pressure (200 psig) but it has not passed a pressure test at the higher pressure.

CONCLUSION AND RECOMMENDATIONS

1. The installed fiberglass pipe was rated for the required 200 psig required by the specifications. This is confirmed by Boyle Engineering, Barnard Construction and Ameron in letters provided to GCE.
2. A section of the 42" fiberglass pipe passed an initial pressure test at 200 psig.
3. The entire main header did not pass the 212 psig pressure test because of excessive leakage. Problems were discovered during this test that required pipe repair.
4. The pipe was tested at 160 psig and passed.

5. Based on the data provided, the as-constructed pressure rating of the fiberglass-reinforced pipe does not fulfill the LADWP specification. The pipe rating after installation and pressure testing is suitable for 128 psig for the static and operating pressures and 140 psig for the surge pressure.
6. The as-installed pipe rating of 128 psig did not meet the originally required pressure ratings of 129 psig for the maximum working pressure and 192 psig for the maximum surge pressure, however, it is adequate for the actual required pressure as determined by the Bureau of Reclamation after the installation of a surge tank at the Lower Owens River Pump Station (LORPS).
7. Mr. Richard Harasick of LADWP accepted a deviation in the written specification by accepting the reduced test pressure of 160 psig and an increased leakage rate. Because LADWP management allowed the reduced test pressure, this is considered an authorized deviation from the original specification. Because of this and because of the lapse in time between initial project completion and now, it does not seem reasonable to pursue damages against Barnard Construction, Boyle Engineering or CH2M Hill.
8. On a more practical note, given the 5-year operating history of the pipe and the reduced surge pressure and static pressure, the pipe as installed should be suitable without further testing.

ATTACHMENT 1

BIBLIOGRAPHY

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2. Air Pollution Control District, "Owens Valley PM10 Planning Area Demonstration of Attainment State Implementation Plan, 2003 Revision." November 13, 2003.
3. CH2M Hill, "Preliminary Pipeline Routing Analysis – Dust Control Delivery Pipeline LA Aqueduct to North Sand Street Shallow Flooding Area, Owens Lake Dust Control Project."
4. GCAP Services, Inc., "Preliminary Report of Performance Audit of Contracts 10390 and 10001 Between Los Angeles Department of Water and Power (LADWP) and CH2M Hill." July 28, 2006
5. Compilation of 32 documents and correspondences between LADWP, CH2M Hill, and Barnard Construction and compiled by Thayne D. DeVorss. October 14, 2003.
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7. Compilation of documents and correspondences between LADWP, CH2M Hill, Boyle Engineering, and Barnard Construction prepared by LADWP, "CH2M Hill Owens Lake Pipe Documents" Compiled by GCAP.
8. Bureau of Reclamation, Technical Service Center, "System Hydraulic Surge Analysis Lower Owens River Pump Station (50 cfs max)," April 29, 2004.
9. Parsons Engineering Science, "Engineering Cost Estimate for the Proposed EIR Alternative at Owens Lake, CA," May 6, 1997.
10. Los Angeles Department of Water and Power, "DBO Justification Owens Lake Dust Mitigation Program," No Date.
11. City of Los Angeles Department of Water and Power, "Design, Construction, and Operation of the 2001 Shallow-Flooding Irrigation Project Contract No. 9544," February 19, 2004.
12. Department of Water and Power Intra-Departmental Correspondence, "Recommendation of Award for Specifications No. 9544, Requisition No. 43100-00-0303205, Design, Construction and Operation of the 2001 Shallow-Flooding Irrigation Project (Owens Lake Project No. 1)," June 29, 2000.
13. Fax from Mr. Scott Brady, Barnard Construction Company, Inc. to Mr. Edward Salcedo, GCAP Services, RE: List of Change Orders, June 23, 2006.
14. Fax from Barnard Construction, "Owens Lake Shallow-Flooding Irrigation Project No. 173, File 173/28.2 Hydrostatic Testing," October 17, 2003.