




Office of the City Manager

INFORMATION CALENDAR

November 6, 2007

To:  Honorable Mayor and members of the City Council

From:  Phil Kamlarz, City Manager

Submitted By: Claudette R. Ford, Director Public Works

Subject: Audit: Follow-Up of Public Works Construction Contracts

SUMMARY

The purpose of this information report is to advise the Council, the status of the implementation status of the audit recommendations in the attached audit report until each recommendation is fully implemented.

Audit Implementation Updates

❑ **Finding 1: Public Works Cannot Readily Locate All Street Cuts**

Audit Recommendation 1.1 – To continue use of recently acquired GPS device and software to map excavation locations in Geographical Information System (GIS).

Action Plan: The equipment was set-up, tested, and ready to go by the target date of May 1, 2007. The utility inspector has been in the process of implementing the system on a production basis. Full production implementation is targeted for December 1, 2007.

❑ **Finding 2: Current Fees Do Not Recover the Increased Paving Costs Caused by Utility Cuts**

Audit Recommendation 2.1 -Confer with the City Attorney to evaluate the feasibility to recover the long-term increase in paving costs that result from utility cuts.

Action Plan: Staff contacted the City Attorney for concurrence with the process prior to the target date of May 1, 2007. On June 22, 2007, our engineering consultant, Don Todd Associates, was authorized to begin work on a survey of other cities and counties, and whether such fees and methods have stood the test of the many legal challenges. This survey was completed by the target date of August 1, 2007. The evaluation of the applicability and legality of the various methods is underway with a target date of December 1, 2007. If any method is recommended to be feasible in Berkeley, it will be presented for engineering and legal review with a target date of March 1, 2008 for completion. If any resulting fees are recommended for adoption, draft ordinances will be prepared with a target date of July 1, 2008.

Audit Recommendation 2.2 - Consider requiring utility and contractors to backfill excavations with CLSM (Controlled Low-Strength Material) "flowable" fill material.

Action Plan: The Engineering Division has been evaluating "flowable" or slurry backfills for many years and has carefully considered the pros and cons, including costs, reliability, durability, ease of maintenance, life span, etc. The City has allowed pilot programs to be experimented including flowable mix containing fly ash with designated utility agencies and has reviewed the various results achieved. At the time of the pilot program, there were difficulties in maintaining a consistent mix formula at the site. Currently such backfills are not being employed in Berkeley but we will continue to assess any improvements in similar materials or advancements in techniques on an ongoing basis.

□ **Finding 3: Failed Patches Contribute to Bumpy City Streets**

Audit Recommendation 3.1 - To evaluate the feasibility of reducing the period of time that utility companies are allowed to install the final patch on street cut to 15 days or less.

Action Plan: Public Works has initiated discussions with the utility agencies and the City Attorney on the possible institution of new requirements and enforcement methods, including reducing the time allowed for final paving. If feasible, these new standards will be phased in over the next several months and targeted to be in full effect by July 1, 2008.

Audit Recommendation 3.2 - Implement plans to use the new GPS device and software to track compliance with the City's policy on the timelines of the final patch, as soon as practical.

Action Plan: Use of the GPS to track compliance with patching is targeted for December 1, 2007 to be consistent with the target date for using the GPS to map excavation locations.

Audit Recommendation 3.3 - Confer with the City Attorney to consider whether the City can and should assess monetary penalties against a utility company that fails to resurface an excavated area within the required time.

Action Plan: *This is included in the process discussed under 3.1 above.*

❑ **Finding 4: Nonuse of Performance Measure Prevents Effective Monitoring of Engineering Workload**

Audit Recommendation 4.1 - Act on the City Manager's plan to establish measures that tie resources to outcomes.

Action Plan: *Public Works is prepared to act on the plan, which may include reporting on billing utility inspections, minimizing street damage due to utility cuts, and overall workload management.*

Audit Recommendation 4.2 – Consider requiring the Engineering Division to provide information to the Manager of Engineering, which could be used to compare outcomes achieved to resources used, such as actual expenditures and staff hours. Confer with staff in the Budget Office, Finance, and Information Technology (IT) to determine whether such reports are available in the system or can be effectively generated.

Action Plan: *Public Works is ready to act upon the City Manager's Plan as indicated under 4.1 above.*

❑ **Finding 5: Performance Management Was Provided but Was Not Being Used**

Audit Recommendation 5.1 – Establish a policy that will ensure that software will be purchased only after formal approval by the Technology Governance Group (TGG) and IT. Public Works should prepare a notice of intent. Including a schedule of installation and training.

Action Plan: *This was fully implemented on January 22, 2007.*

❑ **Finding 6: Supervisory Construction Site Visits Were Not Documented**

Audit Recommendation 6.1 – Civil engineers (or designees) document all construction site visits.

Action Plan: *This recommendation was fully implemented.*

❑ **Finding 7: Public Works Did Not Bill Timely or Perform Effective Collection Efforts for Utility Companies**

Audit Recommendation 7.1 – Bill Utility companies for past periods as soon as possible.

Action Plan: Public Works has met with Finance to discuss the transition of the Utility Billing Process from Public Works to Finance. Public Works and Finance will be reviewing the business process and looks at ways to improve the current billing process and to automate the new process. Public works will complete the data input for back billings. The balance (third quarter) of calendar year 2005, all of calendar year 2006, and through August 2007 will be billed by the end of September 2007. Starting with September 2007 and all future billings will be billed at the end of each month. Public Works is providing the billing information to Finance and Finance Department is preparing and tracking the utility billings.

Audit Recommendation 7.2 – Develop written policies and procedures to provide for timely billings, and link them to performance measures and evaluations.

Action Plan: Once the back utility billings are caught up, Public Works, Finance, and Information Technology will meet to determine how to automate and revise the current utility billing process and prepare written procedures for the new process. These procedures are targeted to be in place by January 1, 2008.

Audit Recommendation 7.3 – Continue moving forward with plans to use the new GPS device and software to automate capture of inspection data needed to support billings.

Action Plan: This is included in the process described under Recommendation 1.1 above.

Audit Recommendation 7.4 – Provide Finance with monthly status reports of late payments so that Finance may perform collection effort.

Action Plan: This was turned over to Finance by the target date of May 1, 2007.

Audit Recommendation 7.5 – Confer with Finance and the City Attorney's Office to establish payment due dates for billings, as well as to determine whether penalties and interest can be applied to late payments.

Action Plan: Currently, billings are to be paid within 45 calendar days from the date of the invoice. There is no provision in the Master Fee schedule for penalties for payments received after the 45-day period tied to the utility companies. The Master Fee Schedule will be reviewed when writing up new procedures and discussed with Finance, and City Attorney's Office. If determined to be feasible, due dates and penalties will be incorporated into the Master Fee Schedule with a target date of April 1, 2008.

Audit Recommendations 7.6 – Evaluate requiring a utility company to pay the excavation permit fee before the City approves the excavation.

Action Plan: *Public Works is currently in the process of reviewing and evaluating whether the City should require Utility Companies to pay for permits at the time the permit is issued. If permit fees are to be collected in advance, inspection fees may still be billed based on actual inspection time, since the actual time spent doing an inspection varies depending on the extent of the individual trench cut. If it is found feasible to collect permit fees in advance, it will be incorporated into the Master Fee Schedule as discussed under 7.5 above.*

❑ **Finding 8: Construction Contract Bid Process Lacks Transparency and Could Limit Participation by Qualified Bidders**

Audit Recommendation 8.1 Finance's General Services Division monitor the bid process to the extent necessary to ensure that all bid solicitations are conducted openly, in a manner that provides all potential bidders with an opportunity to participate. Ideally, General Services verify the bid posted to the Public Works website. Although Finance agrees with the recommendations, there is currently no capacity for Finance-General Services to assume responsibility for Public Works construction solicitations.

Action Plan: *Finance Department established a target date of January 2008 for implementation.*

Audit Recommendation 8.2 – Public Works modify the Bids and Contracts options on its website. It should either replace the “No current requests” comment with a link to the second option, or combine the first two options.

Action Plan: *This recommendation is fully implemented.*

❑ **Finding 9: Public Works Did Not Require Backfill Testing on Sewer Projects**

Audit Recommendation 9.1 – Should Public Works conclude that compaction backfill testing is appropriate to minimize damage to city streets caused by sewer cuts, we recommend that the Director of Public Works develop a testing plan that will address will conduct the testing, the method of testing, and whether testing will be applied to all cuts under each project, or sample of cuts.

Action Plan: *Public Works has determined that technologies are currently rapidly evolving in the areas of field-testing and measurements. It is prudent to continue the evaluation of newly emerging technologies before adapting new procedures and standards. In the interim, consistent procedures based on the nuclear gauge have resumed on all projects involving excavations to ensure compliance on an ongoing basis.*

❑ **Finding 10: Delegation of Authority to Approve Change Orders Not Documented**

Audit Recommendation 10.1- Obtain formal written authority from the City Manager, to be renewed annually.

Action Plan: *The process had been established as part of the budget adoption cycle.*

Audit Recommendation 10.2- Formally sub-delegate authority to the Manager of Engineering annually in writing. And submit a copy to the Finance Department

Action Plan: *This is part of the process of 10.1 above.*

□ **Finding 11: Purchasing Procedures Still In Draft Form After Several Years (Repeat Finding)**

Audit Recommendation 11.1- Coordinate with the City Attorney’s Office to ensure that the procedures manual is reviewed and approved as soon as possible.

Action Plan: *This is not a Public Works item. The Finance Department will be reporting on this item as part of their response to the audit.*

CURRENT SITUATION AND ITS EFFECTS

Although more work remains to be done, revenues to the General Fund will be enhanced by updated revenue collection procedures, coupled with an effort to collect on the utility back billings.

BACKGROUND

On February 27, 2007, the City Auditor recommended that the City Manager report back on or before September 26, 2007, and every six months thereafter, regarding the audit implementation of Public Works construction contracts. The recently audit period date was from July 1, 2004 through June 30, 2006.

POSSIBLE FUTURE ACTION

The next report on the update for the follow-up audit of Public Works Department construction contract will be on the first Council meeting on March of 2008.

FISCAL IMPACT OF POSSIBLE FUTURE ACTIONS

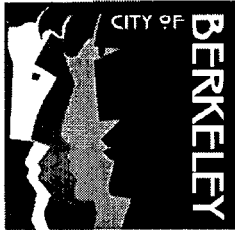
The fiscal impact due to the delay of the implementation on all of the unimplemented audit findings cannot be quantified as of this time.

CONTACT PERSON

Jeffrey L. Egeberg, Manager of Engineering 981-6400

Attachments:

- 1. February 27, 2007 Audit



Office of the City Auditor

CONSENT CALENDAR
February 27, 2007

To: Honorable Mayor and
Members of the City Council

From: Ann-Marie Hogan, City Auditor

Subject: Follow-Up Audit of Public Works Construction Contracts

RECOMMENDATION

Request the City Manager to report back on or before September 26, 2007, and every six months thereafter, regarding the implementation status of the audit recommendations in the attached audit report until each recommendation is fully implemented.

SUMMARY

The Follow-Up Audit of Public Works Construction Contracts was a performance audit designed to:

- Determine whether Public Works and Finance have implemented the recommendations of our June 20, 2000, audit report entitled *Audit of Public Works' Construction Contracts, July 1, 1996 – September 30, 1999*;
- Evaluate the adequacy of performance measures related to construction contract administration, monitoring, billings, and collections;
- Evaluate the sufficiency of the City's policies and standards governing street excavations, and controls in place to minimize damage to City streets;
- Evaluate the effectiveness of systems in place in Public Works to manage the engineering and inspection staff workloads.

The audit focused on construction contracts that were completed, or in process, from July 1, 2004 through June 30, 2006. We reviewed City policies and procedures, surveyed City staff and representatives from other nearby jurisdictions, observed street conditions, and examined relevant supporting documentation.

The audit found that the Public Works and Finance Departments appeared to have implemented most of the recommendations in our June 2000 audit report. However, the purchasing procedures manual was still in draft form (Finding 11). We also found that the City's streets were significantly damaged by the activities of the utility companies. Other significant concerns include:

- Public Works' lack of a useful inventory of street cuts showing the location, source, size, and condition of the resurfaced area. (Finding 1)
- There were insufficient fees assessed to recover the increase in paving costs caused by utility street cuts. (Finding 2)
- The City's standards and enforcement regarding temporary patches are insufficient to prevent failed patches and bumpy streets. (Finding 3)
- Public Works lacked performance measures to enable accountability for engineering resources. There were no reported measures that tie resources used to outcomes (Finding 4).
- Performance management software was provided and was not being used. (Finding 5)
- Billings were late and there was a lack of collection effort. (Finding 7)
- The Engineering Division, which is responsible for designing and managing construction projects, and developing contract specification, also developed, distributed, and published the invitation for bid. Result: Lack of functional segregation of duties and increased risk of fraud. (Finding 8)

FISCAL IMPACTS OF RECOMMENDATION

There is potential for enhanced revenue from assessment of street cut fees, timely billing of fees, and improved collection efforts. We did not estimate the amount of increased revenue due to a lack of documentation. However, we did determine that \$140,000 in fees was not billed, and \$62,000 in billings, going as far back as December 2005, was not collected. As an immediate result of this audit, \$19,000 in outstanding billings was collected and deposited to the General Fund in December 2006.

RATIONALE FOR RECOMMENDATION

Implementation of our audit recommendations could decrease the number of bumpy City streets and result in additional revenue to the City.

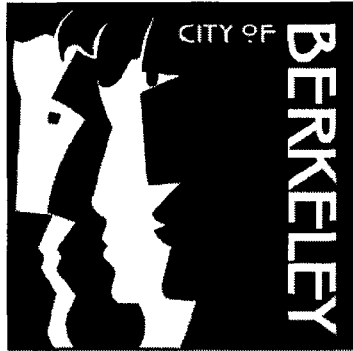
CONTACT PERSON

Ann-Marie Hogan, City Auditor, 981-6750

Attachment:

1. Audit of Public Works Construction Contracts

City of Berkeley



Follow-Up Audit of Public Works Construction Contracts

Prepared by:

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Presented to Council February 27, 2007

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Follow-Up Audit of Public Works Construction Contracts

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Follow-Up Audit of Public Works Construction Contracts

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I. OBJECTIVES OF THE AUDIT

The objectives of this performance audit were to:

- Determine if the Public Works and Finance Departments have implemented the recommendations in our June 20, 2000, audit report entitled *Audit of Public Works' Construction Contracts, July 1, 1996 – September 30, 1999*;
- Evaluate the adequacy of performance measures related to contract administration, monitoring, billings, and collections;
- Evaluate sufficiency of the City's policies and standards governing street excavations, as well as controls in place to minimize damage to City streets caused by excavations; and
- Evaluate effectiveness of systems in place in Public Works to manage the engineering and inspection staff workloads.

II. RESULTS OF AUDIT

Most Prior Recommendations from June 2000 Were Implemented

Based on our review of two contracts, Public Works and Finance appear to have implemented most of the recommendations in our June 2000 audit report. However, the City's purchasing procedures manual was still in draft form (see Finding 11). We could not determine the actual status of certain recommendations without additional testing. The status of the findings in our June 2000 audit report is discussed in detail in Appendix A.

The Engineering Division Is Not Using Performance Measures

The Engineering Division did not have performance measures in place to establish accountability for contract administration, monitoring, billings, and collections. Also, the division did not appear to have some key information readily available to compare outcomes to resources used.

Controls in Place to Minimize Damage Caused by Street Excavations Could Be Strengthened

Information was not available to the Engineering Division to readily identify all street excavations, or cuts, to effectively monitor the current condition of cut resurfacing or need for repair, to estimate the value of damage to streets due to cuts, or to perform meaningful internal reviews of the quality assurance process. In addition, backfill testing was not required on sewer projects to ensure that excavation backfill was compacted to contract specifications.

Policies and Standards Over Street Cuts Need to Be Improved

The City's policies and standards for utility street cuts need reevaluation. For example, fees assessed against utility companies were not sufficient to recover the increase in paving costs caused by utility cuts.

In addition, the City did not require utility companies to resurface excavated areas soon enough to

avoid failure of temporary patches. Also, the City does not assess monetary penalties against companies that fail to resurface streets timely. Finally, the Engineering Division was up to three years behind in billing utility companies for excavation permit and inspection fees.

Systems to Manage Workloads Could be Significantly Improved

The Engineering Division received training and then purchased Microsoft Project Professional 2003 software to plan and track projects and to allocate staff resources. However, the software was not being used. In addition, not all engineers documented their visits to construction sites to oversee the work of engineering inspectors and contractors.

The auditors surveyed engineering and inspection staff regarding engineering staff's perception of the fairness of workload distribution. The results indicated some dissatisfaction with workload management. For example, when the Engineering staff was asked whether the inspection "workload is normally distributed equitably among the Public Works engineering/inspection staff," 100 percent of the inspection staff respondents, and 30 percent of the engineering staff respondents indicated that they disagreed or strongly disagreed with the statement. Appendix B shows the results of the survey of inspectors and engineers.

Finally, we analyzed the engineering staff's lost time due to illness and injury. There was no indication that the Engineering Division incurred excessive lost time due to sick leave or workers compensation leave. Total lost time compared favorably with the selected support department staff.

Other Issues Requiring Management's Attention

Our audit identified an additional issue, which needs to be addressed. The construction contract bid process lacks appropriate segregation of duties and lacks transparency, which increases the risk for fraud.

Our findings, together with recommendations for improvement, are discussed in detail in Section V.

III. SCOPE AND METHODOLOGY

This performance audit covered Public Works construction contracts that were completed or in process from July 1, 2004 through June 30, 2006. It also covered current policies, standards, systems and controls that relate to construction contracts, street excavations, and engineering and inspection staff workload management. To accomplish our audit objectives, we interviewed staff, surveyed engineering and inspection staff, analyzed documentation and reports, and surveyed other jurisdictions. We also observed selected streets that had been excavated and resurfaced. Our audit fieldwork was conducted from June 30, 2006 to November 29, 2006, in accordance with Government Auditing Standards. Audit work was limited to those areas specified above. Our methodology is discussed in detail in Appendix C.

IV. BACKGROUND

Public Works Maintains the City's Infrastructure

The Public Works Department is responsible for maintaining the City's infrastructure, which includes streets and streetlights, sidewalks, sewer main lines and lateral connections, storm drains, parking meters, and the City's fleet of vehicles. It also includes all trails, pathways, and curbs, as well as traffic signs and signals. The Public Works Engineering Division designs and manages construction contracts to improve the infrastructure.

Since December 2000, Public Works has maintained accreditation by the American Public Works Association. To be accredited, an agency must be rated compliant, based on an on-site evaluation, in all applicable practices from a universe of over 500 identified public works management practices. To retain accreditation, an agency must undergo an on site re-evaluation every four years.

Utility Companies Excavate on City Streets

Utility companies excavate on, or cut City streets to install or repair underground equipment, such as pipes or cables. The City requires utility companies to obtain a permit to excavate prior to cutting a City street, unless it is an emergency. Street cuts cause damage and generally shorten the life of the street pavement.

The City Requires Certain Controls Over Contracting

The City Charter and the Berkeley Municipal Code (BMC) establish certain controls over contracting, including the authority for entering into contracts, and a requirement for Council approval for expending more than \$200,000 for public projects, which include construction contracts. The Charter also requires open, competitive bidding. The City expended more than \$14 million in FY 2005, and budgeted more than \$9 million for FY 2006, for capital improvement construction. The latter amount represents almost three percent of the City's total budgeted expenditures.

V. FINDINGS AND RECOMMENDATIONS

THE CURRENT SYSTEM FOR MONITORING, ENFORCEMENT, AND ASSESSMENT OF FEES FOR UTILITY STREET CUTS DOES NOT MEET THE CITY'S NEEDS

Finding 1 Public Works Cannot Readily Locate All Street Cuts

Public Works should improve their systems and processes to monitor or control excavations on City streets made by utility companies. For example, the Engineering Division did not maintain an effective and useful inventory of street cuts, showing the location, source, size, and condition of the resurfaced area, nor did it maintain maps showing cut locations.

There was a lack of documented analysis of the current quality of the cut restorations. Engineering did not maintain an easily accessible record of the quality control process to ensure that the excavated areas were restored in accordance with specified standards. The only complete record of utility cuts and the quality control process was a monthly paper file of utility excavation permits and work crew location reports. The inspector captured certain information from these files on an Access database. This database was used to support billings for permit and inspection fees. However, the database was not current (see Finding Number 7 below), and did not include information on the size of the cut or the condition of the patch. Without adequate records and analysis, Public Works was not able to:

- Readily identify all street cuts;
- Easily obtain information needed to monitor the current condition of cut resurfacing, or the need for repair;
- Estimate the monetary value of damage to streets caused by cuts; or
- Perform meaningful internal reviews of the quality assurance process for cuts.

In October 2006 the City purchased a hand held global positioning system (GPS) device and associated software. The engineering inspector plans to use this device beginning early 2007 to automate capture of information on excavations and inspections, at the excavation sites. Engineering expects to use the captured information to map excavation locations, using Geographic Information Systems (GIS) software.

Recommendations for Public Works

To enhance Public Works' ability to monitor street cuts, we recommend that the Engineering Division:

- 1.1 Continue moving forward with plans to use the recently acquired GPS device and software to map excavation locations in GIS. If properly implemented, this could be a key tool in developing performance and workload information for the utilities, contractors, and City staff. The captured information should include the source (utility company), size, and condition of the cuts, and when they were last inspected by the City.

City Manager's Response

Public Works agrees with the finding and recommendation. The recommendation will be implemented by May 1, 2007.

Finding 2 Current Fees Do Not Recover the Increased Paving Costs Caused by Utility Cuts

Cuts Shorten the Life of Pavement and Increase City Costs

Public Works did not assess fees sufficient to recover the increase in paving costs caused by utility street cuts, or to provide incentive for utility companies to coordinate with the City to minimize damage. Street cuts cause unavoidable damage beyond the area of excavation and generally shorten the life of the pavement, regardless of how well they are restored or maintained. Due to the lack of an inventory of cuts, we did not attempt to determine the monetary value of damage to City streets caused by utility cuts.

Council Resolution Number 62,490-N.S. stipulates that to excavate, a utility company pays a flat \$105 excavation permit fee, plus an inspection fee of \$112 per hour. We spoke to representatives of three California cities, Palo Alto, Sacramento, and Santa Ana, which currently assess and collect street cut fees that are intended to recover increased city costs that result from street cuts. Palo Alto has a variable cut fee schedule, which ranges from \$5 per square foot for streets considered in poor condition, to \$15 per square foot for streets considered in excellent condition.¹ At these rates, a 100 square foot excavation, for example, would provide revenue of \$500 to \$1500. By comparison, the City would only collect \$329 with its current fees, regardless of the size of the excavation.²

The City of Santa Ana found that cities have legal authority to impose cut fees. It also found that such fees do not constitute a tax, since they recover cost that a city incurs as a result of cuts. The study concluded that without street cut fees, as with the City of Berkeley, a utility company has no economic incentive to coordinate excavation activity with a city's repaving schedule, to ensure that it does not cut up a newly paved street.

The May 2006 City Infrastructure Report to the City Council, co-authored by the Directors of Public Works, and Parks, Recreation and Waterfront, disclosed that the City's streets have a "satisfactory" pavement condition rating³. The report concluded that:

An additional \$10 million would be needed over the next five years to sustain the current "satisfactory" pavement condition level. However, this would still create a backlog of deferred maintenance of over \$43.5 million.

Utility company street cuts make it more costly for Public Works to maintain street pavement at a "satisfactory" level.

The franchise agreements between the City and PG&E⁴ require PG&E to restore excavated streets to as "...durable, and good condition as existed..." prior to the cuts, with no cost to the City. Based on the above-mentioned studies, such complete restoration does not appear possible, short of repaving the cut streets. Therefore, it is reasonable that the utility companies compensate the City for the increase in costs necessary to maintain pavement at a "satisfactory" level.

A representative of another city told us that it requires utility companies to backfill excavations with a controlled density field (CDF) concrete known as CLSM flowable fill, with fly ash added. He said that the use of this substance, which does not settle, minimizes the effect of utility cuts on the life of pavement more than any other measure that city has taken.

¹ For a discussion of Palo Alto street cut fees, see the March 2006 report by the Palo Alto City Auditor entitled *Audit of Street Maintenance* at <http://www.cityofpaloalto.org/auditor/reports.html>. Palo Alto substantially increased street cut fees since the audit report was issued.

² This is an estimate based on the permit fee of \$105, plus \$224 for inspections (one hour each at \$112 for inspecting the temporary and final cut patch).

³ City streets had a condition rating of 58 on a scale of zero to 100, based on measurement criteria established by the Metropolitan Transportation Commission.

⁴ PG&E has separate agreements for gas and electric service.

According to Engineering staff, Public Works tested CDF concrete in the 1990s and found, at that time, the batch plants had poor quality assurance. However, the other city representative currently using CLSM flowable fill said that it has experienced few quality assurance problems.

Recommendations for Public Works

To address damage to City streets caused by utility cuts, we recommend that Public Works:

- 2.1 Confer with the City Attorney to evaluate the feasibility of assessing street cut fees sufficient to recover the long-term increase in paving costs that result from utility cuts. If such fees are found to be feasible, implement the street cut fees as soon as practical.
- 2.2 Consider requiring utility companies and contractors to backfill excavations with CLSM flowable fill material mixed with fly ash.

City Manager's Response

Public Works agrees with the finding and recommendations. The recommendations will be implemented by May 1, 2007.

Finding 3 Failed Cut Patches Contribute to Bumpy City Streets

The City does not require utility companies to resurface excavated areas soon enough to avoid failure of temporary patches, and it does not assess monetary penalties against companies that fail to resurface within the required time. Some utility companies install a temporary patch over the excavation area after completing their work, by applying cold-mix asphalt known as cut-back. Cut-back has proven to have a high failure rate, especially in adverse weather conditions. According to Engineering staff, cut-back has a failure rate on a major thoroughfare of 80 percent within five days in winter and within ten days in summer. The temporary patch fails by breaking loose from the surrounding pavement, resulting in a bumpy, uneven surface that could be hazardous to motorists, bicyclists, and pedestrians. The City's excavation permit requires the utility company to replace a temporary patch within 21 days, with the same hot-mix asphalt used for new paving. By comparison, three cities we surveyed require the utility companies to install the final patch in 15 days or less.

Engineering plans to eventually use the hand held GPS device and associated software to track compliance with the City's policy on the timely installation of the final patch.

Recommendations for Public Works

To address the high failure rate of temporary excavation patches, we recommend that Public Works:

- 3.1 Evaluate the feasibility of reducing the period of time that utility companies are allowed to install the final patch on street cuts to 15 days or less.
- 3.2 Implement plans to use the new GPS device and software to track compliance with the City's policy on the timeliness of the final patch, as soon as practical.
- 3.3 Confer with the City Attorney to consider whether the City can and should assess monetary penalties against a utility company that fails to resurface an excavated area within the required time.

City Manager's Response

Public Works agrees with the finding and recommendations. The recommendations will be implemented by May 1, 2007.

**ENGINEERING'S SYSTEMS AND PROCEDURES FOR MONITORING
WORKLOAD AND PERFORMANCE NEEDS IMPROVEMENT**

**Finding 4 Nonuse of Performance Measure Prevents
Effective Monitoring of Engineering Workload**

The Public Works Engineering Division did not have performance measures in place to establish accountability for contract administration, monitoring, billings, and collections. It is widely recognized that successful organizations establish performance milestones, or benchmarks, and measure the extent to which they are achieved. Performance measurements provide information on progress in meeting goals, and enable an organization to hold management accountable for mission accomplishment. An organization cannot manage what it does not monitor or measure.

As recently as 2005 Public Works had performance measures for at least 15 programs or functions, but the City Manager discontinued requiring departments to transmit performance measurement data to his office. He stated that although all programs need basic information to manage operations, a lot of information was collected but not used for management. He indicated that the citywide performance system contained several performance milestones or benchmarks, but only some were relevant to the management of the program. The citywide performance system became an exercise in reporting for the sake of reporting to the City Manager and was not used as a tool for managing operations.

According to the City Manger, the system required revision to focus on measuring whether a program is achieving a desired outcome. The revision would focus on measuring a few qualitative measures that can be used by management, and eventually by the policy makers, to make better decisions on the allocation of resources. Recently the City Manager initiated a new performance management process, led by the Budget Office. He estimates that new performance measures that tie resources to outcomes will be in place by June 30, 2007.

The Engineering Division may not currently have key information it needs to compare outcomes to resources used. For example, the primary report that it uses to inform the Director of Public Works on the status of Engineering projects did not include actual-to-date expenditures, or planned and actual staff hours worked. The report, entitled "Monthly Project Report Summary," was designed to report project budgets but not project expenses. It reports project status by narrative and milestone dates only. As a result, the report was less useful to management than one combining information on planned and actual resources used as well as work accomplished might be. Such a report would enable Engineering management to judge whether satisfactory progress had been made on each project, whether projects would be completed within budgeted costs and targeted completion dates, or whether adjustments or realignments were needed to keep projects on target.

Additionally, it could be used in quarterly meetings with the Budget Office and City Manager to alert them to projected cost overruns, particularly for grant-funded projects. According to the acting Finance Director, grant funded programs Citywide incur significant expenses in excess of budget every year, resulting in unanticipated claims against the General Fund.

At the exit conference, the auditors suggested requiring the Engineering Division to explore reports that compare outcomes with resources used. The Director replied that she assumes, but does not know, that data is available for such analysis. The Engineering Manager also stated that he was not familiar with any reports available that disclosed hours or dollars spent on projects, but they might be available.

Recommendation for Public Works

To address the lack of performance measures, we recommend that the Director of Public Works:

- 4.1 Act on the City Manager's plan to establish measures that tie resources to outcomes. Outcome based measures for the Engineering Division could report on whether:
 - Billings for inspection fees are submitted timely, and utility companies remit payments timely (See finding number 7);
 - The Engineering workload is managed efficiently and equitably; and
 - The effects of street cuts on City streets are minimized.

- 4.2 Consider requiring the Engineering Division to provide information to the Manager of Engineering, which could be used to compare outcomes achieved to resources used, such as actual expenditures and staff hours. Confer with staff in the Budget Office, Finance, and Information Technology (IT) to determine whether such reports are available in the system or can be efficiently generated.

City Manager's Response

Public Works agrees with the finding and recommendations. The recommendation will be implemented by June 30, 2007.

Finding 5 Performance Management Software Was Provided but Was Not Being Used

Software acquired by the Engineering Division at a cost of more than \$20,000⁵ had not been used due to a lack of coordination between training and software installation. The software, Microsoft Project Professional 2003, was intended for use in planning and tracking projects and allocating staffing resources. Engineering staff received training in the new software on February 21-23, 2006. However, the new software was not installed in the Engineering Division until July 20, 2006. A supervising civil engineer told us that by the time the software was installed, staff had forgotten how to use it. As a result, the City has not yet benefited from the cash outlay and will likely incur additional costs for retraining.

⁵ This amount included more than \$13,000 for licensing, and more than \$7,500 for staff training. It did not include labor and employee benefit costs associated with software installation or training attendance.

Recommendations for Public Works

To address the lack of coordination between software training and installation, we recommend that the Director of Public Works:

- 5.1 Establish a policy that will ensure that software will be purchased only after formal approval by the Technology Governance Group (TGG) and IT. Public Works should prepare a notice of intent, including a schedule for installation and training.

City Manager's Response

Public Works agrees with the finding and recommendation. The TGG policy, established on February 2005, addresses this concern. Effective immediately, Public Works will comply with the established policy that software will be purchased only after approval by TGG and that coordination of training and installation will be agreed to before training or installation begin. This recommendation is fully implemented.

Finding 6 Supervisory Construction Site Visits Were Not Documented

A supervising civil engineer stated that he, in conjunction with the project manager, reviews the inspector's work. The project manager performs site visits at various times to oversee and review the construction site to see that public safety, traffic and parking control, environmental concerns, and housekeeping are monitored. However, these site visits by the engineers were not documented. Site visits by the civil engineers or designees are a critical component of contractor oversight and supervision of inspection effort. If they are not documented, management does not have assurance that the engineers actually spend time at the construction sites.

Recommendation for Public Works:

- 6.1 We recommend that civil engineers (or designee) be required to document all construction site visits.

City Manager's Response

Public Works agrees with the finding and recommendation. On January 22, 2007, the Manager of Engineering implemented a procedure that requires engineering staff to sign the inspector's daily log to document official construction site visits. This recommendation is fully implemented.

OTHER ISSUES NEED MANAGEMENT ATTENTION

Finding 7 Public Works Did Not Bill Timely or Perform Effective Collection Efforts for Utility Company Permit and Inspection Fees

\$140,000 in Unbilled Fees

The City was from one to almost three years behind in billing utility companies for excavation permit and inspection fees, which we estimated at almost \$140,000,⁶ as of November 3, 2006.

⁶ We calculated this estimate by projecting actual billings for earlier periods to the unbilled period. We did not factor September 2004 increases in permit and inspection fees into our calculations. We also did not project for Comcast, since

Council Resolution Number 62,490-N.S. requires assessment of an excavation permit fee of \$105,⁷ and an inspection fee of \$112 per hour. Public Works had not billed PG&E or the East Bay Municipal Utilities District for the period January 2004 through March 2005, or for any month subsequent to October 2005 (they were billed for April through October 2005). The City had not billed SBC for any month subsequent to December 2004, or Comcast for any month subsequent to January 2005.

To support billings, an engineering inspector had to manually input inspection data to an Access database. He told us that, due to a heavy inspection workload, as well as other duties, he could not enter the data to the database timely. Also, the Engineering Division had one clerical support person, who could provide limited assistance in inputting the data. However, Engineering plans to use the recently acquired hand held GPS device (See Finding 1) in the future to automate capture of inspection data, at the inspection sites. The inspector told us that he plans to use this device, along with associated software, to upload inspection data to a summary spreadsheet to support billings.

\$62,000 in Billings Not Paid

As of November 29, 2006, the City had not received payment for more than \$20,000 in fees billed in December 2005, and for more than \$33,000 billed in August 2006. In addition, the City had not collected almost \$9,000 billed in June 2006 to reimburse the City for repair of a lateral sewer connection, which a utility company damaged. The engineering inspector said that when the City is late billing, it takes the utility companies longer to verify the supporting data. Public Works did not coordinate with Finance to pursue collection when a utility company does not remit timely. The inspector said that Finance does not see a billing until payment is received, and that he would call a company that has not sent payment after several months. Also, billings to utility companies did not specify a due date or provide for penalties and interest on late payments.

In December 2006, in response to our audit, the City performed additional collection efforts and collected \$19,000 of the \$33,000 billed in August 2006.

Recommendations for Public Works

To address untimely billings for excavation permit and inspection fees, we recommend that Public Works:

- 7.1 Bill utility companies for past periods as soon as possible.
- 7.2 Develop written policies and procedures to provide for timely billings, and link them to performance measures and evaluations.
- 7.3 Continue moving forward with plans to use the new GPS device and software to automate capture of inspection data needed to support billings.

To address late payments by utility companies, we recommend that Public Works:

the only billing to that company was for a period of major cable installation, and would not be indicative of subsequent activity levels. Therefore, we consider our estimate to be conservative.

⁷The City does not assess permit fees against the East Bay Municipal Utilities District (EBMUD), in that EBMUD is a special district government. The District still pays inspection fees.

- 7.4 Provide Finance with monthly status reports of late payments so that Finance may perform collection efforts.

In addition, the Director should consider if the Department can and should:

- 7.5 Confer with Finance and the City Attorney's Office to establish payment due dates for billings, as well as to determine whether penalties and interest can be applied to late payments.
- 7.6 Evaluate requiring a utility company to pay the excavation permit fee before the City approves the excavation.

City Manager's Response

Public Works agrees with the findings and recommendations. Recommendations 7.1 – 7.4 will be implemented by May 1, 2007. Recommendations 7.5 and 7.6 will be implemented by June 1, 2007.

Finding 8 Construction Contract Bid Process Lacks Transparency and Could Limit Participation by Qualified Bidders

Lack of Functional Segregation

There was a lack of functional segregation in the construction contract bid process. The Engineering Division, which was responsible for designing and managing construction projects, and developing contract specifications, also developed, distributed, and published the invitations for bid (IFB). The Director of Public Works expressed concern that bid solicitations were not advertised or distributed in a manner that would ensure that all potential bidders would have an opportunity to bid on contracts. Section 67 of the City Charter requires that contracts be awarded to the lowest responsible bidder.

When an organization segregates duties, it helps assure efficiencies in the process and allows employees to monitor their own work as a team, correcting any errors before the transactions are complete. Functional segregation increases efficiency and monitoring of operations, and helps prevent improper activities, including fraud.

Public Works Website May Have Discouraged Qualified Bidders

Invitations for bid were posted to Public Works Website, but this posting did not entirely compensate for the lack of functional segregation. For example, the Finance - General Services Division did not monitor the website to ensure that all solicitations were posted, until October 2006, after we raised the issue. Also, the manner of posting could have discouraged potential bidders. The first option under "Bids and Contracts" on the Public Works homepage stated "No current requests" as the last line of text. However, the second option listed several contracts that were open to bidding, as of September 29, 2006. Our concern is that a potential bidder might have incorrectly concluded that there were no bidding opportunities. As a result, the City might not have received bids from the lowest cost, or most qualified potential bidders.

Recommendation for Finance

To address the lack of functional segregation, we recommend that:

- 8.1 Finance's General Services Division monitor the bid process to the extent necessary to ensure that all bid solicitations are conducted openly, in a manner that provides all potential bidders with an opportunity to participate. Ideally, General Services should eventually assume responsibility for bid solicitation.

City Manager's Response

Finance agrees with the finding and recommendation. Finance – General Services is currently monitoring the Public Works website for posting of bids. When hardcopy bid documents are received by Finance – General Services they verify the bid is posted to the Public Works website. Although Finance agrees with the recommendations, there is currently no capacity for Finance – General Services to assume responsibility for Public Works construction bid solicitations.

Auditor's Disposition:

There appears to be a significant risk that the City could suffer financial losses due to this lack of segregation of duties. Accordingly, we recommend that Finance prepare a written analysis of the risk, and the anticipated cost to address that risk. If the risk appears high and the City Manager recommends accepting the risk rather than funding the mitigations, this analysis should be presented to Council for a formal acceptance of risk.

City Manager's Response

Finance agrees to implement the recommendation by January 2008.

Recommendation for Public Works

To address misleading information on the Public Works Website, we recommend that:

- 8.2 Public Works modify the Bids and Contracts options on its Website. It should either replace the "No current requests" comment with a link to the second option, or combine the first two options.

City Manager's Response

Public Works agrees with the finding and recommendation. During audit fieldwork and in response to the audit, the website was modified to eliminate the misleading information and now provides a link to projects open to bidding. This recommendation is fully implemented.

Finding 9 Public Works Did Not Require Backfill Testing on Sewer Projects

Public Works did not require testing on sewer projects to ensure that excavation backfill was compacted to contract specifications. Street paving contracts normally require compaction testing. According to engineering personnel, such testing was not considered necessary on sewer projects for two reasons. First, the area of each excavation is small. Second, sewer projects are intended to be scheduled in proximity to street paving projects, i.e. the street will be repaved within a relatively short period. However, although prompt repavement may have been intended, it was not typical. Only about half of the streets covered by current sewer projects were scheduled for re-pavement

within the next five years, as of September 5, 2006. As a result, there is an increased risk that the cut restoration will fail before the street is repaved. According to the Manager of Engineering, since we started our review, Public Works has begun evaluating different testing methods that may be more accurate for small excavations.

Recommendation for Public Works

- 9.1 Should Public Works conclude that compaction backfill testing is appropriate to minimize damage to City streets caused by sewer cuts, we recommend that the Director of Public Works develop a testing plan that will address who will conduct the testing, the method of testing, and whether testing will be applied to all cuts under each project, or a sample of cuts.

City Manager's Response

Public Works agrees with the finding and recommendation. The recommendation will be implemented by August 1, 2007.

Finding 10 Delegation of Authority to Approve Change Orders Not Documented

On both contracts we reviewed, either the Manager of Engineering, or the Project Manager (acting for the Manager of Engineering) approved contract extensions and change orders without evidence of delegated authority for such action. The Council resolutions approving both contracts authorized only the City Manager to execute contract extensions and change orders. The total costs incurred on both contracts remained within the amounts authorized by Council.

Recommendation for Public Works

To address the lack of evidence of delegation of authority to approve contract change order, we recommend that the Director of Public Works:

- 10.1 Obtain formal written authority from the City Manager, to be renewed annually.
10.2 Formally sub-delegate authority to the Manager of Engineering annually, in writing, and submit a copy to the Finance Department.

City Manager's Response

Public Works agrees with the finding and recommendations. Effective immediately, the delegation and sub-delegation of authority will be reviewed and approved annually, with the budget cycle.

Finding 11 Purchasing Procedures Still in Draft Form After Several Years (Repeat Finding)

The purchasing procedures manual has been in draft form for several years. Written procedures formally convey management's intent as to uniform application of policy. Written procedures are an important management tool to help establish and enforce work standards, and consistency of performance. City staff may perceive draft procedures as temporary, and therefore, optional. We recommended that Finance review, update, and finalize the draft procedures in our June 2000 audit report, and our March 2005 audit report entitled "Purchase Order Audit – Select Public Works Divisions At the Corporate Yard."

According to General Services Division personnel, the draft manual currently posted to Groupware

on the City's intranet was revised since our 2000 audit, and is considered final pending review and approval of the City Attorney's office.

Recommendation to Finance

To expedite finalization of the purchasing procedures manual, we recommend that the Director of Finance:

- 11.1 Coordinate with the City Attorney's Office to ensure that the procedures manual is reviewed and approved as soon as possible.

City Manager's Response

Finance and the City Attorney agree with the finding and recommendation. The recommendation will be implemented by April 2007.

VI. CONCLUSION

The audit identified a number of issues that require management's attention.

- The City's policies, standards, and controls that pertain to excavations, or cuts, on City streets need reevaluation.
- Fees paid by utility companies are not sufficient to recover increased paving costs that result from excavations they make on City streets.
- Performance measures to enable accountability for the Engineering workload should be developed and used as a tool for managing operations.
- The construction contract bid process lacks transparency. This could discourage potential qualified bidders and increases the risk of fraud.
- The delegation of authority to approve contract change orders was not documented.
- Purchasing procedures were still in draft form after several years (repeat finding).

Implementation of our audit recommendations could decrease the number of bumpy City streets and result in additional revenue to the City. There is potential for enhanced revenue from assessment of street cut fees, timely billing of fees, and improved collection efforts. We did not estimate the amount of increased revenue due to a lack of documentation. However, we did determine that \$140,000 in fees was not billed, and \$62,000 in billings, going as far back as December 2005, was not collected. As an immediate result of this audit, \$19,000 was collected in outstanding billings in December 2006.

We would like to thank the Public Works Director and her staff for their courtesy and cooperation during the course of this audit. We would also like to thank the Information Technology Department for their assistance with the on-line survey of inspectors and engineers. Finally, we would like to thank the Finance Department for their continued cooperation in our audit efforts.

Appendix A: Status of Our 2000 Audit Report Findings

Our 2000 audit found substantial weaknesses in contract administration and controls. Based on our follow-up review, it appears that most of our recommendations were implemented. However, expanded testing would be necessary to conclusively determine if our recommendations to correct Findings 3 and 5 were resolved. The findings in the 2000 audit were:

1. Contract expenditures exceeded the amount authorized by the Council, without approval;
2. Instead of awarding a contract to the low bidder, Public Works amended an existing contract at a higher cost;
3. The City did not require follow-up testing to ensure that contractors corrected deficiencies identified by field density tests;
4. There was no evidence that City inspectors reviewed progress payments to ensure that the contractors actually performed the work, or delivered the materials covered by the billings;
5. There was no evidence that City inspectors approved extra work;
6. One contractor did not obtain the full amount of liability insurance required by the contract;
7. Inspectors did not participate in project planning;
8. Design related contract change orders were not signed by the design engineer;
9. Contract general provisions were outdated;
10. Contracts did not have a required audit clause;
11. Purchasing procedures were not finalized after several years in draft form; and
12. The purchasing representative did not sign the Abstract of Bids Worksheet to attest to the propriety of the contract award process.

Implementation status on the 2000 audit follows. Specifically, on the two sampled construction contracts we reviewed:

1. Total expenditures were within the limits authorized by Council;
2. The contracts were awarded to the low bidder;
3. There was no evidence of failed density tests;
4. Engineering inspectors reviewed and signed progress billings;
5. Daily extra work reports were not applicable to the reviewed contracts, since the contractors were not compensated based on labor hours or wages paid;
6. Contractors provided evidence of required insurance;
7. To the extent considered necessary for individual projects, engineering inspectors participated in project planning;
8. The design engineer signed design related change orders;
9. According to Legal staff, general provisions for above ground construction projects were updated, and those for below ground projects are in process of revision, though existing provision are considered adequate;
10. The contracts contained a right to audit clause;
11. Purchasing procedures were not finalized after several years in draft form; and
12. The Purchasing representative signed the Abstract of Bid Worksheet.

**Appendix B: Results of Survey of Public Works
Engineering Inspectors and Engineers**

Question	Inspectors ^(Note 1)		Engineers ^(Note 2)	
	Strongly Agree/Agree	Strongly Disagree/Disagree	Strongly Agree/Agree	Strongly Disagree/Disagree
1. The public works department has clear written or oral guidance that governs the distribution of workload among the inspection/engineer staff.	60%	40%	71%	29%
2. The workload is normally distributed equitably among the public works inspection/engineer staff.	0%	100%	71%	29%
3. Certain inspectors/engineers are required to carry a disproportionate share of the inspection/engineering workload.	80%	20%	36%	64%
4. Within the last two years, there were times when the distribution of the workload adversely impacted the timely completion of a project, or the quality of work performed.	60%	40%	21%	79%
5. Management shows favoritism to certain inspectors/engineers in the assignment of projects.	40%	60%	21%	79%
6. The Public Works Department management gives appropriate consideration to the strengths and weaknesses of individual inspectors/engineers when assigning projects.	80%	20%	86%	14%
7. To the extent possible within the current alignment of staff, projects are assigned to the inspector/engineer who is best suited to successfully handle the project.	100%	0%	86%	14%

Follow-Up Audit of Public Works Construction Contracts

Question	Inspectors ^(Note 1)		Engineers ^(Note 2)	
	Strongly Agree/Agree	Strongly Disagree/Disagree	Strongly Agree/Agree	Strongly Disagree/Disagree
8. The Public Works inspection/engineer staff is sufficient in size to accomplish its workload timely, with high quality work.	40%	60%	14%	86%
9. All Public Works inspectors/engineers are adequately trained and knowledgeable in their areas of expertise.	20%	80%	71%	29%

(1) Five of six Public Works engineering inspectors completed our questionnaire.

(2) Fourteen of 15 Public Works engineers completed our questionnaire.

Appendix C: Detailed Statement of Methodology

To determine if Public Works has implemented our prior audit recommendations, we selected two construction contracts from a list of all contracts provided by the Department that were completed, or in process, from July 1, 2004 through June 30, 2006. We reviewed documentation in the contract files that evidence the status of implementation of our recommendations, and questioned applicable engineering staff, as needed.

To evaluate policies and standards for, and controls over street excavations, we reviewed current written guidelines and standards, as well as agreements with utility companies. We also interviewed engineering and inspection staff, and inspected applicable documentation. In addition, we surveyed a small number of nearby cities on their requirements for utility companies to re-surface (patch) excavated areas. We also observed cut patching on several City streets. Finally, we spoke to representatives of three California cities regarding fees imposed to recover damage to their city streets caused by utility company excavations.

To evaluate the effectiveness of systems in place in Public Works to manage the engineering and inspection staff workloads, we interviewed management personnel to inquire about current policies, procedures, standards, reports, and management tools. We also reviewed related documentation and reports. In addition, we requested that all Public Works engineers, and engineering inspectors complete an anonymous, on-line survey, in which they were asked questions regarding the fairness and effectiveness of workload management. Finally, we analyzed the engineering staff's lost time due to illness and injury, in relation to that of other City employees. Our audit was conducted from June 30, 2006 to November 29, 2006, in accordance with Government Auditing Standards.

