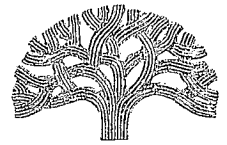


**Performance Audit:  
The Public Works Agency**

**April 29, 2009**

# CITY OF OAKLAND



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April 29, 2009

OFFICE OF THE MAYOR  
HONORABLE CITY COUNCIL  
OAKLAND, CALIFORNIA

**RE: A Performance Audit of the Public Works Agency**

Dear Mayor Dellums, President Brunner and Members of the Council:

I am pleased to present *A Performance Audit of the Public Works Agency*. This audit is a comprehensive evaluation of the Public Works Agency. Unlike a financial audit, this performance audit is a rigorous analysis of the operations, productivity and performance of every aspect of the Agency.

I began this audit process by holding community meetings as well as conducting an on-line citizen survey to get resident's perspective on street sweeping, illegal dumping, park maintenance and traffic lights. The Matrix Consulting Group, a recognized authority in municipal public works auditing, was selected through a competitive RFP process to work with my office in performing the audit.

The Public Works Agency faces many challenges with the convergence of an aging infrastructure, the City's financial deficit and Oakland's growing population. Our audit found that to effectively face these challenges, the Agency must fundamentally reshape how it manages itself, while strengthening service delivery and retooling its workforce.

The audit report contains more than 290 specific recommendations and outlines several key initiatives for the Agency to move forward. Areas such as:

- Management accountability to ensure managers have the necessary systems to effectively leverage the workforce while meeting service standards;
- Changes in organizational structure to support accountability;
- Identifying core services and the quality of service to be provided – essentially calling for Public Works to scale down the scope of services and do them better;

- Effective asset management systems to ensure that decisions regarding the condition and performance of our assets will be made with a long-term view of their preservation and renewal;
- Reducing staff and changing the mix of talents to re-engineer work processes to be more cost-efficient;
- Identifying new sources of revenue such as impact fees, potential sponsorships and special taxes; and
- Preventively maintaining the City's assets to improve operating efficiency, prevent premature replacement and avoid service interruptions.

In comparison to other cities, Oakland's Public Works Agency receives very low General Fund support – only 2%. Comparable cities receive anywhere from eight to thirteen times more support from their General Fund. For example:

- Long Beach , CA operates on 17%;
- Anaheim, CA operates on 19%; and
- Fresno, CA operates on 26% General Fund support.

Given the challenges the Agency faces this audit is a paramount call to action. At this time, the focus must be on the long-term preservation of Oakland's infrastructure. Oakland's taxpayers have an enormous investment in our streets, sidewalks, traffic signals, street lights, parks and sewers. The replacement value of our streets alone is nearly one billion dollars.

The tough choices that are needed to transform the Public Works Agency will require the support the City's leadership as well as our citizenry. It is time that as a community we put our infrastructure first, acknowledging that it is indeed the essential fabric of our city.

I would like to express my appreciation to the City Administrator and Agency Director Raul Godinez, his executive management team, and every employee of the Agency for their cooperation during our audit. I believe this cooperation is a testament to moving the Public Works Agency forward for Oakland. A response from the Administration is included in the audit report.

Respectfully submitted,



COURTNEY A. RUBY, CPA  
City Auditor

# **City of Oakland Office of the City Auditor**

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Performance Audit of the  
Public Works Agency

**April 29, 2009**



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# 1. INTRODUCTION AND EXECUTIVE SUMMARY

The report which follows presents the results of the performance audit of the Public Works Agency (Agency) conducted by the Matrix Consulting Group (MCG).

The executive summary, below, introduces the performance audit, and presents an overview of the findings, conclusions and recommendations presented throughout this report.

## 1. AUDIT SCOPE AND OBJECTIVES.

The MCG conducted a comprehensive organizational and management analysis of the Agency's existing operations, organizational structure, service levels, infrastructure management, and staffing levels. The analysis was fact-based and included all aspects of service provided by the Agency. The analysis focused on the overall performance and productivity of the Agency. The operational assessment included interviews with key stakeholders (internal and external), field visits, staff interviews, an assessment of the organizational culture, an evaluation of existing workload, activity and performance metrics, review of call center operations and citizen complaint follow-up, and a benchmark comparison with other cities in California with similar operations.

The analysis was to address the following sets of questions:

- **Measures of success** – Are metrics in place and actively utilized for determining successful outcomes? Are additional or alternative measures desirable?
- **Organizational structure** – Does the current organizational structure optimize opportunities for efficient and effective service delivery?
- **Workforce considerations** – Is the workforce reaching reasonable standards of productivity? Are staffing levels adequate or excessive relative to programmatic goals? Are absenteeism levels high or low? Are overtime levels high or low? Are

there identifiable patterns of absenteeism and overtime use? Does staff possess the requisite skills and knowledge to achieve the Agency's goals and further its mission?

- **Funding levels** – Is funding adequate or excessive relative to program goals?
- **Business processes** – Are current business processes efficient and effective? Are internal controls adequate to control and monitor productivity, absenteeism and overtime?
- **Benchmarking** – How do structure, funding levels, staffing levels and workforce practices, business processes, and performance align with comparable organizations?
- **Opportunities for improvement** – Are there opportunities to better serve key customers of the Agency? How is technology utilized to increase effectiveness and efficiency of operations?

The results of the analysis are intended to provide a “snapshot” of where the Agency is today, and from this place to define a long-term vision of where the Agency needs to go to be an effective, efficient, progressive, and modern public works organization.

## **2. AUDIT METHODOLOGY**

This audit was conducted in accordance with Government Auditing Standards, July 2007 revision, as developed by the Comptroller General of the United States. In accordance with these standards, the MCG completed the tasks below in conducting the audit.

- An entrance conference was held with Agency managers to introduce MCG staff, describe the performance audit process and protocol, and request information regarding the Agency.
- An initial review of Agency activities was conducted by MCG including interviews with managers and supervisors of the Agency, focus groups with residents of Oakland to assess their perspectives regarding the services delivered by the Agency, an employee survey of the Agency's employees, a comparative survey of peer cities, and a best management practices analysis.
- Fieldwork was conducted by MCG to analyze the operations, organizational structure, service levels, infrastructure management, and staffing levels of the

Agency with additional interviews, collection, and analysis of data. At the conclusion of the fieldwork activities, the MCG conveyed its preliminary findings, conclusions, and recommendations in a preliminary report.

- The preliminary report was provided to the Agency and the Agency was provided with the opportunity to comment. The MCG considered the Agency's comments before finalizing the report.

### 3. BACKGROUND

The Agency is responsible for the management and maintenance of the City's infrastructure including such assets as: streets, street and park trees, sidewalks and pathways; parks and public landscaped areas; sewers and storm drains; buildings and structures; vehicles and equipment; street lights and traffic signals; support of community volunteers for beautification and cleanup projects; residential garbage and recycling contract administration; graffiti abatement; and facilitation of environmental compliance.

Important points to note concerning the administrative plan of organization for the Agency are presented below.

- **The Agency Director serves as the chief executive officer for the Agency.** The Agency Director supervises three executive managers; each of these executive managers is responsible for a separate department within the Agency. These executive managers include the Agency Administrative Manager, the Assistant Director for Infrastructure and Operations, and the Assistant Director for Facilities and Environment.
- **The Agency Administrative Manager for the Administrative Services Department manages agency-wide administrative services.** These agency-wide administrative services include Human Resources, Fiscal Services, Training and Safety, City Council Agenda Coordination, and the Agency Customer Call Center.
- **The Assistant Director for Infrastructure and Operations Department manages three divisions.** These three divisions are Electrical Services and Traffic Maintenance, Infrastructure Maintenance, and Equipment Services.

- **The Assistant Director for the Facilities and Environment Department manages four divisions.** These four divisions are Environmental Services, Facilities Services, Keep Oakland Clean and Beautiful, and Parks and Building Services.

The number of authorized positions within the Agency has decreased from 838.16 full-time equivalent positions in FY 2005-06 to 645.03 full-time equivalent positions in FY 2008-09. This reduction is predominantly the result of organizational restructuring: the transfer of the Engineering and Construction Department from the Agency to the Community and Economic Development Agency (CEDA).

The Agency is responsible for the management and maintenance of a diverse infrastructure including:

- 2,300 lane miles of streets, 1,120 miles of sidewalk and curb, 7,746,321 square feet of gutter and 187 pedestrian pathways;
- Over 1,000 miles of sanitary sewer pipes; 31,000 structures and 7 pump stations;
- Over 640 acres of developed parks, public grounds, plazas and open space properties; 1,200 acres of open space; and approximately 100 street medians with landscaping, and special lighting;
- 36,000 streetlights, consuming 22 million kilowatt-hours of energy annually (about 1/3 of the city's electricity costs) and 670 signalized intersections;
- 370 miles of stormwater collection pipes, 16,000 stormwater structures, 40 miles of creeks, and 5 pump stations; and
- Over 300 City buildings.

The replacement value of this infrastructure is significant. For example, the value of the City's streets, in 2007, was determined to be \$948,347,000.

#### **4. COMMUNITY AND EMPLOYEE INPUT REGARDING THE AGENCY**

The MCG used a number of measures to obtain feedback and input from the community and from the employees of the Agency. This included community focus groups, an on-

line Internet questionnaire completed by members of the community, and a questionnaire completed by employees of the Agency. The result from each of these measures are summarized below.

**(1) Employee Input and Feedback**

76% of all employees of the Agency responded to the questionnaire. 75% of all of the responses by employees were positive, while 25% were negative. This is a highly positive response rate by employees.

- The positive responses are presented below.
  - Employees in their respective work units are willing to confront and solve problems (rather than “sweep them under the rug”).
  - Their immediate supervisors are accessible when employees need him / her.
  - The employees understand what is expected of them in their jobs in their work units.
  - The safety of employees in their respective work units is a priority to the supervisors and managers.
  - The employees are proud to work for the Agency.
  - A high level of performance is expected of employees of the Agency.
  - The employees in their respective work units help each other out when someone falls behind or gets into a tight spot.
  - The employees are encouraged to use their own initiative and judgment when carrying out their job in their respective work units.
  - Customer service is a top priority in their respective work units.
  - Their respective work units provide a high level of service to the residents of Oakland.
  - The employees in their respective work units are dedicated to meeting customer expectations.

- Safety training is a part of the ongoing staff development and training in their respective work units.
- Those areas in which there was a mixed response by employees included the adequacy of clerical and secretarial support; the efforts by management of the Agency to take action on employee ideas to improve the operation of the Agency, and to take a genuine interest in the employees of the Agency, the efforts by management to provide a clear picture of where the Agency is headed and keep employees well-informed about what is going on in the Agency; the participation by employees in Agency decisions; the equitable balance of workload among employees; and the condition of vehicles assigned to employees.
- The negative responses by most responding employees are presented below.
  - Respondents did not believe that the Agency has enough employees in their respective work units to handle the workload.
  - Respondents did not believe that the Agency kept them well informed of what is happening in the Agency.
  - Respondents did not believe that workload is evenly balanced among the employees in their respective work units.
  - Respondents did not believe that the vehicles assigned to their respective work units are in good condition.

## **(2) On-Line Internet Questionnaire**

This questionnaire was posted on the City Auditor's web site. A total of 343 responses were received to this questionnaire. Important points to note regarding the questionnaire are presented below.

- 54% of the respondents were unaware that the Agency operated a Call Center, while 42% were aware of its operation.
- The five (5) services delivered by the Agency that the respondents were most satisfied with included trash pickup and recycling, traffic signs, streetlight maintenance, and street pavement stencils.
- The five (5) services delivered by the Agency that the respondents were least satisfied with included street maintenance, sidewalk maintenance, pothole patching, graffiti removal from public property, and illegal dumping cleanup.

Overall, many respondents indicated that the Agency employees were courteous and professional in responding to their service requests, but many expressed concerns regarding the Agency's response time to complaints, the Agency's responsiveness to what was needed to address the complaints, and the Agency's performing to their satisfaction. In fact, many respondents indicated that they needed to contact their City Council representative for help in resolving a Agency-related complaint.

### **(3) Community Focus Groups**

The MCG and the City Auditor administered four different focus groups to obtain candid feedback regarding the services provided by the Agency. A total of 61 residents participated.

- Participants cited satisfaction with the levels of service in a number of instances. These included illegal dumping cleanup, graffiti abatement, park maintenance for several parks, and the Call Center.
- Participants expressed concerns regarding the services delivered by the Agency. These concerns included that the Agency was complaint-driven, it did not anticipate or prevent problems, the levels of service and quality of work were inadequate, and the responsiveness of the Agency did not meet their expectations, and it was difficult to assess whether the extent of this problem was due to a lack of communication by the Agency with Oakland residents and businesses or insufficient funding and staffing.

## **5. EXAMPLES OF POSITIVE FEATURES OF THE AGENCY**

A performance audit, by its nature, focuses on opportunities for improvement. However, the Agency has a number of strengths in its operations. Examples of these strengths are portrayed below.

- The Agency has been accredited by the *American Public Works Association*. The Agency is one of fifty-two (52) agencies that have been accredited by the Association since the initiation of this program in 1996.
- Sanitary sewer master plans have been developed to guide the maintenance and rehabilitation of the sanitary sewer collection system.



- The Agency has developed a *PWA Deliverables Index* that identifies deliverables (e.g., infrastructure maintenance work management system, Agency work rules and procedures, safety training program improvement, return on investment, etc.) and the specific staff within the Agency responsible for the deliverable.
- The Agency is installing Azteca Cityworks, a computerized maintenance management system. The system can serve as the basis for an effective asset management system. The Agency has already acquired and installed Fleet Focus, which can serve as an effective basis for managing the City's fleet assets.
- Oakland has been awarded a Tree City USA award for twenty-four (24) years.
- The *Oakland Parks Coalition* conducts an annual condition assessment of the City's parks. The 2007 annual assessment found that many parks showed an improvement since the previous year's assessment. The Coalition believed this was due primarily to the increased efficiency of the Agency and to investment in specific park projects by City Council members and non-profit organizations.
- In completing an anonymous survey, employees of the Agency had relatively high levels of satisfaction. Approximately, 75% of responses were positive (either "somewhat agree" or "strongly agree"), 25% were negative (either "somewhat disagree" or "strongly disagree.>").
- The Agency conducts regular meetings with its management and supervisory staff to foster communication. The executive management team meets weekly, the lead team meets once or twice a month, and supervisors meet quarterly.
- *SustainLane Government*, an online sustainability best practices knowledge base for state and local government, ranked Oakland 9<sup>th</sup> overall in the country in terms of environmental sustainability; only San Francisco was ranked higher in California.
- The Agency conducted a facility condition assessment in 2007 of 62 city-owned buildings to determine needed capital rehabilitation and renewal needs.
- The Agency has developed and implemented a preventive maintenance program for heating, ventilating, and air conditioning equipment, for buildings at the Civic Center, the Hall of Justice, and the Eastmont police substation.
- A number of tools have been developed to assure the accountability of custodial staff including custodial task lists, checklists, inspection forms, etc.
- All of the green and red lamps in traffic signals have been converted to light-emitting diode (LED) type lamps.

- The bulbs used in the streetlight fixtures are high-pressure sodium. These bulbs are energy efficient and provide approximately five (5) years of service life.
- An inventory of regulatory signs was conducted in April 2007 as part of the *Citywide Sidewalk / ADA Inventory*.
- Diamond grade reflective signs are utilized for regulatory signs.
- Overall, stormwater drain inlets are cleaned once a year.
- There is an asset inventory of stormwater drainage structures.
- The Agency focuses on “hot spots” for graffiti abatement. Four technicians in the Keep Oakland Clean and Beautiful Division are assigned as 1-person crews to graffiti abatement and assigned a route. The crews utilize graffiti service requests from the Agency’s Call Center.
- The City contracts with Team Oakland, a youth employment program (YEP) for 100 youth to “clean and green” the City. The 2006-07 indicated that YEP youth had collected 124.5 tons of debris.
- The Keep Oakland Clean and Beautiful Division uses work furlough inmates to assist in vegetation control on vacant city lots, medians, etc.
- The illegal dumping / litter enforcement program assigns staff to geographical areas for abatement of litter / illegal dumping. This enforcement includes the collection of litter / illegal dumping from “hot spots.”

These examples of strengths in the Agency provide a sound basis for enhancing the effectiveness and efficiency of the Agency.

## **6. KEY INITIATIVES**

While the Agency has made a number of improvements in the past several years, the Agency faces daunting challenges and significant opportunities. From a financial perspective, the Agency’s situation is difficult, in large measure, due to the limited General Fund support. Indeed, comparisons to benchmark cities in the State suggest that the Agency has much less General Fund revenue to meet its operating and capital needs. The Agency faces a need for significant investments to upgrade its service

levels and to renew and rehabilitate streets, sidewalks, sewers, parks, facilities, and other assets. Continuing to defer these expenditures only increases the magnitude of future costs. The Agency also faces a significant challenge resulting from the addition of parks, medians, and buildings by the City without the additional staff and supplies needed to maintain and repair these assets. The discrepancy will result in the degradation of the level of service provided by the Agency and the need for the premature replacement of these assets.

At present, however, the Agency is not well-positioned to address these challenges and opportunities, and does not have a comprehensive plan. Not only does the Agency lack a plan for addressing the daunting challenges that it faces, it also lacks the organizational capabilities needed to successfully drive change. The barriers that hamper the Agency's efforts to improve include the lack of a management infrastructure that can be used to hold managers and supervisors accountable for driving change, and a framework for prioritizing the allocation of scarce financial resources to core Agency services. The situation facing the Agency, while extremely difficult, is by no means hopeless. However, the Agency cannot address its problems through incremental change. Unless the Agency is fully committed and necessary resources are invested, the challenges that the Agency faces will result in a downward spiral.

The Agency's transformation to address these daunting challenges should be built around seven key initiatives. These seven key initiatives include the following:

- Management accountability and management systems needed to enhance the effectiveness of the Agency;

- A systematic framework for identifying the core services of the Agency and the levels of service that should be provided for those core services;
- A coordinated and comprehensive preventive maintenance program for the care of those assets assigned to the Agency;
- Cost effective service delivery by the Agency by injecting competition into service delivery, using activity-based costing to identify how much it costs to deliver services, installing accountability systems for managers and supervisors, and reengineering work processes;
- Creativity in identifying other sources of revenue that other cities use to support the maintenance, repair, and rehabilitation of the City's assets;
- Effective asset management systems to ensure that decisions regarding the condition and performance of those assets will be made with a long-term view of their preservation and renewal; and
- An organizational structure that enhances managerial accountability.

The key features of each of these seven initiatives are summarized in the following pages.

#### **(1) Management Accountability**

The driving force behind any high performing organization is clear management accountability and the management systems that enhance its effectiveness. The Agency has made efforts to establish management accountability and install management systems such as the Azteca Cityworks.

Overall, however, managers and supervisors have little information with which to make key service delivery and budgetary decisions. The Agency faces a number of challenges to use its resources more efficiently and effectively, and more importantly, to redirect resources and invest in maintenance and preservation of the City's assets. The management systems in the Agency need to be enhanced significantly to address these

challenges. To enhance the management systems, the Agency needs to take a number of actions. These actions are portrayed below.

- Clearly articulate the Agency's goals, objectives, performance measures and reporting systems for each unit within the Agency (i.e., sanitary sewer collection, street sweeping, park maintenance, etc.). The goals, objectives, performance measures and reporting systems should be utilized to establish a culture of accountability in the Agency.
- Develop a communication plan to enhance the relationships of the Agency with its employees, and the residents and businesses in Oakland.
- Install the Azteca Cityworks computerized maintenance management system in all field operations divisions of the Agency, including the Facilities Management Division.
- Develop a maintenance management system that leverages the Agency's investment in the Azteca Cityworks computerized maintenance management system.
- Develop formal work planning and scheduling systems in all of the field operations divisions of the Agency.
- Implement additional measures to enhance the management of sick leave.
- Implement additional measures to enhance the management of overtime.

The Agency should employ these management systems to make the Agency a place where performance is centered on goals, objectives, and performance measures that serve to drive its operations.

## **(2) Core Services**

The City of Oakland finds itself in a difficult situation. Investments are needed to repair and rehabilitate the City's infrastructure and to enhance essential services. Yet, because the City's financial condition is not strong, it lacks the resources needed to make these investments.

There are a few approaches that the City can utilize to extract itself from this situation.

- First, it can strengthen the efficiency and effectiveness of existing operations. While taking this step is important, the amount of resources that will be made available by improving efficiency alone cannot meet the investment needs of the City.
- The second alternative is to impose new fees or increase existing fees. This is also an important step, but it alone cannot meet the investment needs of the City.
- The third alternative is to scale back the range of services that the Agency provides and/or reduce the level of services provided.

Given the magnitude of investments needed, the City should utilize all of these alternatives, including making changes in the portfolio of the services provided by the Agency.

The Agency should utilize a systematic framework, included within this report, for deciding what service and what levels of service should be provided. In addition, the MCG has made a preliminary assessment of the range of services that should be scaled back or levels of service reduced. Examples of these services are portrayed below.

- The City should eliminate group relamping of streetlights, and replace streetlights based upon monthly inspections of streetlights on arterial streets and requests for services on other types of streets.
- The streetlight and the traffic signal maintenance and repair staff should not be assigned to the construction / installation of new streetlights and new traffic signals. This staff should be utilized for the preventive maintenance and repair of existing streetlights and traffic signals.
- The level of service provided for painting of interior and exterior walls of City buildings should be reduced to enable the reallocation of building maintenance staff resources to electrical and plumbing repair and maintenance.
- The levels of service for medians and mini-parks should be reduced.
- The level of service for painting of streetlights, traffic signal cabinets, traffic signal poles, etc. should be reduced.

- The level of service for vegetation control of vacant City lots and City rights-of-way should be reduced.
- The cleaning of the downtown area should be reallocated to the downtown business improvement district.
- The City's solid waste collection contractor should be responsible for cleaning and maintaining litter containers placed along the City's streets.

The hard truth is the City needs significant investment to repair and rehabilitate the City's infrastructure and to enhance core services. The most difficult decision that the City and the Agency will face is to determine where services in the Agency will be curtailed so that the core services and the repair and rehabilitation of the City's infrastructure can be adequately funded.

### **(3) Asset Management**

Asset management focuses on the facts about the City's infrastructure assets, their performance, their preservation, and their anticipated longevity. Effective asset management is important for a number of reasons including:

- The City's aging infrastructure;
- A projected growth in the City's population to 517,000 by the year 2030;<sup>1</sup>
- Insufficient funding for asset renewal and rehabilitation;
- The risks and liability posed by aging infrastructure; and
- The increasing challenge of maintaining the safety and serviceability of the assets entrusted to the Agency.

Effective asset management relies upon accurate asset information to facilitate decision-making regarding the condition and performance of those assets with a long-term view of their preservation and renewal.

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<sup>1</sup> Projections 2005 Forecasts for the San Francisco Bay Area to the Year 2030, Association of Bay Area Governments

Given the significant replacement cost of these assets, it is imperative that the Agency maximizes the useful life of the assets. The actions that should be taken by the Agency are presented below.

- Develop a long-term plan of implementation for the storm drainage master plan. The Agency does not have the funding to meet most of the needs identified in the master plan.
- Update the long-term plan for the sanitary sewer collection system. The City should be replacing or rehabilitating an average of 1% to 2% of its sanitary sewer mains each year. The City did not meet this benchmark in 2007-08 and given the imbalances in expenditures in the Sewer Service Fund, will be unable to meet this benchmark in the near term. The City should be spending approximately \$7.5 million annually for replacement and relining of its sanitary sewer mains.
- Develop a long-term rehabilitation and replacement plan for the street system. The City should be spending approximately \$30 million annually for the repair and replacement of the City's streets; it has historically been spending \$7.2 million annually. The Agency does not have the funding to adequately preventively maintain and repair its streets. The City has one of the lowest pavement condition ratings for street systems in the Bay Area.
- Prepare a five-year equipment replacement plan for the City's fleet for a review by the operating departments and the Budget Office. The City should increase its funding for the replacement of the equipment fleet by \$5.5 million annually. The Agency does not have the funding to meet these needs.
- Prepare a five-year replacement plan to address deferred replacement requirements of the City's buildings for a review by the operating departments and the Budget Office. The Agency has developed a list of deferred replacement requirements for the City's buildings that amounts to \$11.6 million. This list encompasses the City's libraries, recreation centers, fire stations, Hall of Justice, and pools. This list needs to be expanded to include the Civic Center. In 2007, the Agency conducted a condition assessment of 62 of the City's buildings that identified \$4.3 million in immediate needs. The City is suffering with service delivery problems resulting from deferred replacement such as raw sewage overflows in the Police Administration Building, inoperable fire detection equipment in fire stations, etc. The Agency does not have the funding to meet ongoing replacement requirements.
- Develop a long-term plan for the renewal and replacement of the traffic signal controllers and other aspects of traffic signals. The City should be spending



approximately \$500,000 annually for signal controller replacement. The Agency does not have the funding to meet ongoing replacement requirements.

- Develop a long-term plan for the renewal and replacement of the sign system. The *Citywide Sidewalk / ADA Inventory*, completed for the Agency in April 2007 indicated that almost 15% of the signs, or 6,682 signs, were rated “poor.” The Agency should develop and deploy a program to replace these signs.
- Meet with the staff of the Engineering and Construction Department to revise the sidewalk prioritization plans and develop a balanced approach toward improving streets and sidewalks that includes the deployment of the staff resources within the Streets and Sidewalks Section.
- The Agency should develop a five-year plan for the rehabilitation and renewal of the City’s park system. At present, the level of capital expenditures for renewal and replacement of the City’s parks represents 0.49% of the City’s 2007-12 capital improvement program. An inspection of a sample of the City’s parks by the MCG found much of the park assets had met or exceeded their useful life. The Agency does not have the funding to meet ongoing replacement requirements.

The Agency needs to address these challenges in the rehabilitation and replacement of the City’s assets. The Agency can address the challenge of asset renewal and rehabilitation, in part, by enhancing the effective deployment of its staff, and not relying solely on capital improvement program funding.

#### **(4) Preventive Maintenance of the Infrastructure**

Oakland taxpayers have a significant investment in streets, sidewalks, traffic signals, signs, parks, facilities, streetlights, wastewater sewer collection systems, and stormwater collection systems. Preserving these assets prolongs their useful life and reduces long-term maintenance and rehabilitation costs. This is the primary objective of preventive maintenance.

The Agency is not effective in preventively maintaining the City’s infrastructure. The Agency needs to pursue a coordinated and comprehensive effort to ensure the efficient

and effective preventive maintenance of those assets assigned to the Agency.

Examples of these efforts are portrayed below.

- The City should provide funding for block-by-block tree trimming on an annual basis for the urban forest.
- The Equipment Services Division should improve the preventive maintenance of the City's fleet in conformance with manufacturer recommendations.
- The Sanitary Sewer Section should increase the proportion of the sanitary sewer system receiving chemical root control from 1% to 5%, and increase the amount of high velocity hydroflusher cleaning of sanitary sewer mains.
- The Streets and Sidewalks Section should enhance the extent of pothole patching, base repair and skin patching, and expand the extent of base repair using its asphalt grinding equipment and truck tractor / semi-dump equipment.
- The Electrical Maintenance Section should develop and deploy a preventive maintenance program for the City's traffic signal system.
- The Electrical Maintenance Section should develop and deploy a preventive maintenance program for the City's traffic signs, pavement markings, and street striping.
- The levels of service delivered by Park Maintenance in the maintenance of the City's parks should be improved (excluding mini-parks and medians).
- The Facilities Management Division should develop and deploy strategies to preventively maintain all of the City's buildings.
- The responsibility for maintenance and repair of sidewalks should be assigned to property owners, as defined in the Streets and Highways Code of the State of California.

Preventive maintenance improves an asset's operating efficiency, prevents premature replacement, and avoids interruptions in service for residents. Preventive maintenance reduces long-term costs by maximizing the operating capacities of an asset, minimizing downtime, and avoiding breakdowns that would otherwise lead to higher repair costs later.

The effective preventive maintenance of these assets must be an essential goal of the Agency, and one that is utilized to judge the effectiveness of the Agency's management.

**(5) Cost Effective Service Delivery**

The Agency faces a number of challenges including fiscal limitations and aging infrastructure. The effective response of the Agency to these challenges requires that the Agency transform the way it does its business by injecting competition into service delivery; using activity-based costing to identify how much it costs to deliver services; installing accountability systems for managers and supervisors; and reengineering work processes.

The Agency should reduce its costs and increase its productivity, performance, and service levels by redesigning and reengineering the way services are delivered. This alteration includes a multitude of steps including such examples as the following:

- Reducing staffing in selected areas as recommended within the report;
- Changing the mix of talents in the delivery of services to obtain higher levels of skills necessary to maintain the City's assets, without increasing the number of authorized positions;
- Enhancing the quality and the efficiency of the maintenance of parks and landscaped areas;
- Enhancing the level of service provided to residents and businesses by enhancing the efficient deployment of services in such areas as street sweeping and reducing crew sizes in areas such as tree maintenance, sanitary sewer maintenance, street and sidewalk maintenance, etc;
- Eliminating underutilized City vehicles; and
- Eliminating vehicle allowances for City employees designated as Category III and Category IV in the auto allowance policy.

The Agency should take steps to assure that it efficiently utilizes existing resources.

**(6) Financial Management**

The Agency has a fiscal year 2008-09 budget of \$118,701,366 for all funds. The general-purpose fund provides only \$2,427,861 or 2% of the operating funds for the Agency. All other funding for the Agency comes from other funds such as the Recycling Fund, Comprehensive Clean-up, State Gas Tax, Landscape and Lighting Assessment District, Sewer Service, Equipment, City Facilities, and other funds. The City's General Fund contribution is less than that of other public works departments in similar cities. In Long Beach, for example, the General Fund provides 17% of the operating funds for the Public Works Department. In Anaheim, the General Fund provides 19% of the operating funds of the Public Works Department. In Fresno, the General Fund provides 26% of the operating funds of the Public Works Department. In Sacramento, the General Fund provides 22% of the operating funds of the Transportation Department (Sacramento does not have a Public Works Department). In Santa Ana, the General Fund provides 5% of the operating funds of the Public Works Department (this lower proportion of General Fund contribution in Santa Ana results from inclusion of a water utility within the Department that significantly increases departmental expenditures and reduces the proportion of General Fund expenditures).

In comparison, the Agency receives little in the way of revenue from the City's General Fund. As a consequence, the Agency must be creative in identifying other sources of revenue that other cities are utilizing to support the maintenance, repair, and rehabilitation of the City's infrastructure.

Alternative sources of revenue recommended by the MCG include the following:

- The City should adopt a construction road impact fee;

- The City should adopt impact fees for sanitary sewers, stormwater sewers, and parks, and waive or reduce these fees for affordable housing;
- The Redevelopment Agency should provide funding required for street, sidewalk, and stormwater capital projects in the redevelopment project areas;
- The Agency should seek sponsors / partnerships for the rehabilitation of its parks and landscaped areas; and
- The financial resources of the sanitary sewer fund should be appropriately used for the maintenance, repair, and rehabilitation of the City's wastewater collection system.
- The City should seek voter approval for a special tax solely to provide sufficient funding for the direct cost of acquisition and maintenance of improvements related to parks, landscaping, and street trees to supplement the existing annual revenue generated by the Citywide Landscape and Lighting Assessment District.
- The City should seek voter approval for a tax override to enable sustainable maintenance of parks, street trees, and parks trees.
- The City should address the use of the Sewer Service Fund as a source for operating expenditures by Engineering Design and Construction Department / CEDA that exceeds immediate requirements and immediate necessity.
- The City should address the imbalances in the Equipment fund and the Facilities fund in 2009-10.

The City and the Agency have no easy choices remaining. Given the magnitude of the financial challenges, the City and the Agency must develop additional revenue resources to provide services and preserve assets.

#### **(7) Organizational Structure**

The Agency's structure, in some of its aspects, impedes the accountability of management and the delivery of core services. Incremental changes to the structure of the Agency without an overall strategy can be detrimental to the organization's overall performance.

The organizational structure of the Agency should be modified to enhance accountability. The modifications are presented below.

- The responsibility for managing all of the City's buildings should be consolidated with the Facilities Manager to eliminate the fragmentation of this service between the Parks and Building Division and the Facilities Services Division.
- The responsibility for managing the urban forest, parks, medians, and vegetation management should be consolidated with a Parks Manager to eliminate fragmentation of these services between the Keep Oakland Clean and Beautiful Division, the Infrastructure Maintenance Division, and the Parks and Buildings Division.
- The responsibility for management of streets and electrical services should be consolidated with a Public Works Operations Manager in the Electrical Services and Traffic Maintenance Division to balance spans of control between two Public Works Operations Managers in the Infrastructure and Operations Department.
- The responsibility for electrical engineering and for architectural services should be transferred to the Engineering and Construction Department from the Electrical Services and Traffic Maintenance Division and the Facilities Services Division in the Agency.
- The Engineering and Construction Department should be transferred from the Community and Economic Development Agency to the Agency.
- The responsibility for sports field preparation and maintenance should be transferred from the Office of Parks and Recreation to the Parks and Building Division of the Agency. This should include the staff and LLAD funding allocated for this purpose.
- The responsibility for custodial maintenance of stand alone public restrooms located in the City's parks should be transferred from the Facilities Services Division to the Parks and Buildings Division.

While poor organizational structure will not prevent the Agency from achieving its mission, the existing plan of organization hinders its ability to accomplish its goals.

\* \* \* \* \*

So much change is needed in so many areas that the Agency's managers could easily become overwhelmed. The Agency faces the challenge of fundamentally reshaping how

it manages itself, strengthening service delivery, and retooling its workforce while at the same time continuing to manage the day-to-day operations of the Agency. The only way to face such a challenge is to recognize that the journey the Agency faces will be long and sometimes difficult, that while progress should be steady, it will not be quick, and that the success of the initial steps of this journey will likely determine whether the overall transformation of the Agency will succeed. While the report contains more than 280 recommendations, some of the recommendations can be addressed now, and some are dependent upon funding, technology, or staffing. Initially, the Agency should first develop a plan of implementation for these recommendations.

**Recommendation #1: The Agency should develop a plan of implementation for the recommendations contained in this report. This should include an agreed upon timetable and work program, cost estimates and methods of funding, and approval of the plan of implementation by the City Administrator's Office, the Mayor, and the City Council.**

## **6. SUMMARY OF RECOMMENDATIONS**

The MCG has prepared a summary of the recommendations contained in the attached report. This summary is presented in the table on the following page.

## SUMMARY OF RECOMMENDATIONS

Recommendation #	Page Number	Recommendations	Annual Cost Savings	Annual Cost Increase	Annual Revenue Increase
1	22	The Agency should develop a plan of implementation for the recommendations contained in this report. This should include an agreed upon timetable and work program, cost estimates and methods of funding, and approval of the plan of implementation by the City Administrator's Office, the Mayor, and the City Council.	\$0	\$0	\$0
<b>Chapter 2: Management Accountability</b>					
2	61	The Agency should conduct a SWOT analysis.			
3	62	The Agency should revise its mission statement.	\$0	\$0	\$0
4	62	The Agency should revise its vision statement.	\$0	\$0	\$0
5	63	The vision statement should be published to the Agency's web page.			
6	64	The Agency should enhance its values statement.	\$0	\$0	\$0
7	65	The Agency should develop goal statements for each of its sections.	\$0	\$0	\$0
8	67	The Agency should develop objectives for each section.	\$0	\$0	\$0
9	69	The Agency should expand its array of performance measures to include inputs, outputs, efficiency, service quality, and outcomes.	\$0	\$0	\$0
10	70	The Agency should utilize Azteca Cityworks to facilitate the development of a broader array of performance measures and the collection of data regarding the achievement of those performance measures.	\$0	\$0	\$0
11	72	The Agency should develop a communication plan to guide communication with the media, residents, businesses, and Agency employees.	\$0	\$0	\$0



Recommendation #	Page Number	Recommendations	Annual Cost Savings	Annual Cost Increase	Annual Revenue Increase
12	72	The Agency should improve the depth and breadth of communication with media, residents, businesses, and Agency employees.	\$0	\$0	\$0
13	74	The Administrative Services Department should work with the management and supervisory team of the Agency to develop and deploy Agency-wide performance measurement systems and management reports.	\$0	\$0	\$0
14	81	The Administrative Services Department should develop a quarterly report for sick leave for the Agency that reports sick leave usage by employee by section for the current year-to-date versus last year-to-date, and includes the lost-time rate, frequency rate,.	\$0	\$0	\$0
15	81	The Administrative Services Department should analyze the sick leave usage within the Agency each quarter to identify individual employees who appear to have leave problems that need to be addressed.	\$0	\$0	\$0
16	82	The Human Resources Section of the Agency should develop a training course regarding the administration of the City's Attendance Management Policy.	\$0	\$0	\$0
17	82	All managers and supervisors in the Agency should be required to attend the training course regarding administration of the City's Attendance Management Policy.	\$0	\$0	\$0
18	83	The Human Resources Section of the Agency should develop an Attendance Management Guide.	\$0	\$0	\$0
19	84	The Human Resources Section of the Agency should develop a policy that clarifies the responsibility of managers and supervisors of the Agency for the implementation of the City's Attendance Management policy.	\$0	\$0	\$0

Recommendation #	Page Number	Recommendations	Annual Cost Savings	Annual Cost Increase	Annual Revenue Increase
20	85	Not less than once a year, the Administrative Services Department should audit the effectiveness with which the City's Attendance Management policy is being implemented within the Agency.	\$0	\$0	\$0
21	85	The results of these audits by the Administrative Services Department should be shared with the appropriate supervisors and managers and plans for corrective action developed as necessary.	\$0	\$0	\$0
22	85	The City should update its attendance policy.	\$0	\$0	\$0
23	88	The Agency should develop an overtime policy and clearly spell out its choices in use of regular staff hours, alternative staffing approaches and overtime and compensatory time.	\$0	\$0	\$0
24	88	The Agency should develop a clearly described policy regarding the maximum use and accrual of overtime in a pay period.	\$0	\$0	\$0
25	89	The Agency should adopt a comprehensive policy governing oversight of overtime.	\$0	\$0	\$0
26	89	Training should be provided to employees in supervisory and managerial positions regarding the expectations placed on them to manage overtime / compensatory time. Appropriate resources such as reports and labor contracts should be provided to supervisors to assist them in this obligation.	\$0	\$0	\$0
27	90	The Administrative Services Department should develop and distribute monthly, quarterly and annual reports to document and monitor overtime and compensatory time in detail.	\$0	\$0	\$0
28	94	Each Section in the Agency should develop a comprehensive, written policies and procedures manual.	\$0	\$0	\$0

Recommendation #	Page Number	Recommendations	Annual Cost Savings	Annual Cost Increase	Annual Revenue Increase
29	94	Each Section Manager should be assigned responsibility for the development of a comprehensive, written policies and procedures manual. The policies and procedures manual should be published to the Agency's Intranet.	\$0	\$0	\$0
30	98	The management of the Agency should effectively utilize the data generated by the deployment of global positioning systems to evaluate productivity, safety, and asset protection.	\$0	\$0	\$0
31	98	The Administrative Services Department should work with managers and supervisors in those sections in which global positioning systems are deployed to develop management reporting systems utilizing the data generated by the global positioning systems.	\$0	\$0	\$0
32	98	The Administrative Services Department should periodically monitor the effective deployment of these systems and the effective use of these management reports by these managers and supervisors.	\$0	\$0	\$0
33	100	The Agency should conduct a systematic evaluation of its services to identify its core services.	\$0	\$0	\$0
<b>Chapter 3: Asset Management</b>					
34	108	The Agency should develop an asset management policy and procedure for the consideration of the mayor and the City Council.	\$0	\$0	\$0
35	110	In the development of an asset management policy and procedure, the Agency should clarify accountability for the management of each of the assets under its stewardship.	\$0	\$0	\$0

Recommendation #	Page Number	Recommendations	Annual Cost Savings	Annual Cost Increase	Annual Revenue Increase
36	110	The Agency should establish an Agency asset management council to facilitate a coordinated Agency asset management approach.	\$0	\$0	\$0
37	110	The Agency should designate the managers within the Agency that are accountable for managing each specific type of asset assigned to the Agency.	\$0	\$0	\$0
38	110	The City's Budget Office should modify the designated fund managers to assign responsibility for fund management to those managers responsible for managing the asset.	\$0	\$0	\$0
39	110	The City's Budget Office should modify the designated fund manager for the Sewer Service Fund from the Principal Civil Engineer in Engineering Design and Right-of-Way Management / CEDA to the Public Works Operations Manager in the Infrastructure Maintenance Division of the Agency.	\$0	\$0	\$0
40	112	The Agency should collect asset inventory data for each of the assets it is responsible for maintaining and repairing.	\$0	\$0	\$0
41	114	The Agency should update asset inventory information on an ongoing basis.	\$0	\$0	\$0
42	114	The responsibility for updating of the asset inventory information should be assigned to the Administrative Services Department. The ability of the department to fulfill this responsibility is dependent upon information technology staffing recommendations contained in Chapter 6 of this report.	\$0	\$0	\$0
43	114	The Agency should conduct periodic asset condition assessments of the assets under its stewardship.	\$0	\$0	\$0
44	118	The Infrastructure and Operations Department should prepare a long-term plan for the implementation of the Storm Drainage Master Plan.	\$0	\$0	\$0

Recommendation #	Page Number	Recommendations	Annual Cost Savings	Annual Cost Increase	Annual Revenue Increase
45	118	The Infrastructure and Operations Department should develop a work plan to address the small to medium sized projects within the high priority capital plan of the Storm Drainage Master Plan utilizing the staff of the Drainage Section.	\$0	\$0	\$0
46	119	The Infrastructure and Operations Department should update the master plan for the sanitary sewer collection system.	\$0	\$250,000 (one-time)	\$0
47	125	The Infrastructure and Operations Department should prepare a long-term plan for the repair and rehabilitation of the City's streets including alternative sources of funding and strategies that would enhance the capacity of the staff of the Streets and Sidewalks Section to repair and rehabilitate streets.	\$0	\$0	\$0
48	125	The City should increase the annual capital outlay funding for the slurry seal of the City's streets to fund not less than \$8.75 million annually.	\$0	\$8,750,000	\$0
49	128	The Equipment Services Division should prepare a five-year equipment replacement plan for the review of the operating departments and the Budget Office.	\$0	\$0	\$0
50	128	The Agency should identify alternative sources of funding to meet equipment replacement needs.	\$0	\$0	\$0
51	128	The City should increase its funding for the replacement of the equipment fleet by \$5.5 million annually.	\$0	\$5,500,000	\$0
52	129	The Agency should participate with the CEDA in the development of the urban forest master plan and be assigned responsibility for its implementation.	\$0	\$0	\$0
53	133	The Infrastructure and Operations Department should prepare a long-term plan for the renewal and replacement of traffic signal systems.	\$0	\$0	\$0

Recommendation #	Page Number	Recommendations	Annual Cost Savings	Annual Cost Increase	Annual Revenue Increase
54	133	The City should replace traffic signal controllers at approximately twenty (20)-year intervals.	\$0	\$0	\$0
55	133	The City should increase the annual capital outlay funding for replacement of signal controllers.	\$0	\$500,000	\$0
56	136	The Infrastructure and Operations Department should prepare a long-term plan for the replacement of the sign system.	\$0	\$0	\$0
57	136	The Infrastructure and Operations Department should develop a work plan to replace those signs that were identified as being in poor condition by the <i>Citywide Sidewalk / ADA Inventory</i> utilizing the staff of the Traffic Maintenance Section.	\$0	\$0	\$0
58	139	The Agency should meet with the staff of the Engineering and Construction Department to revise the sidewalk prioritization plan and develop a balanced approach that includes the deployment of the staff resources within the Streets and Sidewalks Section.	\$0	\$0	\$0
59	140	The Facilities and Environment Department should develop a five-year plan for the renewal and rehabilitation of the City's parks.	\$0	\$0	\$0
60	142	The Agency should develop a plan for addressing these deferred replacement requirements identified in the facility condition assessment and by the Agency's Building Services Manager in consultation with departments and the City's Budget Office.	\$0	\$3,200,000	\$0
61	142	The Agency should review the replacement needs identified in the facility condition assessment and develop a plan of implementation for its own staff to address those needs that are within the capacity of its own staff.	\$0	\$0	\$0
62	149	The Agency should initially set an objective of eliminating two hundred ten (210) vehicles from	\$400,000	\$0	\$0

Recommendation #	Page Number	Recommendations	Annual Cost Savings	Annual Cost Increase	Annual Revenue Increase
		the City's fleet.			
63	152	Eliminate the auto allowance for employees designated as Category III and IV in the auto allowance policy.	\$532,000	\$0	\$0
64	152	Significantly reduce the number of employees in Category II in the auto allowance policy who receive auto allowance.	\$0	\$0	\$0
65	152	The auto allowance policy should be amended to require that the City's Budget Office review proposals for employees to receive an auto allowance before consideration by the City Administrator's Office.	\$0	\$0	\$0
66	153	Establish a heavy equipment "pool".	\$0	\$0	\$0
67	153	The Equipment Services Division should manage the "pool" of heavy equipment.	\$0	\$0	\$0
		<b>Chapter 4 - Maintenance Management</b>			
68	177	The Agency should develop a complete inventory of the work activities performed by the Agency in the maintenance and repair of infrastructure assets.	\$0	\$0	\$0
69	178	The Agency should define the levels of service that the Agency can provide in the maintenance and repair of assets entrusted to the Agency.	\$0	\$0	\$0
70	179	The Agency should develop performance standards for each work activity.	\$0	\$0	\$0
71	182	The Agency should utilize Azteca Cityworks to develop an annual work program and calendar.	\$0	\$0	\$0
72	184	The Agency should utilize Azteca Cityworks to develop and deploy formal work planning and scheduling systems in each Section.	\$0	\$0	\$0
73	185	The Agency should utilize Azteca Cityworks to generate a monthly performance report comparing planned versus actual performance and costs.	\$0	\$0	\$0

Recommendation #	Page Number	Recommendations	Annual Cost Savings	Annual Cost Increase	Annual Revenue Increase
74	191	The Agency should develop a formal written policy and procedure for the updating of the sanitary sewer and stormwater maps by field crews. The policy and procedure should require field crews to notify Agency GIS staff regarding discrepancies in infrastructure for updating of the appropriate data layers.	\$0	\$0	\$0
75	191	The Agency should develop computer/hydraulic models for the City's sanitary sewer and stormwater networks.	\$0	\$0	\$0
76	192	Azteca Cityworks should be deployed in the Facilities Management Division.		\$340,000 (One-Time), \$33,000 ongoing	
77	194	The Infrastructure and Operations Department should prepare a policy study for the consideration of the City Council regarding the level of service for tree trimming.	\$0	\$0	\$0
78	196	The Infrastructure and Operations Department should prepare a tree planting plan to address the vacant tree wells identified in the <i>Citywide Sidewalk / ADA Inventory</i> , a tree planting policy, tree planting specifications, an objective for canopy coverage, and policies for species and age diversity of the urban forest.	\$0	\$0	\$0
79	197	The Infrastructure and Operations Department should acquire CITYgreen software from American Forests, and work with the Information Technology Department to deploy the software, integrate satellite imagery, and document the tree canopy coverage for the City and each Council District.	\$0	\$900 (One-Time)	\$0
80	198	Reduce the crew size utilized for responding to tree maintenance service requests to two positions.	\$0	\$0	\$0



Recommendation #	Page Number	Recommendations	Annual Cost Savings	Annual Cost Increase	Annual Revenue Increase
81	201	The City should provide contractual funding on an annual basis for the proactive tree trimming of 7,350 park and street trees annually.	\$0	\$440,000	\$0
82	201	The Tree Maintenance Section should enhance its working relationship with non-profit tree conservation organizations and leverage the ability of the non-profit tree organizations to obtain grant funding for planting of street trees.	\$0	\$0	\$0
83	201	The Tree Maintenance Section should outsource the planting of street trees to non-profit tree conservation organizations.	\$0	\$0	\$0
84	205	The Equipment Services Division should expand the use of a swing shift for the automotive shop and the heavy equipment shop.	\$0	\$0	\$0
85	205	Establish a classification of Lead Heavy Equipment Mechanic and Lead Automotive Mechanic. Reclassify one Heavy Equipment Mechanic and two Automotive Mechanic positions to lead mechanic. Promote three mechanics to these lead mechanic positions.	\$0	\$43,000	\$0
86	205	Assign two Equipment Parts Specialists and six to eight Mechanics to the swing shift at the Automotive Shop and the Heavy Equipment Shop.	\$0	\$50,000	\$0
87	206	Fleet Focus FA should be utilized to e-mail operating departments when their vehicles are due for preventive maintenance and to enable the Equipment Services Division and Equipment Supervisors and Heavy Equipment Supervisors to identify equipment overdue for preventive maintenance.	\$0	\$0	\$0
88	207	The Equipment Services Division should work with the departments to develop a weekly preventive maintenance schedule that schedules preventive maintenance evenly across the month and assigns each vehicle to a	\$0	\$0	\$0

Recommendation #	Page Number	Recommendations	Annual Cost Savings	Annual Cost Increase	Annual Revenue Increase
		particular week of the month.			
89	207	Specify the weekly schedule for each piece of equipment in Fleet Focus FA within the table codes.	\$0	\$0	\$0
90	208	Equipment Supervisors and Heavy Equipment Supervisors should be held accountable for implementation and supervision of a preventive maintenance scheduling system.	\$0	\$0	\$0
91	209	The Equipment Services Division should implement a "quick lube" concept only for light and medium equipment, excluding emergency response vehicles.	\$0	\$0	\$0
92	213	The Equipment Services Division should set an objective of an average of 125 working hours charged to repair orders per month per technician.	\$0	\$0	\$0
93	213	The Fleet Supervisors should review the monthly direct-billed hours report to ensure accountability for all employees, and report actual adherence to this objective to the Equipment Services Superintendent and Equipment Services Manager on a monthly basis.	\$0	\$0	\$0
94	214	The Equipment Services Division should develop and implement a Quality Control policy.	\$0	\$0	\$0
95	216	The role of Equipment Services Division staff assigned to the Hall of Justice should be modified to perform a higher proportion of maintenance and repair at the Hall of Justice, reduce the need to transport these vehicles to 7101 Edgewater Drive for these services, and reduce downtime.	\$0	\$0	\$0

Recommendation #	Page Number	Recommendations	Annual Cost Savings	Annual Cost Increase	Annual Revenue Increase
96	216	The staff of the Police Department should check fluid levels in Police Department vehicles themselves as part of their pre-trip inspection of the vehicle they have been assigned.	\$0	\$0	\$0
97	216	Establish two Lead Automotive Mechanics and promote two mechanics to these positions. Assign these two Lead Automotive Mechanics to the Division's facility at the Hall of Justice.	\$0	\$24,000	\$0
98	217	Construct an equipment maintenance and repair facility at the Hall of Justice.	\$0	\$400,000 (One-Time)	\$0
99	217	The Equipment Services Division staff assigned to the Hall of Justice should not work day, swing and night shifts, seven days per week. These staff should work a day and swing shift Monday through Friday.	\$0	\$0	\$0
100	217	The Equipment Supervisor assigned to the Hall of Justice should be shifted to the 7101 Edgewater Drive facility to reduce the spans of control for the other two Equipment Supervisors assigned to that facility.	\$0	\$0	\$0
101	220	The Equipment Services Division should initiate training and training plans to increase the number of technicians with EVT and ASE certification.	\$0	\$0	\$0
102	220	The proposed classification of Lead Mechanic should require ASE certification (or obtaining the certification within two years of appointment). The supervisory positions within the Equipment Services Division should require ASE certification (or obtaining the certification within two years of appointment).	\$0	\$0	\$0
103	220	The City should consider providing financial incentives for EVT and ASE certification.	\$0	\$0	\$0

Recommendation #	Page Number	Recommendations	Annual Cost Savings	Annual Cost Increase	Annual Revenue Increase
104	221	The Equipment Services Division should explore the cost ramifications of participating in the fuel cooperative purchase with the County of Santa Clara and the cities of San Jose, Santa Cruz and Sunnyvale to determine whether it would reduce their unit prices for fuel.	\$185,000	\$0	\$0
105	222	The Agency should establish a Fleet Advisory Board to serve as a customer council for the Equipment Services Division.	\$0	\$0	\$0
106	223	The Equipment Services Division should develop and adopt service level agreements with the major operating departments that it serves.	\$0	\$0	\$0
107	224	The Equipment Services Division should warranty its maintenance and repair work.	\$0	\$0	\$0
108	226	The Equipment Services Division should provide point of sale receipts for each transaction. The point of sale receipts should be summarized in monthly reports provided to each department.	\$0	\$0	\$0
109	226	The Equipment Services Manager should meet monthly with each department to review the monthly reports and discuss the basis and nature of the costs.	\$0	\$0	\$0
110	226	Major Customers should be provided with access to Fleet Focus F / A.	\$0	\$0	\$0
111	228	The Sewer Maintenance Leader classification description should be modified to require a Grade II Collection System Maintenance Certificate issued by the California Water Environment Association Technical Certification Program.	\$0	\$0	\$0
112	230	The crew size used for service calls and power rodding should be reduced to two persons, and the crew size used for construction and repair should be reduced to four persons supplemented by a backhoe operator when	\$0	\$0	\$0

Recommendation #	Page Number	Recommendations	Annual Cost Savings	Annual Cost Increase	Annual Revenue Increase
		required.			
113	230	The Sanitary Sewer Section should not conduct sewer tap inspections; the construction inspectors in the Department of Engineering and Construction should conduct these inspections.	\$0	\$0	\$0
114	235	The Sanitary Sewer Section should increase the proportion of the sanitary sewer system receiving chemical root control from 1% to 5 % annually.	\$0	\$220,000	\$0
115	235	The Sanitary Sewer Section should adopt a process for chemical root control that includes power rodding the pipes before the chemical root control, power rodding the pipes 6 months after the chemical root control, and power rodding the pipes again 18 months after the chemical root control.	\$0	\$0	\$0
116	238	The Sanitary Sewer Section should require that EBMUD inspect food service establishments on an annual basis, and conduct follow-up inspections of those establishments with deficiencies.	\$0	\$0	\$0
117	238	The Sanitary Sewer Section should require that EBMUD conduct inspections of food service establishments within 1,000 feet of a sanitary sewer overflows when fats, oils, or grease have been determined to be the cause of the sanitary sewer overflow.	\$0	\$0	\$0
118	238	The Sanitary Sewer Section should actively monitor the effectiveness of the EBMUD fats, oils, and grease program.	\$0	\$0	\$0
119	238	The Sanitary Sewer Section should audit the enforcement approaches utilized by EBMUD.	\$0	\$0	\$0

Recommendation #	Page Number	Recommendations	Annual Cost Savings	Annual Cost Increase	Annual Revenue Increase
120	238	The Sanitary Sewer Section should request that EBMUD provide information regarding the food service establishments that it has required to install grease removal equipment in the three years from 2005 through 2007 (excluding new construction).	\$0	\$0	\$0
121	238	The Sanitary Sewer Section should compile a list of those food service establishments that are most frequently causing or contributing to sanitary sewer overflows or blockages and request additional monitoring by EBMUD.	\$0	\$0	\$0
122	238	The Sanitary Sewer Section should increase the high velocity cleaning frequency of "hot spots."	\$0	\$0	\$0
123	238	When a sanitary sewer overflow is caused or contributed to by fats, oils, or grease, the Sanitary Sewer Section should add that pipe reach to its "hot spot" list. These "hot spots" should be cleaned on a one to a three-month schedule depending on the severity of the problem.	\$0	\$0	\$0
124	238	The Sanitary Sewer Section should maintain an inventory in a Microsoft Access database of these "hot spots" that is linked to Azteca Cityworks.	\$0	\$0	\$0
125	239	The Sanitary Sewer Section should enhance the level of preventive maintenance for the sanitary sewer collection system.	\$0	\$0	\$0
126	242	The City's sanitary sewer collection system should be divided into zones with a specific hydroflusher assigned to each zone.	\$0	\$0	\$0
127	242	High velocity hydroflusher crews should be assigned to the preventive maintenance cleaning of all of the City's sanitary sewers in each zone.	\$0	\$0	\$0
128	243	The Equipment Services Division should replace four (4) sewer flusher combo's (#4169, #4165, #4796, and #4797) and one of the CCTV	\$0	\$966,000 (One-Time)	\$0

Recommendation #	Page Number	Recommendations	Annual Cost Savings	Annual Cost Increase	Annual Revenue Increase
		trucks (#4914) assigned to the Sanitary Sewer Section.			
129	243	The Equipment Services Division should replace two power rodders with “hands free” rodders that perform the function of cleaning the main with a pre-set pressure with no buttons to push or levers to move to continue the cleaning once initiated.	\$0	\$120,000 (One-Time)	\$0
130	243	The Sanitary Sewer Section should acquire three (3) additional sewer flusher combo’s.	\$0	\$600,000 (One-Time)	\$0
131	243	The sanitary Sewer Section should acquire a self-propelled easement power rodder.	\$0	\$25,000 (One-Time)	\$0
132	244	The Sanitary Sewer Section should develop and deploy a quality control program for the cleaning of sewer mains.	\$0	\$0	\$0
133	245	The crew size used for cleaning of watercourses should be reduced to three persons supplemented by the use of inmate labor.	\$0	\$0	\$0
134	246	The managers and supervisors of the Drainage Section should manage the work output of the staff to bring the productivity levels within the appropriate range of 20 drain inlets per crew day.	\$0	\$0	\$0
135	247	The crew size used for pothole patching should be reduced to two persons, the crew size used for major paving should be reduced to five persons for grinding and seven persons for asphalt overlay, the crew size used for concrete pouring should be reduced to three-persons, the crew size used for constructing forms for concrete sidewalks should be reduced to two-persons, and the crew size used for sidewalk grinding should be reduced to one-person.	\$0	\$0	\$0
136	250	The Agency should “pilot” test the use of spray injection pothole patching.	\$0	\$150,000	\$0

Recommendation #	Page Number	Recommendations	Annual Cost Savings	Annual Cost Increase	Annual Revenue Increase
137	250	If the “pilot” test is successful, the Agency should utilize spray injection methodology for patching potholes, and acquire a spray injection pothole patching truck.	\$0	\$0	\$0
138	254	The Agency should enhance the effective deployment of the Major Paving Crew for street overlay and asphalt grinding, and not divert the staff resources to other work activities.	\$0	\$0	\$0
139	255	The City should initially contract for hauling of asphalt grinding and delivery of hot mix asphalt for street overlays, but should acquire two 15-yard transfer dump bodies and trailers in the next three fiscal years.	\$0	\$115,000	\$0
140	255	The Streets and Sidewalks Section should acquire two 15-yard transfer dump bodies and trailers to haul asphalt grindings and not use three-axle dump trucks.	\$0	\$440,000 (One-Time)	\$0
141	255	Transportation Services / Engineering and Construction Department / CEDA should be responsible for speed bumps. These projects should be handled as a capital project and accomplished contractually.	\$0	\$0	\$0
142	255	The asphalt budget should be increased by \$400,000 annually to enable the major paving crew to pave streets for eight months each year. The total asphalt budget for the paving crew should be \$800,000 annually.	\$0	\$400,000	\$0
143	257	The Electrical Services and Traffic Maintenance Division should develop and install a preventive maintenance program for the City’s signalized intersections. The traffic signals should be preventively maintained not less than once annually.	\$0	\$0	\$0
144	260	The Traffic Maintenance Section should develop and install a preventive maintenance program.	\$0	\$0	\$0
145	260	The Traffic Maintenance Section should plan and schedule the work of the Sign Maintenance			\$0



Recommendation #	Page Number	Recommendations	Annual Cost Savings	Annual Cost Increase	Annual Revenue Increase
		Workers and Traffic Painters.			
146	267	The levels of service delivered by the Park Maintenance Section should be adjusted to provide effective turf management, tree / landscape management, irrigation management, and playground management.	\$0	\$0	\$0
147	267	Additional equipment should be acquired to enhance the level of service for mowing of turf.		\$250,000 (One-Time) \$15,000 (on-going)	
148	269	The Park Maintenance Section should prepare route sheets for each maintenance route defining the routine maintenance work performed by the staff assigned to each route.	\$0	\$0	\$0
149	273	The Park Maintenance Section should develop formal, written service level standards for each of the different types of parks maintained by the Section.	\$0	\$0	\$0
150	274	The Park Maintenance Section should develop quality standards for the maintenance of the parks.	\$0	\$0	\$0
151	275	Park Supervisors should conduct formal written condition assessments of all park and landscaped areas on a six-month basis.	\$0	\$0	\$0
152	275	The Park Maintenance Section should enhance its working relationship with volunteers, and expand the use of and the involvement of volunteers in the maintenance and repair of the City's parks.	\$0	\$0	\$0
153	276	The Park Maintenance Section should develop a horticultural training program for Gardener II's and Gardner Crew Leaders.	\$0	\$0	\$0
154	276	The Park Maintenance Section should work with the Peralta Community College to develop the horticultural training program and provide	\$0	\$0	\$0

Recommendation #	Page Number	Recommendations	Annual Cost Savings	Annual Cost Increase	Annual Revenue Increase
		ongoing instruction to the Section's employees.			
155	277	The Park Maintenance Section should develop a written landscape standards manual for the use and application in the City's park and landscape capital projects and developer-financed park and landscape projects. This should be accomplished with the cooperation of the Engineering Design and Construction Department and with Building Services / CEDA.	\$0	\$0	\$0
156	280	The global positioning system units in street sweepers should be repaired so that the units can report broom down.	\$0	\$0	\$0
157	280	Each street sweeper operator should be required to report the total hours worked, the total hours parked, the total hours spent driving, the total hours spent street sweeping, and the total curb miles swept.	\$0	\$0	\$0
158	280	The Keep Oakland Clean and Beautiful Division should set an objective for each street sweeper operator to sweep 32 curb miles per full seven and one-half hour shift.	\$0	\$0	\$0
159	280	The street sweeper routes should be developed into a GIS layer, and each route adjusted so that the curb miles in each route represents a full shift's work.	\$0	\$0	\$0
160	281	The Keep Oakland Clean and Beautiful Division should develop a street sweeping cleanliness scorecard system.	\$0	\$0	\$0
161	281	The Keep Oakland Clean and Beautiful Division should conduct a rating of street cleanliness.	\$0	\$0	\$0
162	283	When the existing mechanical broom sweepers reach the end of their useful life, the Keep Oakland Clean and Beautiful Division should replace them with regenerative air sweepers.	\$0	\$0	\$0

Recommendation #	Page Number	Recommendations	Annual Cost Savings	Annual Cost Increase	Annual Revenue Increase
163	287	The Keep Oakland Clean and Beautiful Division should acquire twenty (20) additional illegal dumping surveillance cameras.	\$0	\$0	\$0
164	288	The Keep Oakland Clean and Beautiful Division should acquire Internet-based (Wifi) HDTV systems or wireless IP cameras in a fixed wireless network.	\$0	\$0	\$0
165	288	The Keep Oakland Clean and Beautiful Division should engage the neighborhood associations in Oakland to assist in the clean-up and prevention of illegal dumping.	\$0	\$0	\$0
166	289	The Keep Oakland Clean and Beautiful Division should "pilot test" the use of a surveillance camera for the detection and apprehension of graffiti taggers, in cooperation with the police department.	\$0	\$0	\$0
167	290	The Keep Oakland Clean and Beautiful Division should develop and deploy alternatives to the use of labor-intensive hand tools to control weeds and the control of weeds and vegetation on a complaint basis. This plan should include the use of pre-emergent and post-emergent herbicides to control the growth of weeds in medians, sidewalks / gutters, alleys, and the edges of streets / gutters.	\$0	\$0	\$0
168	291	The process for abatement of graffiti on private property should be modified to place the burden for removal of graffiti on the private property owner.	\$0	\$0	\$0
169	294	The Facilities Management Division should develop and install a preventive maintenance program for all of the City's buildings and building components.	\$0	\$0	\$0
170	295	The Facilities Management Division should contract, initially, for the employment of this predictive testing equipment on an annual basis. In the mid-term, Facilities Maintenance should	\$0	\$15,000	\$0

Recommendation #	Page Number	Recommendations	Annual Cost Savings	Annual Cost Increase	Annual Revenue Increase
		selectively acquire this equipment and train its staff in its use.			
171	297	The Engineering and Construction Department and the Facilities Management Division should develop and implement a facility commissioning policy.	\$0	\$0	\$0
172	298	The Engineering and Construction Department and the Facilities Management Division should develop an equipment standardization policy.	\$0	\$0	\$0
173	298	The Agency should establish a Facilities Management Advisory Board to serve as a customer council for the Facilities Management Division.	\$0	\$0	\$0
174	300	The Facilities Management Division should develop and adopt service level agreements with the major operating departments that it serves.	\$0	\$0	\$0
175	300	The Facilities Management Division should warranty its maintenance and repair work.	\$0	\$0	\$0
176	302	The Facilities Management Division should provide point of sale receipts for each transaction. The point of sale receipts should be summarized in monthly reports provided to each department.	\$0	\$0	\$0
177	302	The Division Manager for the Facilities Management Division should meet monthly with each department to review the monthly reports and discuss the basis and nature of the costs.	\$0	\$0	\$0
178	303	The Environmental Services Division should develop an annual report regarding the City's sustainable practices including recommendations to enhance those practices.	\$0	\$0	\$0
179	305	The Agency should develop a service request aging management reporting system for the Call Center.	\$0	\$0	\$0

Recommendation #	Page Number	Recommendations	Annual Cost Savings	Annual Cost Increase	Annual Revenue Increase
180	305	The Agency should adopt an objective for closing service requests.	\$0	\$0	\$0
181	306	Managers and supervisors within the Agency should be held accountable for meeting the objective.	\$0	\$0	\$0
182	306	The Agency should work with the City Administrator's Office and the City Council to develop and adopt a policy that requires the provision of operating and maintenance funding each time the City accepts an asset that the Agency will be responsible for maintaining.	\$0	\$0	\$0
<b>Chapter 5 - Financial Management</b>					
183	310	The Administrative Services Department for the Agency should contract for a nexus study to enable the City to charge a construction street impact fee.	\$0	\$50,000	\$0
184	310	The City should adopt a construction road impact fee.	\$0	\$0	\$4,273,000
185	313	The City should adopt impact fees for sanitary sewer collection, stormwater collection, parks infrastructure, and community and capital facilities.	\$0	\$0	\$500,000 to \$1,000,000
186	313	The City should reduce or waive impact fees for affordable housing projects.	\$0	\$0	\$0
187	313	The Administrative Services Department should contract for a nexus study prior to adoption of these impact fees to determine the specific fee amount to be charged and the connection between that fee and the cost of sanitary sewer collection, stormwater collection, parks infrastructure, and community and capital facilities.	\$0	\$0	\$0
188	314	The Redevelopment Agency should provide funding required for street and sidewalk capital improvement projects in the City's redevelopment project areas.	\$0	\$0	\$0

Recommendation #	Page Number	Recommendations	Annual Cost Savings	Annual Cost Increase	Annual Revenue Increase
189	317	The Administrative Services Department should develop a sponsorship policy for consideration and approval of the City Council. This policy should include the sponsorship / partnership process, the solicitation and selection process, the agreement process, the follow-up and recognition process, and the accounting, recordkeeping, and reporting procedures.	\$0	\$0	\$0
190	317	The Administrative Services Department should be assigned responsibility for solicitation and selection of sponsors in accordance with the policies adopted by the City Council.	\$0	\$0	\$0
191	317	The Administrative Services Department should establish a 501(c)(3) charitable organization on behalf of the Agency.	\$0	\$0	\$0
192	319	The Agency should develop and implement public-private partnerships.	\$0	\$0	\$0
193	321	The Equipment Services Division should develop and recommend adjustments that address operating revenue imbalances in the Equipment fund among the various funds as part of the fiscal year 2009-10 budget submittal.	\$0	\$0	\$0
194	321	The Equipment Services Division should develop and recommend two object accounts for the allocation of Equipment fund costs: an equipment operating and maintenance object account and an equipment replacement object account.	\$0	\$0	\$0
195	321	The ten-year repayment plan to recoup the negative fund balance for the Equipment fund using the General Fund surplus when available should not be implemented. The negative fund balance for the Equipment fund should be forgiven.	\$0	\$0	\$0
196	322	The Equipment internal services fund should be modified to include two sub-funds: one for operating and maintenance revenue and	\$0	\$0	\$0

Recommendation #	Page Number	Recommendations	Annual Cost Savings	Annual Cost Increase	Annual Revenue Increase
		expenses and the other for replacement revenue and expenses.			
197	324	The Equipment Services Division should utilize a chargeback system that reflects the actual costs of providing services for each vehicle in the fleet, and not a flat rate per class.			
198	324	The Equipment Services Division should charge departments for the costs of accident repair or necessary vehicle replacement resulting from accidents in which a department's employee is found at fault or in which the Division is unable to recover the costs from the other party's insurance.	\$0	\$0	\$0
199	326	The Equipment Services Division's charge-back rates should be re-calculated, including the hours that staff should be charging to work orders, based upon the cost structure of the Equipment Services Division. Upon the re-calculation of these rates, the charge-back system and proposed rates should be shared and reviewed with customers and the Fleet Advisory Board. This review should occur on an annual basis.	\$0	\$0	\$0
200	326	The Facilities Fund should assure that labor hours and costs are charged to work orders, and provide its costs to customers both in the total and a cost per square foot.			
201	329	The Facilities Services Division and the Parks and Building Division should develop and recommend adjustments that address operating revenue imbalances among the various funds as part of the fiscal year 2009-10 budget submittal.	\$0	\$0	\$0

Recommendation #	Page Number	Recommendations	Annual Cost Savings	Annual Cost Increase	Annual Revenue Increase
202	330	The ten-year repayment plan that increases charges to departments and funds in order to recoup the negative fund balance for the Facilities Internal Service Fund should not be implemented. The negative fund balances for the Facilities Funds should be forgiven.	\$0	\$0	\$0
203	332	The City should utilize lease financing solely for replacement of heavy equipment, particularly over the next three fiscal years.	\$0	\$0	\$0
204	332	The Equipment Services Division should be responsible for administering the leases for equipment within the City's fleet.	\$0	\$0	\$0
205	336	The fund manager for the Sewer Service Fund should be in the Infrastructure and Operations Department / Public Works Agency.	\$0	\$0	\$0
206	336	The Engineering Design and Construction Department / CEDA and any other department funded by the Sewer Service Fund should be required to submit a budget request to the Infrastructure and Operations Department / Public Works Agency as part of the annual budget preparation process. The Department should review, comment, and critique these requests before submittal to the City's Budget Office.	\$0	\$0	\$0
207	336	The level of budgeted expenditures by the Engineering Design and Construction Department / CEDA should be reduced significantly to that level that can be substantiated by workload allocation, work programs, and time charges. The Agency should review and approve the workload allocation, work programs, and time charges.	\$0	\$0	\$0
208	336	Right-of-way Management should not be budgeted in the Sanitary Sewer Fund. Right-of-Way Management should be budgeted in the General Fund.	\$0	\$0	\$0



Recommendation #	Page Number	Recommendations	Annual Cost Savings	Annual Cost Increase	Annual Revenue Increase
209	337	The operating costs of Electrical Services Administration should not be treated as Agency-wide overhead cost allocation, but as a direct cost.	\$0	\$0	\$0
210	338	The City should seek voter approval of a sales tax override or a parcel tax override to fund the maintenance and repair of parks, street and park trees, and streetlights.	\$0	\$0	\$0
211	338	The funds generated by the sales tax override, if approved by the voters, should not be used for construction of new facilities; it should only be used for the maintenance, repair, and renewal of existing facilities.	\$0	\$0	\$0
212	339	The City should adopt an ordinance that imposes a "duty" on the property owners for injuries to third parties as a result of the owner's failure to maintain the sidewalk.	\$0	\$0	\$0
213	339	The Agency should perform an annual inspection of the sidewalks in residential areas on a rotating basis to identify tripping hazards and prioritize a list of areas to be repaired based on severity. Property owners should then be notified to make the necessary repairs.	\$0	\$0	\$0
214	340	The Drainage Section should be provided with its own separate operating budget, separate from the Sanitary Sewer Section.	\$0	\$0	\$0
<b>Chapter 6 - Organizational Structure and Staffing</b>					
215	343	The Fleet and Safety Coordinator within the Streets and Sidewalks Section should be reassigned to the Equipment Services Division, and funded within that budget.	\$0	\$0	\$0
216	343	The Supervising Civil Engineer position in the Infrastructure and Operations Department should be eliminated through attrition.	\$162,300	\$0	\$0

Recommendation #	Page Number	Recommendations	Annual Cost Savings	Annual Cost Increase	Annual Revenue Increase
217	343	After the above staffing adjustments, the level of staffing within the Streets and Sidewalks Section should not be adjusted: the level of staffing is appropriate to the size of the street network.	\$0	\$0	\$0
218	345	The staffing of the Tree Maintenance Section exceeds workload by one position. One position should be eliminated through attrition.	\$90,600	\$0	\$0
219	345	The amount of vehicular equipment within the Tree Maintenance Section should be reduced by two (2) cranes, two (2) tool trucks, two (2) flatbed trucks, a crew cab light dump, a brush chipper, and a compact sedan.	\$92,000	\$0	\$0
220	346	The staffing of the Sanitary Sewer Section exceeds workload by eight (8) positions. Eight (8) positions should be eliminated through attrition.	\$658,000	\$0	\$0
221	350	The level of staffing within the Drainage Section exceeds workload and service level requirements by nine (9) positions. Nine (9) positions should be eliminated through attrition.	\$701,300	\$0	\$0
222	350	Eliminate a Public Works Supervisor II and Public Works Supervisor I through attrition.	\$278,600	\$0	\$0
223	353	Reductions in the level of technician staffing assigned to the Equipment Services Division should only be made if the number of equipment and the age of the fleet is reduced through replacement of equipment that already exceeds replacement guidelines.	\$0	\$0	\$0
224	353	The work performed by the Body and Paint Shop should be outsourced and the staff allocated to the Shop eliminated through attrition.	\$423,300	\$200,000	\$0
225	355	The Electrical Construction and Maintenance Planner position in the Electrical Section should be eliminated through attrition.	\$149,500	\$0	\$0

Recommendation #	Page Number	Recommendations	Annual Cost Savings	Annual Cost Increase	Annual Revenue Increase
226	355	The Public Works Supervisor II position in Traffic Maintenance Section should be eliminated through attrition.	\$149,500	\$0	\$0
227	356	The Administrative Assistant II position in Traffic Maintenance assigned to support the Public Works Supervisor II should be eliminated through attrition.	\$91,000	\$0	\$0
228	357	The two Limited Duration Electrician positions authorized for streetlight group relamping should be eliminated through attrition.	\$240,600	\$0	\$0
229	357	One position – an Electrician – should be transferred from maintenance and repair of streetlights to traffic signals.	\$0	\$0	\$0
230	357	The streetlight maintenance and repair staff should only be assigned to the construction / installation of new streetlights as time permits; otherwise that service should be outsourced.	\$0	\$0	\$0
231	357	The City should discontinue group relamping of streetlights.	\$0	\$0	\$0
232	357	The Electrical Services and Traffic Maintenance Division should periodically inspect streetlights on arterials and collectors for burnouts and replace as identified. Streetlight burnouts in residential streets should be replaced as reported by residents.	\$0	\$0	\$0
233	358	Authorize one (1) additional Electrical Leader position, four (4) additional Electricians and two (2) additional Electrical Helper positions in the Electrical Section to enable the preventive maintenance of the City's traffic signals.	\$0	\$776,400	\$0
234	358	The traffic signal staff within the Electrical Section should not be diverted to construction of new signalized intersections; that work should be outsourced. The traffic signal staff within the Electrical Section should be focused on the maintenance and repair of the City's traffic signals.	\$0	\$0	\$0

Recommendation #	Page Number	Recommendations	Annual Cost Savings	Annual Cost Increase	Annual Revenue Increase
235	359	The number of sign maintenance and traffic painting positions should be increased by five (5) positions: a Traffic Painter and a Public Works Maintenance Worker, and three (3) Sign Maintenance Workers.	\$0	\$444,600	\$0
236	360	Eliminate a vacant Program Analyst II position.	\$123,000	\$0	\$0
237	364	Increase the skilled positions allocated to building maintenance by four (4) positions.	\$0	\$481,200	\$0
238	364	The Keep Oakland Clean and Beautiful Division should be responsible for graffiti abatement in or outside of parks.	\$0	\$0	\$0
239	364	In the next several years, as attrition occurs, the Agency should upgrade the skill mix for building maintenance to include fewer Painters, and more Electricians and Plumbers.	\$0	\$0	\$0
240	365	Custodial staffing exceeds workload and service level requirements by six (6) positions. Six (6) positions should be eliminated through attrition.	\$388,600	\$0	\$0
241	367	Architectural service workload and service level requirements exceed staffing by four positions. Four positions should be eliminated through attrition.	\$565,500	\$0	\$0
242	367	The two permanent part-time Custodians assigned responsibility for pool maintenance should be reclassified as Pool Technicians.	\$0	\$0	\$0
243	370	The total number of staff allocated to park and landscape maintenance is sufficient to deliver a good level of service. The level of staffing for park and landscape maintenance should be maintained.	\$0	\$0	\$0
244	372	Eliminate ten (10) Gardener II positions through attrition, to be replaced with Park Attendant – Part-Time positions.	\$787,900	\$0	\$0
245	372	Authorize ten (10) additional Park Attendant – Part-Time positions.	\$0	\$385,700	\$0
246	373	Eliminate the Project Manager position in the Parks and Building Division through attrition.	\$185,500	\$0	\$0

Recommendation #	Page Number	Recommendations	Annual Cost Savings	Annual Cost Increase	Annual Revenue Increase
247	374	Four (4) positions should be authorized for the Park Maintenance Section as a park construction and repair crew.	\$0	\$268,600	\$0
248	376	The 6.4 staff allocated to the Office of Parks and Recreation should be reallocated to the Park Maintenance Section of the Agency including the LLAD funding of \$364,520.	\$0	\$0	\$0
249	376	The Park Maintenance Section of the Agency and the Office of Parks and Recreation should develop and execute a service level agreement for baseball field preparation and maintenance.	\$0	\$0	\$0
250	377	The two (2) full-time custodians assigned to route 4 and the two (2) temporary part-time custodians responsible for the cleaning of standalone restrooms in parks on the weekends should be transferred to the Park Maintenance Section.	\$0	\$0	\$0
251	377	These custodial positions should be reclassified as Gardener II's, through attrition.	\$0	\$37,000	\$0
252	377	The responsibility for cleaning of stand-alone park restrooms should be assigned to the park maintenance crews assigned to the hubs.	\$0	\$0	\$0
253	377	An additional Park Supervisor I position should be authorized.	\$0	\$129,100	\$0
254	379	Street sweeping staffing exceeds workload and service level requirements by five (5) positions. Five (5) positions should be eliminated through attrition.	\$410,900	\$0	\$0
255	380	The Street Sweeper Operators should be assigned responsibility for minor maintenance and repairs of street sweepers including greasing, checking and refilling fluids, making minor mechanical adjustments, changing gutter brooms and main brooms, and maintaining the pickup head, etc.	\$0	\$0	\$0

Recommendation #	Page Number	Recommendations	Annual Cost Savings	Annual Cost Increase	Annual Revenue Increase
256	381	Electrical painting workload is misallocated and exceeds workload by three positions. Three positions should be eliminated through attrition.	\$329,500	\$0	\$0
257	382	Vegetation control workload exceeds staffing and service level requirements by six positions. Six positions should be eliminated through attrition.	\$498,000	\$0	\$0
258	382	The Agency should "pilot" test the use of organic herbicides and mulches for vacant lots to suppress weeds.	\$0	\$0	\$0
259	382	The vegetation control crew should be reallocated to the Park Maintenance Section.	\$0	\$0	\$0
260	382	Reclassify through attrition the remaining six positions assigned to the vegetation crew as Gardener II's upon their reassignment to the Park Maintenance Section.	\$0	\$55,500	\$0
261	384	Staffing for downtown cleaning can be reduced, through attrition, by ten (10) positions with the reallocation of workload to a downtown business improvement district.	\$870,000	\$0	\$0
262	385	The City should expand the waste hauler's responsibilities to include inspection and maintenance/repair of waste containers placed along the City's streets upon renewal of the contract in 2012.	\$0	\$0	\$0
263	385	Staffing for waste container maintenance and cleaning can be reduced by four (4) positions, through attrition, with the reallocation of this responsibility to the City's solid waste hauler.	\$324,000	\$0	\$0
264	389	The efficiency of illegal dumping waste collection can be enhanced enabling the reduction of nine (9) positions. Nine (9) positions should be eliminated through attrition.	\$849,600	\$0	\$0
265	389	Acquire five (5) rear loader refuse collection trucks for illegal dumping collection crews.	\$0	\$500,000 (One-Time) and \$75,000 ongoing	\$0
266	390	Litter Enforcement staffing exceeds workload and staffing requirements by three (3) positions. Three (3) positions should be eliminated by attrition.	\$319,100	\$0	\$0

Recommendation #	Page Number	Recommendations	Annual Cost Savings	Annual Cost Increase	Annual Revenue Increase
267	391	Keep Oakland Clean and Beautiful Supervisory staffing exceeds workload by three (3) positions if previous staffing adjustments are implemented. Three (3) positions should be eliminated through attrition.	\$388,800	\$0	\$0
268	393	The City should transfer the three (3) positions from the Information Technology Department to the Agency that were transferred to the Department in fiscal year 2007-08. This would include an Information Systems Administrator position and two (2) Microcomputer Systems Specialist positions.	\$0	\$0	\$0
269	396	Authorize two Spatial Analyst III positions for the Agency, and authorize these staff within the Administrative Services Department.	\$	\$277,800	\$0
270	397	Eliminate the Management Assistant position in the Administrative Services Department responsible for agenda management for the Agency and for coordination of public records requests through attrition.	\$142,300	\$0	\$0
271	402	The Administrative Services Manager position authorized in the Facilities and Environment - Assistant Director's Office should be transferred to the Administrative Services Department.	\$0	\$0	\$0
272	402	Authorize a Budget and Operations Analyst III for the Administrative Services Department.	\$0	\$126,000	\$0
273	403	The delivery of human resource services within the Agency should continue to be based upon a hybrid system that includes service delivery by the Human Resources Section, the Administrative Services Department within the Agency and the Personnel Division / Finance and Management Agency. Human resource service delivery should not be consolidated within the Personnel Division / Finance and Management Agency.	\$0	\$0	\$0
274	407	The three (3) Payroll Personnel Clerk III positions should be reassigned from the Human Resources Section to the Fiscal Services Section of the Administrative Services Department.	\$0	\$0	\$0
275	412	The Agency should automate the accounts payable process initially focusing on streamlining the invoice data entry, internal routing, and approval process.	\$0	\$0	\$0

Recommendation #	Page Number	Recommendations	Annual Cost Savings	Annual Cost Increase	Annual Revenue Increase
276	412	The Agency should utilize document imaging and OCR / ICR assisted data entry for invoice data entry.	\$0	\$0	\$0
277	412	The Agency should initiate electronic payment of invoices with any vendor with Agency contracts over \$25,000 per year using electronic data interchange.	\$0	\$0	\$0
278	412	Eliminate three (3) Account Clerk I / II positions upon the automation of internal routing and approval of invoices in the Agency.	\$194,700	\$0	\$0
279	414	With the successful deployment of the distributed time entry, the Administrative Services Department should reduce staffing by one (1) Payroll Clerk III position.	\$91,700		
280	415	The Agency's Call Center is capable of handling approximately 42% more call volume workload than existing workload.	\$0	\$0	\$0
281	423	The responsibility for managing all of the City's buildings should be consolidated with the Facilities Manager.	\$0	\$0	\$0
282	423	The responsibility for managing the urban forest, parks, medians, and vegetation management would be consolidated with a Parks Manager. This would be a new classification for the existing Building Services Manager in the existing Parks and Building Division.	\$0	\$0	\$0
283	423	The responsibility for management of streets and electrical services would be consolidated with a Public Works Operations Manager. This manager would be reclassified from an Electrical Services Manager.	\$0	\$0	\$0
284	423	The responsibility for volunteer management for the Agency should be consolidated in the Facilities and Environment Department. The Clean Community Supervisor position should assume overall responsibility for the management of the volunteer program for the Agency as a whole.	\$0	\$0	\$0
285	423	The responsibility for electrical engineering and for architectural services should be transferred to the Engineering and Construction Department / CEDA.	\$0	\$0	\$0
286	424	The Engineering and Construction Department should be transferred from the Community and Economic Development Agency to the Agency.	\$0	\$0	\$0



Recommendation #	Page Number	Recommendations	Annual Cost Savings	Annual Cost Increase	Annual Revenue Increase
287	424	The engineering staff assigned to Building Services for the purposes of development engineering should be assigned to the Engineering and Construction Department. The staff should continue to be located in the City's permit center, but report to the manager for the Engineering and Construction Department.	\$0	\$0	\$0
288	536	The Keep Oakland Clean and Beautiful Division should develop a strategy, in concert with the Real Estate Division, for disposal of these properties for the consideration of the Mayor and the City Council.	\$0	\$0	\$0
289	536	The Agency should work with the Alameda County Flood Control District to clearly identify those projects in the Drainage Master Plan that will be addressed by the District. This allocation of projects to the District should be clarified in a written agreement between the Agency and the District.	\$0	\$0	\$0
290	537	The leadership of the Agency should work with the City's Budget Office, Finance Department, the Mayor and the City Council to develop long-term financial strategies to increase the amount of General Fund expenditures for asset renewal and replacement.	\$0	\$0	\$0
291	538	The City should record the value of the assets at the time the City accepts the asset.	\$0	\$0	\$0
292	538	The Oracle Asset Module should be linked to Azteca Cityworks.	\$0	\$0	\$0

## 2. MANAGEMENT ACCOUNTABILITY

Management accountability is the expectation that managers are responsible for the quality and timeliness of program performance, increasing productivity, controlling costs, mitigating adverse aspects of agency operations, and assuring that programs are managed with integrity and in compliance with applicable law.

This chapter evaluates the management accountability practices within the Agency. This includes goals, objectives, and performance measures; measures to control sick leave and overtime; policies and procedures; global positioning systems; core services; and an Agency communication plan designed to inform and engage the residents, businesses, and employees of the City of Oakland.

### 1. THE AGENCY HAS A NUMBER OF STRENGTHS IN ITS MANAGEMENT ACCOUNTABILITY PRACTICES AND A NUMBER OF OPPORTUNITIES FOR IMPROVEMENT.

The Agency has a number of strengths in its practices for management accountability.

Examples of these strengths are portrayed below.

- The Agency is installing Azteca Cityworks, a computerized maintenance management system. This system can serve as the basis for an effective asset management system.
- The Keep Oakland Clean and Beautiful Division has deployed global positioning system units within the street sweepers and equipment assigned to illegal dumping collection.
- Some sections and divisions in the Agency have developed formal, written policies and procedures. The Keep Oakland Clean and Beautiful Division, for example, has developed standard operating procedures for such subjects as appliance removal, graffiti abatement, illegal dumping and litter removal, litter enforcement, street litter containers, the Sheriff's Office work furlough program, etc.

- The Agency has developed a *PWA Deliverables Index* that identifies deliverables (e.g., infrastructure maintenance work management system, Agency work rules and procedures, safety training program improvement, return on investment, etc.) and the specific staff within the Agency responsible for the deliverable.

There are also a number of opportunities for improvement in the Agency's management accountability practices. These opportunities are presented below.

- The Agency lacks a comprehensive set of goals, objectives and performance measures for each of its sections.
- The Agency needs to enhance the implementation of the City's attendance management policy in regards to sick leave.
- The Agency needs to enhance the effectiveness of the overtime controls including controls for compensatory time.
- The Agency needs to enhance its formal written policies and procedures for each division.
- The Agency needs to enhance the utilization of the global positioning system assets that have already been deployed and should expand deployment within the Agency.
- The Agency has not effectively utilized global positioning systems.
- The Agency has not developed a comprehensive communications plan.

The strengths in the Agency provide a sound foundation to address these opportunities for improvement.

## **2. THE AGENCY SHOULD DEVELOP AND INSTALL A "MANAGING FOR RESULTS" PROGRAM.**

Oakland aspires to be a leading public sector organization. Leading public sector organizations use goals, objectives, and performance measures to build and align managers, supervisors, and staff at all levels to collectively achieve the organization's mission, and to integrate performance information into decision-making, management,

and reporting. This process is typically known as “Managing for Results”. This process requires a series of actions by management including:

- Setting clear goals and objectives;
- Keeping goals and objectives in mind when allocating resources;
- Managing government to achieve desired goals and objectives; and
- Measuring performance and reporting results.

The development of goals, objectives, and performance measures is a process of looking toward the future, typically within a two- to five-year window, identifying why the Agency exists (mission), what it would look like if it achieved its mission (vision), and what concrete steps it will take to achieve that mission (goals). Performance measurement data tells both the Agency and its customers if the Agency is achieving or exceeding the results specified in its goals and objectives.

#### **(1) The City And The Agency Have Adopted Mission Statements.**

The City of Oakland has adopted a mission statement. That mission statement is contained in the fiscal year 2007-09 budget. The mission statement is presented below.

“The City of Oakland is committed to the delivery of effective, courteous and responsible service. Citizens and employees are treated with fairness, dignity and respect. Civic and employee pride are accomplished through constant pursuit of excellence and a workforce that values and reflects the diversity of the Oakland community.”

The Agency has also adopted a mission statement. This statement is presented on the Agency’s web site. This mission statement is presented below.

“The Public Works Agency provides for the management and maintenance of the City’s infrastructure including streets, trees, sidewalks and pathways; parks; creeks; sewers and storm drains; buildings; structures; vehicles and equipment; street lights and traffic signals. In addition, we manage community volunteer programs for beautification and clean-up projects, residential garbage and recycling, graffiti abatement and facilitate environmental compliance. The Public Works Agency strives to provide top quality, professional effective, and timely services to residents, businesses and internal

customers. We do this by focusing on relationships with ourselves and our customers, and on customer service and satisfaction, thus improving our image and maintaining the community's trust."

In support of that mission, the Agency adopted six goals in its fiscal year 2007-09 budget. These six goals are presented below.

- Improve livability through clean, well-maintained, and accessible streets, sidewalks, parks, facilities and trees.
- Manage and maintain the City's infrastructure to beautify our community and reduce the City's exposure to liability.
- Create a sustainable City by delivering renewable energy and efficiency projects, alternative fueled vehicles, and through recycling/solid waste services.
- Leverage existing resources by seeking grants and by enhancing volunteerism and sponsorship opportunities.
- Foster collaborative opportunities with other agencies and individuals to improve service delivery.
- Continue focusing on high-quality service and customer satisfaction to be the "provider of choice" for our customers.

These goals support the mission of the Agency.

## **(2) The Agency Should Revise Its Mission, Vision And Values Statements.**

A mission statement is the cornerstone of the direction of the Agency, providing the basis for aligning goals, objectives, and performance measures, and providing the context for decision-making at all levels in the Agency.<sup>2</sup>

The mission statement should articulate the purpose for the entire Agency, who the customers are, and the results the Agency expects to achieve for its customer. In evaluating the existing mission statement, the MCG considered the following:

- Does the mission statement identify who are we – a brief statement of purpose?

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<sup>2</sup> National State Auditor's Association, Best Practices in Performance Measurement, 2004

- Does the mission statement identify what do we do – what is the Agency's reason for existence?
- Does the mission statement identify for whom do we do it – the customers of the Agency?
- Does the mission statement identify why do we do it – why is it important?
- Does the mission statement identify why are public resources devoted to the effort?

The existing mission of the Agency does not clearly state the purpose of the Agency.

The mission statement does not identify what the Agency does (what business the Agency is in), why the Agency does it, and why public resources are devoted to the effort. In addition, the Agency has not developed a vision and values statement to accompany its mission statement.

The Agency should revise its mission statement, and develop a vision and values statement to accompany the mission statement. The recommended process for the development of the mission statement, vision statement, and values statement are presented below.

- **Conduct a SWOT Analysis.** The Agency must anticipate and perceive what is ahead for their customers and their employees to effectively influence the future. A strengths, weaknesses, opportunities, and threats (SWOT) analysis is a systematic analysis and evaluation of internal conditions and external data and factors that affect the Agency. In conducting the SWOT analysis, the Agency should consider what is happening in Oakland, statewide and nationally, that will affect the Agency.

**Recommendation #2: The Agency should conduct a SWOT analysis.**

- **Revise the Agency Mission Statement.** Agency staff, in concert with its internal and external customers, should carefully craft a revised mission statement. The Agency mission statement should be a broad statement expressing how the Agency intends to fulfill its public purpose. It describes the Agency's unique contribution to the City and citizens receiving services and provides a framework within which the Agency operates.

**Recommendation #3: The Agency should revise its mission statement.**

- **Revise the Vision Statement For The Agency.** A vision statement describes where the Agency wants to be and describes what the future would look like if the Agency achieved its mission. A good vision statement is one that will inspire and challenge, and also be meaningful so employees will be able to relate their job to the vision.

The Agency has developed a vision statement. That statement is presented below.

“The Public Works Agency strives to be a reputable and recognized leader in providing services and a source of pride within the community.”

This vision statement should be revised. Well-written visions are conceived through a partnership between top management and all levels of the organization - in other words, those who will be implementing the vision. A great vision statement will be:

- Brief and memorable;
- Inspiring and challenging;
- Descriptive of the ideal;
- Appealing to employees, customers, and stakeholders;
- Descriptive of future service levels;
- Idealistic, standing above the commonplace; and
- Enduring.

A possible vision statement that could serve as a beginning point for discussion by the Agency is presented below.

“The Public Works Agency provides the highest quality management and maintenance service, customer service and stewardship of infrastructure, fiscal, and natural resources entrusted to our care. We enhance public health and safety and contribute to the economic viability and livability of Oakland. We are a recognized leader among public works agencies across the country.”

**Recommendation #4: The Agency should revise its vision statement.**

**Recommendation #5: The vision statement should be published to the Agency's web page.**

- **Revise the Values Statement for the Agency.** Values and beliefs guide the decisions of an organization. Values statements are the concepts, attitudes, and beliefs that are most important to the Agency. The values define the Agency's culture and help to distinguish some choices, goals, or hopes for the future as being more appropriate than others. The Agency's strength is not only in its strategy and its products, but also the way it behaves and treats its customers. Generally, the best statements of values express the Agency's attitude and values about three things:
  - People: The way employees and customers are treated.
  - Processes: The way the department is managed, decisions are made, and products and services are provided.
  - Performance: The expectations concerning the department's responsibilities and the quality of its products and services.

The Agency has developed value statements. These value statements are presented below.

- “We value striving to provide top quality, professional, effective and timely services to residents, businesses and internal customers.”
- “We value respectful and constructive relationships with each other and our customers.”
- “We value customer service and satisfaction.”
- “We value improving our image and maintaining the community's trust.”
- “We value accountable employees who exhibit integrity, courtesy, dedication, respect and teamwork in all interactions with the each other, the public and elected officials.”
- “We value a safe work environment and safe work practices.”
- “We value continuous learning from our experiences, subject-matter experts and professional organizations.”
- “We value our employee's professional growth and promoting from within the organization.”
- “We value the taxpayer, property owner, resident, visitor, community-



based organization, external agency and volunteer as our partners in success.”

- “We value our status as a nationally accredited agency.”

These are good value statements. The MCG would suggest that value statements be added to address financial health (maintain fiscal integrity, undertake sound financing practices and ensure auditable results), partnering with the community (partner with our community, our customers and regional public works interests), stewardship of natural resources (protect the natural environment so its benefits are available to meet today’s needs as well as those of future generations), effectiveness (make the most appropriate use of resources and infrastructure), and equity (ensure fair treatment and service to all).

**Recommendation #6: The Agency should enhance its values statement.**

**(3) The Agency Should Develop Goals For Each Section Within The Agency.**

While the Agency has developed goals, these goals need to be enhanced to provide direction for the Agency and goals need to be developed for the individual departments, divisions, and sections that are aligned with the Agency mission.

Goals help answer the question, “Where is the organization going?” Among the things to be considered in developing good goals:

- The goals must support the mission;
- Each goal should represent a desired result that can be measured;
- The goals must be realistic and achievable; and
- Each goal should make sense to others outside the organization.

It is important to differentiate between goals and objectives. To provide a clarification, the Agency should consider the following:

“A goal is a statement of broad direction, purpose, or intent based upon the identified needs of the community. A goal is general and timeless; that is, it is not concerned with a specific achievement within a specified time period.”

The Agency goals must be hierarchical, specific and support the higher-level mission of the Agency. An example of a goal structure for the street sweeping section within the Keep Oakland Clean and Beautiful Division is presented below.

**Section:** Street Sweeping

**Section Goal:** Provide street sweeping services to residents and businesses to protect cleanliness, attractiveness, and stormwater quality by removing trash, debris, and other unsightly debris in the streets of the City.

The Agency Director and the Assistant Agency Directors should approve these goals.

This approval process ensures that communications exist at all levels and that goals at any level are consistent with the goals of the Agency and the City as a whole.

In summary, the goal statement for a division or a program should be a brief summary of why the division or program exists and what it is trying to achieve. It tells what the section or program does, who they do it for, and why. The statement is specific enough to describe the section's purpose but general enough to last into the future (not project-bound).

**Recommendation #7: The Agency should develop goal statements for each of its sections.**

**(4) The Agency Should Develop Objectives For Each Section Within The Agency.**

The establishment of objectives is an essential element for establishing accountability for managers and supervisors. To provide a definition of objectives, consider the following:

“Objectives are desired accomplishments that can be measured within a given time frame. Achievement of the objective advances the program toward the goal of the program. Accordingly, objectives must be developed that support and contribute to the achievement of the established goal.”

In developing objectives, the Agency should seek to make these objectives specific, measurable, achievable, realistic, and time-based or SMART. The specifics of making these objectives SMART are presented below.

- **Specific.** What exactly are we going to do, with or for whom? The program states a specific goal to be accomplished. The objective is stated in numbers, percentages, frequency, outcome, etc. The objective is clearly defined.
- **Measurable.** Is it measurable and can we measure it? This means that the objective can be measured and the data source is identified.
- **Achievable.** Can we get it done in the proposed timeframe/in this political climate/ for this amount of money?
- **Relevant.** Will this objective lead to the desired results? This means that the outcome or results of the section directly supports the goals of the section and the division.
- **Time Bound.** When will we accomplish this objective?

An example of an objective for the Street Sweeping Section could be “sweep 100% of the residential streets once every two weeks and 100% of commercial streets on a daily basis.”

The Agency Director and the Assistant Agency Directors should approve these objectives. This approval process ensures communication and consistency in all

divisions.

**Recommendation #8: The Agency should develop objectives for each section.**

**(5) The Agency Should Enhance Its Performance Measures.**

For most – if not all – Agency-related activities, it is preferable to manage and guide change or improve performance through well thought out performance measures that measure progress toward a desired result. Agency managers and supervisors must know what goals and objectives are expected of them, where their work contributes to the overall goal, how well things are progressing, and what will happen if results are not occurring as they should. This sensible approach integrates performance measures with these goals and objectives.

The Agency has developed performance measures within City's annual operating budget. These are limited in nature, however. For example, the only performance measure available for street sweeping is "number of routes swept on schedule." The Agency should develop a broader array of performance measures for each Section. An example of a broader array of performance measures for the Agency is presented in the following table.

	<b>Input Indicators</b>	<b>Output Indicator</b>	<b>Efficiency Indicator</b>	<b>Service Quality Indicator</b>	<b>Outcome Indicator</b>
<b>Indicator</b>	Budget and actual costs	Curb miles swept Tons or refuse collected	Cost per curb mile swept Cost per ton collected	% of residents and business owners / operators satisfied	Cleanliness rating of streets
<b>Indicator Calculation</b>	Personnel services plus operating expenses plus equipment	Total curb miles swept Total tons collected	Total cost for street sweeping divided by total curb miles	Total satisfied divided by total respondents	% of streets rated good or excellent cleanliness

	Input Indicators	Output Indicator	Efficiency Indicator	Service Quality Indicator	Outcome Indicator
			swept annually Total cost for street sweeping divided by total tons collected		
<b>Data Source:</b>	Oracle financial system	Daily logs Tipping receipts	See input and output indicator	Annual customer satisfaction survey	Street cleanliness survey

As the table indicates, an array of performance measures is presented for inputs, outputs, efficiency, service quality, and outcomes. The Agency's acquisition of the maintenance management software – Cityworks – should facilitate the transition to this broader array of performance measures.

While there is no specific formula or criteria for selecting performance measures, there are some characteristics typical of good measures in which they:

- Reflect results, not the activities used to produce results;
- Relate directly to a performance goal;
- Are based on measurable data;
- Contain normalized metrics for benchmarking;
- Are practical and easily understood;
- Are objective (as opposed to subjective);
- Provide a basis for continual self-assessment;
- Provide a benefit that exceeds the cost of data collection; and
- Have "owners" of that performance measure (managers and supervisors that are held accountable for service delivery and the performance of that service).

Leading public sector organizations use performance measures to determine whether

they are fulfilling their mission, values, and vision and meeting their goals and objectives.

**Recommendation #9: The Agency should expand its array of performance measures to include inputs, outputs, efficiency, service quality, and outcomes.**

**(6) The Agency Should Utilize Azteca Cityworks To Facilitate The Collection Of Performance Measurement Data.**

The intent of the acquisition of Azteca Cityworks was to provides a tool that would enable staff to gather, access and use better information needed to perform their jobs, allow supervisors to better plan workload based on available resources, provide management better and faster tools to calculate performance measures, enhance customer service through improved web-based tools and better tracking of service requests, and increase transparency by having up-to-date information and maps available to show the cost and work associated with maintaining assets throughout the City of Oakland.

However, the contract with Vestra for the installation of Azteca Cityworks limits the extent of performance measures to be included in the system, at least initially, to the existing performance measures. Specifically, section 3.4.4 of the Scope of Services requires Vestra to create a performance dashboard website with custom reports.

However, the responsibility of Vestra is limited as follows:

“VESTRA will create a custom website that provides users (supervisors) with work information, performance measures, and reports (e.g. open service requests and work orders by type) utilizing a direct connection to the Cityworks database to retrieve both active and historical work management data. *Performance measures will be based upon existing performance measures [italics added]*, where the measure can be derived from Cityworks data). Up to 20 custom report or graphs will be created by VESTRA from input provided by CITY. Complex reports will be created using Crystal Reports. Simple performance measures and graphs will be created using custom programming.

VESTRA will create drafts of the reports and submit these for review to CITY for final review and approval.”

While the use of existing performance measures is an effective first step for roll-out of Cityworks, the Agency needs to utilize the capacity of Cityworks to facilitate the development of a broader array of performance measures and the collection of data regarding the achievement of those performance measures.

**Recommendation #10: The Agency should utilize Azteca Cityworks to facilitate the development of a broader array of performance measures and the collection of data regarding the achievement of those performance measures.**

### **3. THE AGENCY SHOULD DEVELOP AND DEPLOY AN EFFECTIVE COMMUNICATION PLAN.**

One of the common concerns expressed by participants in the focus groups conducted by the MCG was the lack of communication by the Agency with the residents and businesses in Oakland.

While the Agency is authorized a Training and Public Services Administrator position, the incumbent of this position serves as the coordinator for the Agency’s safety program, coordinates safety training for the Agency, and functions as the Agency’s public information officer. The incumbent allocates an estimated 75% of her available work hours to coordinating the safety program, responding to safety concerns, administering safety training program, safety program development, facility safety inspections, and safety monitoring. Public information is not currently a focus of the position. This allocation is not likely to change significantly in the short-term given the level of staffing within the Administrative Services Department.

This, however, should not prevent the Training and Public Services Administrator from

developing a formal, written communication plan for the Agency, and the implementation of this plan by the management and supervisory team of the Agency.

The development of this communication plan should include the elements noted below.

- Goals and objectives of the communication plan (i.e., tell our story, be proactive, provide for early opportunities for information and engagement, be decentralized in delivery of communication, provide open, inclusive communication with an emphasis on 2-way communication, be collaborative, etc.).
- The key messages and themes that will be delivered by the Agency (i.e., the Agency is addressing community priorities and accomplishing objectives as identified in the Agency's strategic plan, the Agency spends tax dollars wisely, the Agency is an ethical, effective, and well managed organization, etc.).
- The audiences or primary target groups that the Agency will focus on the delivery of these messages (i.e., Agency employees, Neighborhood Crime Prevention Councils, news media, etc.).
- The communication strategies and tools that will be utilized to communicate the key messages and themes to the audiences.
- The specific actions that the Agency will take in 2009-10 and succeeding fiscal years to implement the communication plan including advertising / marketing, media relations, external communications, internal communications, and other communication technologies.
- The performance measures to assure the successful implementation of the communications plan.

The specific actions that the Agency should take to implement the communication plan and enhance communication with the public include outreach campaigns, ongoing meetings with the neighborhood associations in Oakland, promotional pieces, enhanced use of the Agency's web site, communications and media training for the management staff of the Agency, etc. There are a number of specific measures recommended by the MCG to enhance the communication by the Agency. These measures are presented below.

- Web link policies should be developed to encourage and promote community



connectivity to link the Agency's web site with community web sites.

- The cable television partnerships with KTOP should be expanded to utilize this resource to get the Agency in the public view more extensively.
- The Agency should develop RSS (rich site summary), listserv, and subscription services for news regarding the Agency to allow visitors to the Agency web site to "pull" information and engagement opportunities to them based upon their self-defined areas of interest.
- Press releases should be developed and published to the Agency web site more frequently. The most recent press release on the Agency's web site dates from April 16, 2008.
- The management team should routinely participate in meetings of neighborhood associations to enhance the visibility of the Agency and to enhance 2-way communication.
- The management team should enhance internal communication with employees of the Agency at all levels. While the Agency has an ongoing communication program with employees, the employee questionnaire clearly indicated that many employees did not have a clear understanding of the mission and the direction of the Agency. The Agency management needs to increase the face-to-face opportunities for employees of the Agency have to hear about citywide and Agency issues and initiatives.

The Agency has limited resources for communication and public information. However, the depth and frequency of communication by the Agency with the residents, businesses, and employees clearly influence perceptions regarding the Agency. As a consequence, the Agency needs to address this challenge regardless of these limited resources. This should be considered a shared responsibility of the Agency's management team.

**Recommendation #11: The Agency should develop a communication plan to guide communication with the media, residents, businesses, and Agency employees.**

**Recommendation #12: The Agency should improve the depth and breadth of communication with media, residents, businesses, and Agency employees.**

#### 4. THE AGENCY SHOULD DEVELOP AND DEPLOY MANAGEMENT REPORTING SYSTEMS.

At the present time, the Agency has not developed robust, comprehensive Agency-wide ongoing data regarding performance that managers and supervisors can effectively utilize to manage that performance.

These management-reporting systems should be utilized for a number of purposes as noted below.

- **Use it for resource allocation decisions.** There are important linkages among resource allocation, management planning, and performance measurement. An effective management planning process is directly related to and drives the process for allocating resources to carry out goals and objectives.
- **Use it in employee / management evaluations.** The Agency should develop a means of linking accountability with incentive compensation or wage increases based on performance. Managers should be held accountable for the performance of their sections, divisions, and departments, including factoring performance measurement results into their evaluation. Most best-in-class organizations link performance measures in some way to pay.
- **Use it to determine gaps between objectives and reality.** Performance measurement results can be used, to determine gaps between specific objectives and actual achievement. The root causes of these gaps are analyzed, and measures developed and implemented. Whenever there is a gap between current results and an organization's objectives, it is an opportunity for process improvement.
- **Use it to drive reengineering.** The performance measurement data should be used for reengineering in response to the identification of gaps between objectives and achievement. This could include cycle time, organizational structure, information technology, programs, and benefits.
- **Use it in benchmarking.** The performance measurement data should be utilized for benchmarking as a methodology for organizational improvement.
- **Use it to adjust objectives.** In most cases, if objectives are not met, corrective action is implemented. Conversely, if objectives are exceeded, the "bar is reset to establish stretch goals."
- **Use it to improve measures.** The Agency should display performance

measurements on bar charts and use raw data in its first year of implementation. In the next, the Agency should validate and normalize the data. In the following year, its bar chart included the data with a trend line, a simple multi-year moving average.

The Agency needs to develop and deploy effective management reporting systems, including Cityworks, to raise the performance bar in the Agency.

**Recommendation #13: The Administrative Services Department should work with the management and supervisory team of the Agency to develop and deploy Agency-wide performance measurement systems and management reports.**

**5. THE AGENCY SHOULD ENHANCE THE IMPLEMENTATION OF THE CITY'S ATTENDANCE MANAGEMENT POLICY.**

The City of Oakland adopted an Attendance Management Policy in February 1981. That policy states that *"the establishment of good attendance is not only expected, it is a condition of employment."* The policy further states *"while good attendance does not necessarily mean perfect attendance, the standard is the demonstrated ability to be on the job on time each day."* Further relevant points within the policy are presented below.

- "Each supervisor is responsible for managing the attendance of each assigned employee. All absences from work, whether because of illness, accident, personal reasons, or leave of absence are within the supervisor's area of responsibility, although other levels of management may be involved in more complex cases."
- "As a guide, an employee's record will be reviewed by the supervisor with the department manager when absent hours equal to those in the employee's standard work week (37.5 or 40.0) have been accumulated in the past 12-month period. The purpose of this review is to determine whether an attendance problem is present and, if so, the appropriate steps, including a conference with the employee, needed to correct it."
- "Judgment must be applied to the individual case. There is no set number of days absent that automatically makes an employee's attendance record a good record or a bad record."

The policy provides procedures for the supervisor to utilize in developing an attendance improvement plan of action including discussing the absence record with the employee,

requiring a doctor's verification of illness, placing an employee on the attendance program via an attendance letter, requiring clearance from the City Physician if the absence is more than five working days, etc.

A review of the sick leave utilization by the employees of the Agency indicates the Agency should take steps to effectively implement the Attendance Management Policy of the City.

**(1) Sick Leave Utilization By the Employees of the Agency In Fiscal Year 2007-08 Cost the Agency and the City \$1.3 million**

In fiscal year 2007-08, the employees of the Agency used significant amounts of sick leave, and family sick leave. This is portrayed in the exhibit following this page.

Important points to note concerning the exhibit are presented below.

- The total sick leave taken in Fiscal Year 2006-07 amounted to 52,686 labor hours. The total sick leave taken in 2007-08 amounted to 49,598 labor hours, a decrease of 5.9%. This excludes organizational units that were subsequently transferred to the Community and Economic Development Agency.
- In both fiscal years, family sick leave amounted to 24% of the total sick leave taken by employees of the Agency, and sick leave comprised 76% of the total.

## Exhibit 1 (1)

Sick Leave Hours:  
Fiscal Year 2007-08

Section	Sick Leave	Family Sick Leave	Total	%
Director and Human Resources Unit	78	22.5	100.5	0.2%
Human Resources	447	143.5	590.5	1.2%
PWA Fiscal Services	359	212.3	571.3	1.2%
Public Works Call Center	418.8	57.5	476.3	1.0%
Traffic Maintenance	1,248.10	755	2,003.1	4.0%
Infrastructure & Ops Asst Director's Office	74.5	0	74.5	0.2%
Electrical Services Admin	157	0	157.0	0.3%
Electrical Maintenance	308	65.5	373.5	0.8%
Electrical Engineering	9.5	0	9.5	0.0%
Electrical Projects	273.8	23.5	297.3	0.6%
Electrical Services Energy Savings	30	0	30.0	0.1%
Infrastructure Maint Admin	131.9	46	177.9	0.4%
Storm Drain Maintenance	1,032.30	883	1,915.3	3.9%
Sewer System Maintenance	3,140.50	2,273.50	5,414.0	10.9%
Street & Sidewalk Maintenance	4,808.70	1,598.00	6,406.7	12.9%
Tree Services	1,195.50	700.5	1,896.0	3.8%
Equipment Services Administration	2,658.30	984	3,642.3	7.3%
Facilities & Environ Asst. Director's Office	196.4	0	196.4	0.4%
Facility Services Admin	125	50.5	175.5	0.4%
Civic Center Complex	1,079.50	11	1,090.5	2.2%
Hall of Justice Complex	1,264.30	93.5	1,357.8	2.7%
Plant Operations	295.8	136	431.8	0.9%
Roving Custodial	1,844.50	232	2,076.5	4.2%
Project Design	326.8	22	348.8	0.7%
Parks/Bldg Maint Admin	133.5	67.5	201.0	0.4%
Landscape Maintenance	5,343.80	1,017.50	6,361.3	12.8%
Special Services	655.3	111	766.3	1.5%

## Exhibit 1 (2)

Section	Sick Leave	Family Sick Leave	Total	%
Bldgs Electrical & Painting	298	36	334.0	0.7%
Bldgs Plumbing & Area Maint	546.5	81.5	628.0	1.3%
Bldgs Structural	337	80	417.0	0.8%
SCGA Admin	130	0	130.0	0.3%
Street Cleaning	4,024.30	749	4,773.3	9.6%
Graffiti Abatement & Rapid Response	1,040.80	473.5	1,514.3	3.1%
Illegal Dumping	2,200.90	418.8	2,619.7	5.3%
Clean Oakland Program	262.6	30	292.6	0.6%
Litter Enforcement	485	45	530.0	1.1%
Environmental Services Admin	75.5	14	89.5	0.2%
Env Svcs Recycling & Solid Waste	583.8	69.5	653.3	1.3%
Env Svcs Environmental Remediation	86	108.3	194.3	0.4%
30685 - Program	94	0	94.0	0.2%
Env Svcs Energy Group	85.8	101	186.8	0.4%
<b>TOTAL</b>	<b>37,886.00</b>	<b>11,712.40</b>	<b>49,598.4</b>	<b>100.0%</b>

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- Overall, the direct salary cost of sick leave to the Agency amounted to \$1,434,258, in fiscal year 2006-07 and \$1,371,274 in 2007-08. This excludes organizational units that were subsequently transferred to the Community and Economic Development Agency.
  - The average number of hours of sick leave taken per employee amounted 64.7 hours in fiscal year 2007-08.
  - On the whole, the Agency lost the equivalent of 36.8 staff years to sick leave in fiscal year 2007-08.
  - In some instances, the amount of sick leave taken in 2007-08, not including family sick leave, by an employee was significant. For example:
    - An employee in Street Cleaning took 739 sick leave hours;
    - An employee on Street and Sidewalk Maintenance took 488 sick leave hours;
    - Another employee in Street and Sidewalk Maintenance took 442 sick leave hours;
    - An employee in Sewer System Maintenance took 400 sick leave hours;
    - Another employee in Street and Sidewalk Maintenance took 337 sick leave hours;
    - Another employee in Street Cleaning took 314 sick leave hours;
    - Another employee in Street Cleaning took 296 sick leave hours;
    - An employee in Storm Drain Maintenance took 272 sick leave hours; and
    - An employee in Graffiti Abatement & Rapid Response took 267 sick leave hours.
  - Altogether, twenty-six (26) employees took twice or more sick leave than they earned in 2007-08 (excluding family sick leave).
  - The lost time rate for the employees of the Agency in 2007-08 amounted to 4.7% (sick leave and family sick leave plus regular hours divided by sick leave and family sick leave). CCH completed its 17<sup>th</sup> survey in 2008 regarding unscheduled absences. According to the 2007 CCH Unscheduled Absence Survey, the absenteeism rate was 2.3% in 2007, down slightly from 2.5% last year. The CCH Survey also found that for many employers, it's no surprise when employees are likely to be no-shows. More than two-thirds (68%) report finding a discernable

pattern in unscheduled absences, with 37% of organizations reporting the most noticeable pattern is people calling in sick on Mondays and Fridays, followed by 17% recognizing the most noticeable pattern occurring around holidays such as Christmas or the Fourth of July and 13% reporting their most noticeable pattern of unplanned absences occurs during flu and hay fever seasons. The survey calculates the rate of absenteeism by dividing the paid unscheduled absence hours by the paid productive hours. The *2007 CCH Unscheduled Absence Survey* encompassed 317 human resource executives in U.S. companies and organizations of all sizes and across major industry segments in 48 states. The survey reflects experiences of randomly polled organizations with an estimated total of nearly one million employees. The data were weighted to reflect industry distribution as represented in the Society for Human Resource Management and by size based on U.S. census company size data. CCH employs over 4,000 professionals, has been in business since 1913, and provides human resources and employment law information.

- The lost time rate in the Agency in 2007-08 was twice as high as the rate reported by CCH.
- *The ICMA Center for Performance Measurement reported sick leave hours used per 1,000 hours worked.<sup>3</sup> The amount of sick leave hours worked per 1,000 hours for cities of a population 1000,000 and above was an average of 31.2 hours. This benchmark would suggest that the Agency should approximate 61 hours of leave per employee. In 2007-08, the Agency actually had an average of 64.7 hours or 6% higher.*
- The Public Works Agency of the City and County of San Francisco reported the sick leave for four pay periods in fiscal year 2005 / 06 (November 5, 2005 – February 10, 2006) averaged 3.96% of total hours (work time plus leave time). In 2007-08, the Agency actually had an average of 4.7% or 19% higher.

The levels of sick leave utilization among some of these units indicate that the Agency needs to enhance the effective implementation of the City's Attendance Management Policy.

**(2) The Agency Should Report the Amount of Sick Leave Absences To Its Managers and Supervisors On A Quarterly Basis.**

As the first step in controlling absence, the Agency should report employee absence to managers and supervisors in the Agency. The reports should be in a form that makes

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<sup>3</sup> Comparative Performance Measurement, FY 2005 Data Report, International City / County Management Association, 2006.



analysis by section, month or year relatively simple. By reporting individual records of absence (whether sickness or other), managers and supervisors can monitor employees' performance. Individual records can then be combined to provide summary statistics on levels of absence, which should help managers and supervisors to spot problem areas and take necessary remedial action.

In addition, the Agency should compare the leave rates of individual employees to Agency-wide measures. These Agency-wide leave measures should include the following:

- **Lost Time Rate.** This represents the total absence in hours or days in the quarter divided by the possible total work hours or days in the quarter multiplied times 100. For example, if the total absence in the period is 48 hours, and the possible total is 487 hours, the lost time rate is:

$$\frac{48}{487} \times 100 = 9.8\%$$

The lost time rate provides an overall measure of the possible severity of any problem. If calculated separately by section, it can show up particular problem areas.

Total time lost, however, may consist of a small number of employees who are absent for long periods, or a large number absent for short spells. A measure of 'frequency' is needed to show how widespread the problem is, so that the Agency can formulate appropriate plans to reduce it.

- **Frequency Rate.** The frequency rate shows the average number of spells of absence per employee (expressed as a percentage) irrespective of the length of each spell.

$$\frac{\text{No of spells of absence in the period}}{\text{No of employees in the period}} \times 100 = \text{Frequency rate}$$

To monitor the number of employees absent during a quarter the individual frequency rate can be used. The calculation is presented below.

$$\frac{\text{No of workers having one or more spells of absence / employees}}{\text{}} \times 100 = \text{Individual frequency rate}$$

For example, if in a quarter, the Sanitary Sewer Section employed 44 staff on average, and during this quarter, 12 employees had periods of absence: one was away three times, two were away twice and nine were away once, a total number of 16 spells of absence. The frequency rate for the Section was therefore:

$$\frac{16}{44} \times 100 = 36\%$$

The individual frequency rate was:

$$\frac{12}{44} \times 100 = 27\%$$

**Recommendation # 14:** The Administrative Services Department should develop a quarterly report for sick leave for the Agency that reports sick leave usage by employee by section for the current year-to-date versus last year-to-date, and includes the lost-time rate, and frequency rate.

### **(3) The Administrative Services Department Should Analyze Sick Leave Usage**

When the Agency has calculated levels of sick leave, the Agency should identify

Whether there is a problem in the whole of the Agency, in particular sections, or with certain employees. The Agency should compare its sick leave levels with other agencies in the City, and with other cities' public works departments, in order to see how serious the problem is and to decide whether action is needed.

**Recommendation #15:** The Administrative Services Department should analyze the sick leave usage within the Agency each quarter to identify individual employees who appear to have leave problems that need to be addressed.

### **(4) The Agency Should Provide Training To Its Managers and Supervisors In the Administration of the City's Attendance Management Policy.**

The Human Resources Section of the Agency should develop a training course for the managers and supervisors of the Agency regarding the administration of the City's Attendance Management policy. The course should teach managers and supervisors effective ways of handling absenteeism, while preserving the underlying employee relationship and complying with the City's Attendance Management policy. Aspects that the training course should include are presented below.

- The Attendance Management Policy
- Behavior and Attendance Management
- Preventing Absenteeism
- Resolving Attendance Issues
- Restoring the Workplace

The managerial and supervisory team will need training in the administration of the Attendance Management Policy if the Agency is to effectively implement this policy.

**Recommendation #16: The Human Resources Section of the Agency should develop a training course regarding the administration of the City's Attendance Management Policy.**

**Recommendation #17: All managers and supervisors in the Agency should be required to attend the training course regarding administration of the City's Attendance Management Policy.**

**(5) The Agency Should Develop An Attendance Management Guide.**

The Human Resources Section of the Agency should develop an Attendance Management Guide. The guide should provide procedures regarding implementation of the City's Attendance Management Policy. This guide should be included as part of the training course for attendance management. The guide should include such aspects as presented below.

- The steps involved in administering the City's Attendance Management policy;
- The types of attendance to be aware of in administering the Attendance Management Policy;
- How to make use of sick leave data;
- The value of using simple mathematical formulas to highlight and help deal with persistent sick leave;
- How to determine a threshold for addressing sick leave problems with individual employees and what to do when employees reach it;
- How to determine the real causes of sick leave;
- The areas to concentrate on to develop a robust Attendance Management strategy;
- The role of the manager and supervisor in implementing the Attendance Management policy;
- The medical information that may be requested if sick leave absences reach and exceed the threshold; and
- How to conduct return-to-work interviews so that returning employees know exactly where they stand with respect of their future attendance.

The development of the guide is an essential tool for the implementation of the City's Attendance Management Policy.

**Recommendation #18: The Human Resources Section of the Agency should develop an Attendance Management Guide.**

**(6) Managers and Supervisors in the Agency Should Be Held Accountable For Implementing the City's Attendance Management Policy.**

The managers and supervisors of the Agency should be held accountable for the implementation of the City's Attendance Management policy. Their responsibility should be clarified in an Agency policy that clearly states that managers and supervisors of the Agency are responsible for:

- Educating staff on the importance of regular attendance;

- Providing a safe and healthy workplace;
- Maintaining accurate attendance records for their staff, and working with the Human Resources Section;
- Analyzing attendance reports, assessing attendance problems, and monitoring sick leave patterns and usage by their employees;
- Consistently administering Agency and City policies regarding attendance management;
- Addressing attendance problems in a timely manner;
- Acknowledging attendance improvement by employees;
- Informing new employees regarding attendance expectations and the City's Attendance Management policy;
- Being positive role models with respect to attendance at work; and
- Facilitating early return to work through modified or alternative work duties.

Managers and supervisors should be assigned responsibility for the implementation of the City's Attendance Management policy.

**Recommendation #19: The Human Resources Section of the Agency should develop a policy that clarifies the responsibility of managers and supervisors of the Agency for the implementation of the City's Attendance Management policy.**

**(7) The Administrative Services Department Should Audit Agency Attendance Management Practices To Ascertain Implementation of the City's Attendance Management Policy.**

Not less than once a year, the Administrative Services Department should audit the effectiveness with which the City's Attendance Management policy is being implemented within the Agency. This could include the review of employee personnel files to determine the extent that supervisors have developed attendance improvement plans of action, and that written requests have been addressed to employees regarding medical certificates for future sick leave.

**Recommendation #20:** Not less than once a year, the Administrative Services Department should audit the effectiveness with which the City's Attendance Management policy is being implemented within the Agency.

**Recommendation #21:** The results of these audits by the Administrative Services Department should be shared with the appropriate supervisors and managers and plans for corrective action developed as necessary.

**(8) The City Should Update Its Attendance Policy.**

The City's attendance policy originates from 1981. The City should update the policy to reflect changes in labor contracts, work practices, and the like.

**Recommendation #22:** The City should update its attendance policy.

**6. THE AGENCY SHOULD ENHANCE THE MANAGEMENT OF OVERTIME.**

The City adopted an overtime policy on October 16, 2008. That policy, *Overtime Approval and Control Measures*, states, in part, the following:

- For all employees, mandatory/essential overtime, involving emergency assignments, legally mandated duties, assignments to address urgent public health or safety issues, overtime reimbursed by third parties, and / or overtime mandated by contractual requirements, direction and pre-approval must be received from the employee's direct supervisor.
- For all non-sworn employees, discretionary overtime outside the categories described above requires pre-approval by the Agency / Department Director for any and all overtime worked up to 10 hours per week. Pre-approval is required by the City Administrator or his / her designee for any and all overtime in excess of 10 hours per week.

The Agency issued an e-mail previously on January 29, 2008 that required review and pre-approval of all scheduled overtime at the Assistant Director level, until the Agency could develop appropriate overtime criteria along with a system of checks and balances.

The extent of overtime and compensatory overtime earned by employees within the Agency has been extensive in some, but not all organizational units. Important points to note concerning overtime and compensatory overtime in 2007-08 are presented in the

table below. The benchmark that the MCG has utilized for overtime is that overtime should not exceed 5% of the actual regular work hours.

Section	Overtime Hours Earned	Compensatory Hours Earned	Total Hours Earned	% of Total
Human Resources	85.5	105.5	191	0.3%
PWA Fiscal Services	903	-	903	1.6%
Public Works Call Center	79	13	92	0.2%
Traffic Maintenance	3,117.58	361	3,478.58	6.1%
Infrastructure& Ops Asst Director's Office	8	5.75	13.75	0.0%
Electrical Maintenance	1,491.25	106.67	1,597.92	2.8%
Electrical Projects	757.25	90.68	847.93	1.5%
Infrastructure Maint Admin	18.5	6	24.5	0.0%
Storm Drain Maintenance	7,033.70	386	7,419.70	12.9%
Sewer System Maintenance	7,603.24	375.75	7,978.99	13.9%
Street & Sidewalk Maintenance	6,066.73	380.5	6,447.23	11.2%
Tree Services	2,430.16	1,355.79	3,785.95	6.6%
Equipment Services Administration	5,330.00	169.5	5,499.50	9.6%
Facilities & Environ Asst. Director's Office	52.5	5	57.5	0.1%
Facility Services Admin	3	-	3	0.0%
Civic Center Complex	1,250.00	58.5	1,308.50	2.3%
Hall of Justice Complex	386	83	469	0.8%
Plant Operations	131.5	-	131.5	0.2%
Roving Custodial	605.5	-	605.5	1.1%
Project Design	32	-	32	0.1%
Landscape Maintenance	1,330.00	401	1,731.00	3.0%
Special Services	674.5	217.5	892	1.6%
Bldgs Electrical & Painting	69	30	99	0.2%
Bldgs Plumbing & Area Maint	508.5	607.25	1,115.75	1.9%
Bldgs Structural	431	381.5	812.5	1.4%
Street Cleaning	5,218.14	215.5	5,433.64	9.5%
Graffiti Abatement & Rapid Response	1,630.75	96	1,726.75	3.0%
Illegal Dumping	3,250.00	435.74	3,685.74	6.4%
Clean Oakland Program	227	42.5	269.5	0.5%
Litter Enforcement	382.5	265.75	648.25	1.1%
Environmental Services Admin	-	41.25	41.25	0.1%
Env Svcs Recycling & Solid Waste	7.5	118	125.5	0.2%
Env Svcs Environmental Remediation	-	18	18	0.0%
Env Svcs Energy Group	-	3	3	0.0%
<b>TOTAL</b>	<b>51,113.30</b>	<b>6,375.63</b>	<b>57,488.93</b>	<b>100.0%</b>

In a number of instances, specific employees earned a significant amount of overtime.

For example:

- 
- A Street Maintenance Leader in Storm Drain Maintenance earned 637 hours of overtime;
  - A Public Works Maintenance Worker in Storm Drain Maintenance earned 616 hours of overtime;
  - A Public Works Maintenance Worker in Storm Drain Maintenance earned 613 hours of overtime;
  - A Street Maintenance Leader in Storm Drain Maintenance earned 533 hours of overtime;
  - A Public Works Maintenance Worker in Storm Drain Maintenance earned 513 hours of overtime;
  - A Street Maintenance Leader in Storm Drain Maintenance earned 455 hours of overtime;
  - A Street Maintenance Leader in Storm Drain Maintenance earned 420 hours of overtime;
  - A Heavy Equipment Operator in Street and Sidewalk Maintenance earned 588 hours of overtime;
  - A Street Sweeper Operator in Street Cleaning earned 467 hours of overtime; and
  - A Sewer Maintenance Worker in Sewer System Maintenance earned 414 hours of overtime.

Overall, the amount of overtime amounted to 5.7% of the regular hours worked by the employees of the Agency in 2007-08. However, the amount of overtime among some of these sections indicates that the Agency needs to enhance the effective management of overtime.

**(1) The Agency Should Adopt A Formal, Written and Comprehensive Overtime Policy.**

The Agency has not developed a specific written overtime policy.

The Agency should develop a comprehensive overtime policy that includes compensatory overtime. A written overtime policy can provide a better understanding of



when work demands overtime and when it is more cost effective to use overtime. Written policy also helps staff of the Agency understand overtime is not an entitlement, and provides management and supervisors a better defined standard against which to evaluate employee overtime. Finally, a documented policy demonstrates management's seriousness about overtime control.

The policy should consider such aspects as the following:

- **General Approach to Utilizing Alternative Staffing Options to Minimize Overtime.** The Agency's general approach to the utilization of temporary, part-time and contractual employees to meet short-term staffing shortages (that otherwise would require the utilization of overtime) should be clearly articulated. It should also contain provisions for managing staffing levels to ensure that positions requiring minimum staffing levels are maintained as close as possible to full-staffing levels (where qualified individuals are available) and indicate when overtime will be utilized in lieu of filling positions. As a part of this section, procedures related to the circumstances and procedures, if any, under which the use of "overfills" are allowable to pre-hire individuals to fill positions for which a retirement is pending in order to avoid the time delay inevitable in the filling of vacancies.

**Recommendation #23: The Agency should develop an overtime policy and clearly spell out its choices in use of regular staff hours, alternative staffing approaches and overtime and compensatory time.**

- **Guidelines Regarding the Amount of Overtime Worked Per Employee.** Another critical component of the Agency's policy is to document its commitment to maintaining employee health and safety through the limitation of excessive overtime hours. The Agency should outline general guidelines regarding the maximum hours per day and week that are appropriate for employees to work and the exceptions that will be considered. Whatever standard the Agency desires to implement, the policy (or contractual requirements if necessary) should clearly outline the maximum hours that an employee may work in a defined period of time (both per day and per week).

**Recommendation #24: The Agency should develop a clearly described policy regarding the maximum use and accrual of overtime in a pay period.**

- **Management Controls Should Be Clearly Identified Within the Policy.** The policy should also outline the types of management controls that are required for the approval and monitoring of extra hours worked. Reasonable controls include

pre-approval of all overtime by the immediate supervisor prior to an employee working overtime, and supervisory approval noted on time sheets authorizing the additional hours as actually worked. These controls should also establish levels above which a secondary level of approval is warranted. For example, the requirement that all overtime by a single employee in excess of 24 hours in a work week should be approved by a level of authority above the immediate supervisor. In addition, overtime that would exceed an appropriate and pre-agreed upon level of the employee's annual salary should typically be review and authorized by someone outside of the Section – such as the division head. This authorization is important not only to ensure that overtime is being appropriately utilized but also to identify trends that are causing the overtime.

**Recommendation #25: The Agency should adopt a comprehensive policy governing oversight of overtime.**

**(2) Supervisory Expectations Regarding The Monitoring And Control Of Overtime And Compensatory Time Should Be Clarified And Training Provided.**

The principal individual responsible for the monitoring and control of overtime (and compensatory time) earning and usage should rest with an employee's immediate supervisor. All job descriptions of supervisory and managerial employees should clearly note, as part of the required duties, the duty of managing employee resources with attention paid to the impact on overtime and compensatory time usage. This should be a factor evaluated as part of their annual performance evaluations.

In order to assist supervisors for this role, the Agency should develop a training program for control of overtime and compensatory overtime, and incorporate into the training a description of the expectations of supervisors, the applicable City policies and specific contractual requirements, and provide them as part of this training the necessary tools to control overtime and compensatory overtime.

**Recommendation #26: Training should be provided to employees in supervisory and managerial positions regarding the expectations placed on them to manage overtime / compensatory time. Appropriate resources such as reports and labor contracts should be provided to supervisors to assist them in this obligation.**

**(3) Ongoing Reports Should Be Generated Regarding Overtime and Compensatory Time.**

The MCG identified opportunities for improvement with respect to the monitoring and reporting of overtime and compensatory time utilization. Through a comparison of the practices in the City, Agency operations, and overtime and compensatory utilization in the Agency, the MCG has identified key reports that the Agency should use to monitor and report on overtime and compensatory time. The exhibit, on the following pages, presents the recommended overtime and compensatory time reports.

The Agency should develop monthly, quarterly and annual reports to document and monitor overtime and compensatory time in detail.

**Recommendation #27: The Administrative Services Department should develop and distribute monthly, quarterly and annual reports to document and monitor overtime and compensatory time in detail.**

**7. THE AGENCY SHOULD DEVELOP COMPREHENSIVE, WRITTEN POLICIES AND PROCEDURES FOR EACH DIVISION.**

The extent of written policies and procedures in the Agency varies significantly, and some sections lack policies and procedures altogether. The Agency should develop policies and procedures manuals for each Division to guide its managers and supervisors and assure uniformity in the critical processes of each section.

In developing policies and procedures, the following approach should be utilized.

- **Minimize.** The policies and procedures should be kept to a minimum.

## Exhibit 2 (1)

Recommended Overtime and  
Compensatory Time Reports

Report	Purpose	Data	Comments
Overtime Cause Report	To track overtime hours by cause. This report will provide decision-makers with data regarding the cause of overtime to better enable them to understand the Agency's workload and staffing needs. This will also provide decision makers with historical and trend data that will allow them to make adjustments and changes to reduce potential causes of overtime.	For each section in the Agency, key causes should be identified, such as: <ul style="list-style-type: none"> <li>• Unscheduled leave time coverage (e.g., sick time, etc.)</li> <li>• Scheduled leave time coverage (e.g., vacation, etc.)</li> <li>• Training</li> <li>• Emergency coverage (e.g., fire incident, water main break, etc.)</li> <li>• Scheduled overtime (e.g., water / wastewater treatment plant coverage, refuse removal, etc.)</li> <li>• Seasonal programs (e.g., hydrant flushing, etc.)</li> <li>• Completion of regular job duties (e.g., overtime utilized to eliminate backlogs in normal job duties)</li> <li>• Minimum manning / staffing requirements</li> </ul>	<p>This report should be generated on a monthly basis for department managers.</p> <p>Quarterly summary reports should be provided to the Agency Director and Assistant Agency Directors.</p>
Overtime as a Percentage of Salary	To track overtime costs as percentage of salary to provide managers with benchmark data on overtime costs tied to salary costs.	This should be a simple calculation of overtime expenditures as a percentage of salary costs.	This report should be generated on a quarterly basis and provided to Agency Director and Assistant Agency Directors

**Exhibit 2 (2)**

<b>Report</b>	<b>Purpose</b>	<b>Data</b>	<b>Comments</b>
Overtime Hours per Pay Period by Employee	To monitor the distribution of overtime hours by employee. This report will allow managers to catch excessive overtime hours worked by employee, as well as monitor overtime shifts per pay period to ensure compliance with Agency policies.	This report should provide a list of employees that have exceeded one shift per week of overtime hours.	This report should be provided to department managers per pay period.
Year-to-Date Overtime Expenditures to Budget	To monitor actual overtime expenditures on an ongoing basis and to compare those expenditures to budgeted amounts.	This report should provide the actual dollar amount of overtime expenditures and budget, as well as the percentage over / under of budget.	This report should be provided to department managers on a monthly basis and to the Agency Director and Assistant Agency Directors on a quarterly basis.
Overtime Hours and Leave Time Usage per Work Week	To track the cost associated with the utilization of overtime in addition to leave time.	This report should provide a list of employees by department who used leave time hours and earned overtime during one workweek.	This report should be provided to department managers per pay period and a summary report should be provided to the Agency Director and Assistant Agency Directors on a quarterly basis.

**Exhibit 2 (3)**

<b>Report</b>	<b>Purpose</b>	<b>Data</b>	<b>Comments</b>
Compensatory Time	To track compensatory time for all employees in all Sections to document the liability associated with compensatory time, as well as monitor compliance with union contracts and City policies.	<p>Each Section should be required to document and track compensatory time in a manner similar to the overtime, including:</p> <ul style="list-style-type: none"> <li>• Managerial / supervisory approval of compensatory time.</li> <li>• Documentation of cause of compensatory time (using same codes as overtime).</li> <li>• Entering and tracking of compensatory time in payroll system.</li> <li>• Date earned and date of expiration (e.g., must be used by)</li> <li>• Balance of compensatory time hours.</li> </ul>	This report should be provided to department managers for each pay period and a summary report should be provided to the Agency Director and Assistant Agency Directors on a quarterly basis.
Annual Overtime and Compensatory Report	To provide an annual summary of overtime and compensatory utilization for each department.	<p>Summary of all key data collected and reported for Sections, including:</p> <ul style="list-style-type: none"> <li>• Overtime cause</li> <li>• Overtime as a percentage of salary costs</li> <li>• Overtime hours / earnings by employee</li> <li>• Overtime expenditures to budget</li> <li>• Overtime time and leave usage summary</li> <li>• Compensatory time utilization</li> </ul>	This report should be provided to the Agency Director and Assistant Agency Directors.

- **Best Methods.** Make certain the procedure represents the “best method”. This means the procedure has undergone detailed analysis and is continually challenged.
- **Review and Revise.** All policies and procedures should be reviewed annually.
- **Keep Current.** The problem with many policies and procedures is that they have long ago outlived their usefulness. No one remembers why the policies and procedures were created in the first place. Sometimes they contradict each other and create even more confusion. Responsibility for updating these policies and procedures should be clear.
- **Be ready to change.** The key to organizational effectiveness and efficiency is finding a better way. The department must always be ready to challenge current policy - throw it out – change it.
- **The policies for all of the Divisions should be available on the Agency’s intranet site.** This should facilitate easy updating.

The Agency should strive to achieve the best practices presented below in developing the policies and procedures manual.

<b>Each section should establish written policies and procedures that are routinely updated to ensure that they are relevant and complete.</b> The following guidelines should be utilized:
• Develop written policies and procedures to guide managers and supervisors.
• Establish a committee to develop, update, and evaluate its policies.
• Annually recommends changes to the section’s policies and procedures that are needed to reflect changes in law, city or Section action.
• The section supervisor reviews, changes (if necessary), and adopts the committee’s recommended changes to Agency policies.
• Develop procedures dealing with Section-wide administrative matters.
• Annually update the procedures to reflect changes in law or City Council action that affect administrative matters.
• Periodically (every four to five years) evaluate and revise the procedures to ensure that they are complete, relevant, and provide for the efficient operation of the section.
• The policies and procedures are readily accessible to all section staff, and staff uses them to guide their activities.

**Recommendation #28: Each Section in the Agency should develop a comprehensive, written policies and procedures manual.**

**Recommendation #29: Each Section manager should be assigned responsibility for the development of a comprehensive, written policies and procedures manual. The policies and procedures manual should be published to the Agency’s intranet.**

**8. THE AGENCY SHOULD EFFECTIVELY DEPLOY GLOBAL POSITION SYSTEM EQUIPMENT.**

The Agency has already deployed global positioning systems for several applications in the Keep Oakland Clean and Beautiful Division. With recent upgrades by the Division to the system, the Division will monitor such work activities as the time the broom is down, and is already capable of monitoring the speed driven by the Street Sweeper Operator, when the street sweeper is idle, the location of the Street Sweeper Operator, etc. The MCG was able to utilize the data generated by the system to evaluate the work output and productivity of the Street Sweeper Operators.

The Agency will be deploying another 125 global positioning system units in 2009 as part of the deployment of the Azteca Cityworks system. The use and application of global position system equipment offers a number of benefits to the Agency. These benefits are described below.

**(1) Reduces Fuel Costs**

- **Idle Time Reduction:** By monitoring the length of time an employee is leaving the engine running while stopped, program managers can correct this behavior and reduce fuel consumption. Large vehicles consume an estimated 0.82 gallons of fuel for every hour of idle time, while light duty vehicles consume an estimated 0.5 gallons per hour.
- **Route Optimization:** After installing a GPS system, program managers will be able to more efficiently route employees between home, office, and job sites. By using active (real-time) dispatch with the “closest mobile” function, program managers can choose the closest available technician to a job.

**(2) Improves Customer Service**

- **Timely response to customer service requests**
- **Resolving Customer Disputes:** Occasionally, customers may question how long it took a technician to respond, whether a technician did respond, or how long it



took a technician to resolve an issue. With GPS/AVL, all of the stop locations, times, and durations can be determined.

**(3) Increases Productivity**

- Improve employee routing and scheduling
- Improve the dispatching of field employees to new service calls
- Optimize routes and turn-by-turn directions for employees driving to job sites
- Employees with knowledge their movements are being monitored tend to be more diligent in doing their jobs than they might otherwise be. They are less likely to stop for unauthorized breaks, wander outside of their service territory to run personal errands, or run up overtime costs because they were “stuck in traffic” returning to the home base at the end of the day.

**(4) Reduces Vehicle Maintenance Costs**

- Vehicle technologies combined with GPS can allow for real-time monitoring of vehicle condition through error code capture from various engine sensors (i.e. oil pressure, engine temperature, check engine light, ABS sensors, etc.) and immediate communication alerting the fleet management office of an unacceptable condition.
- GPS odometer reading capture can provide alerts when scheduled services are needed on a vehicle, ensuring that life-cycle standards are met.

**(5) Monitors Risky Driver Behavior**

- Monitor and document drivers’ behind-the-wheel behavior such as speeding, erratic steering, sudden braking, and “jack-rabbit” starts
- Monitor vehicle location, meter reading, accidents, idling time and trip duration

A survey conducted of other local governments found that 65% were utilizing global positioning systems. This included such cities as St. Petersburg, Florida; San Antonio, Texas; Chicago, Illinois; Boston, Massachusetts; and Sacramento, California.

The experience of other local governments is that annual cost savings of 5% can be achieved through effective deployment and application of global positioning systems.

The Agency should utilize the systems to collect information on employees' location through GPS units installed in work vehicles. The purposes of the deployment should be to:

- Manage productivity (locating, dispatching and routing employees to job sites and planning for and managing this activity);
- Manage safety (allowing for follow-up when vehicles were stationary for an inordinate period of time and allowing for the management of dangerous driving habits); and
- Promote asset protection and management (by allowing for the recovery of stolen vehicles and reducing the wear on vehicles by through better route management).

However, as noted later within this report, management must effectively utilize the data generated by the global positioning system to warrant this investment. The global positioning system that was deployed within the Keep Oakland Clean and Beautiful Division was not effectively utilized to identify obvious challenges with the productivity of some (not all) Street Sweeper Operators. The Division had only been using the system to respond to complaints regarding Street Sweeper Operators, and not to monitor their productivity and quality of service delivery.

The Administrative Services Department should work with managers and supervisors in those sections in which global positioning systems are deployed to develop effective, succinct, and ongoing management reports generated by these systems that these managers and supervisors could generate to evaluate productivity, safety, and asset protection. The Administrative Services Department should periodically monitor the

effective deployment of these systems and the effective use of these management reports by these managers and supervisors.

**Recommendation #30: The management of the Agency should effectively utilize the data generated by the deployment of global positioning systems to evaluate productivity, safety, and asset protection.**

**Recommendation #31: The Administrative Services Department should work with managers and supervisors in those sections in which global positioning systems are deployed to develop management reporting systems utilizing the data generated by the global positioning systems.**

**Recommendation #32: The Administrative Services Department should periodically monitor the effective deployment of these systems and the effective use of these management reports by these managers and supervisors.**

**9. THE AGENCY SHOULD IDENTIFY ITS CORE SERVICES AND FOCUS ITS FINANCIAL RESOURCES ON THOSE SERVICES.**

The Agency finds itself in a difficult financial situation. The level of General Fund revenue support for the Agency is low relative to its peers in the State, and it will likely decrease from these low levels given the City's financial situation. The Agency's efforts to increase funding for park and street maintenance through an increase in lighting and landscape district taxes did not prevail. The City will balance the Agency's two internal service funds in fiscal year 2009-10, but this will require significant reductions in expenditures and levels of service for the Facilities fund. This is problematic given that existing levels of service for some of the Agency's core services are insufficient to protect the assets entrusted to its care.

Given the magnitude of these challenges, making a change in the portfolio of services offered by the Agency must be considered. This change in the portfolio includes eliminating some services or reducing the levels of other services so that the Agency can ensure that adequate funding is provided for its core services.

Reducing services in a city government is very difficult for at least two key reasons.

- First, very few services a city government offers provide no value to the community. On the contrary, most services – even those that may not be considered core services – typically address a compelling need. Reducing or eliminating such services can, therefore, be a very wrenching decision for policy makers.
- Second, city services often create their own constituencies. Consequently, it is politically difficult to eliminate or reduce services because those constituencies can be easily mobilized to create political pressure to protect those services being targeted for elimination.

Given the situation, it is imperative that decisions to reduce or eliminate services be made in as dispassionate a manner as possible. Doing so helps to reduce the emotion associated with curtailing services that benefit some city residents and provides a rationale for change that can be explained to these constituencies.

The MCG has identified an evaluation framework that the Agency can utilize to systematically assess the priority that should be placed on providing various services.

The framework incorporates three factors to help Agency managers make this determination. These three factors are presented below.

- **To what extent is the Agency legally obligated to provide the service?** If the Agency is obligated to provide the service, it is by definition a core service. These services are not included in the evaluation framework primarily because the Agency is required to provide them regardless of whether the Agency values them or not.
- **To what extent do residents expect the service to be provided?** Different communities have different expectations with regard to the types of services they expect their public works department to provide. In some communities, there is an expectation that the department provide solid waste collection services, while in others it is expected and the norm to outsource those services. Two factors should be considered when evaluating the extent to which residents expect a service to be provided: the breadth of this expectation (that is, the percentage of residents who expect the service to be provided) and the intensity/priority of that expectation (that is, the overall importance residents place on the service being

provided). Considering both factors is important because residents may expect a service to be provided (in part because this is a service historically provided by the City), and they may not particularly care whether the service continues to be provided by the Agency in the future.

- **What is the direct and indirect impact of providing a service on residents?**  
Two factors should be considered when evaluating the direct and indirect impact of providing a service on residents. First, the overall percentage of residents who are directly or indirectly affected by the service should be assessed. Second, the consequences to the residents if the service was not provided should be assessed.

The exhibit following this page presents a form by which the Agency can use to assess each service. The Agency should use this systematic framework for deciding what core services should be provided by the Agency. This should serve as the basis for identifying the core services, and as the basis for discussing the implications with the Mayor's Office and the City Council.

**Recommendation #33: The Agency should conduct a systematic evaluation of its services to identify its core services.**

**Exhibit 3 (1)****Methodology To Identify Core Services**

<b>Evaluation Factor</b>	<b>Rank</b>	<b>Description</b>
Community Expectation	1	20% or fewer of all residents expect the Agency to provide the service
	2	20% to 40% of all residents expect the Agency to provide the service
	3	Between 40% to 60% of all residents expect the Agency to provide the service
	4	Between 60% to 80% of all residents expect the Agency to provide the service
	5	80% or more of all residents expect the Agency to provide the service
Priority of Service Delivery	1	A typical resident would not expect the Agency to provide the service
	2	A typical resident would consider this service to be slightly important
	3	A typical resident would consider this service to be somewhat important
	4	A typical resident would consider this service to be very important
	5	A typical resident would consider this service to be very important
Direct Impact on Residents	1	20% or fewer of all residents benefit from this service
	2	20% to 40% of all residents benefit from this service
	3	Between 40% to 60% of all residents benefit from this service
	4	Between 60% to 80% of all residents benefit from this service
	5	80% or more of all residents benefit from this service

**Exhibit 3 (2)**

<b>Evaluation Factor</b>	<b>Rank</b>	<b>Description</b>
Consequence of direct impact	1	Consequence if the service was not provided is low
	2	Consequence if the service was not provided is somewhat low
	3	Consequence if the service was not provided is modest
	4	Consequence if the service was not provided is somewhat high
	5	Consequence if the service was not provided is quite high
Indirect impact on residents	1	20% or fewer of all residents indirectly benefit from the service
	2	20% to 40% of all residents indirectly benefit from the service
	3	Between 40% to 60% of all residents indirectly benefit from the service
	4	Between 60% to 80% of all residents indirectly benefit from the service
	5	80% or more of all residents indirectly benefit from the service
Consequence of indirect impact	1	Consequence if the service is not provided is quite low
	2	Consequence if the service is not provided is somewhat low
	3	Consequence if the service is not provided is modest
	4	Consequence if the service is not provided is somewhat high
	5	Consequence if the service is not provided is quite high

### 3. ASSET MANAGEMENT

Asset management focuses on the facts about the infrastructure assets, their performance, their preservation, and their anticipated longevity. Effective asset management in Oakland is important for a number of reasons as noted below.

- The infrastructure is aging, and much of it exceeds its life span.
- The population in Oakland is projected to grow to 517,000 by the year 2030.<sup>4</sup> In fact, the Metropolitan Transportation Commission 2030 Plan for the San Francisco Bay Area noted that Oakland would be the third highest growth city in the San Francisco Bay Area in both population and jobs lagging behind only San Jose and San Francisco.<sup>5</sup>
- The funding for asset renewal and rehabilitation is insufficient.
- The risks and liability posed by aging infrastructure are significant.
- The safety and serviceability of assets is an increasing challenge.

Effective asset management uses accurate asset information to enable decisions regarding condition, performance, and other needs with a long-term view of the preservation and renewal of these assets.

The American Public Works Association has developed a *Guidance Position Statement for Public Works Infrastructure Asset Management*.<sup>6</sup> The Statement of Position states, “*The American Public Works Association is committed to the principle that public works facilities and their management organizations are valuable assets and should be managed to provide the highest possible return on the public’s investment. Reliable*

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<sup>4</sup> Projections 2005 Forecasts for the San Francisco Bay Area to the Year 2030, Association of Bay Area Governments

<sup>5</sup> Transportation 2030 Plan for the San Francisco Bay Area, Metropolitan Transportation Commission, 2005

<sup>6</sup> Guidance Position Statement for Public Works Infrastructure Asset Management, American Public Works Association, 2003



*public works services are crucial to a safe, healthful, and productive civil society. Each generation inherits the complex system of infrastructure that facilitates these services, develops and operates this system to meet our current demands and aspirations, and then passes the system on as a legacy to future generations. These valuable assets—sewers, streets, storm-water facilities, parks, waste management systems, public buildings, and the like - should be managed to get the highest possible return for the public.”*

The framework for an asset management plan can be described in terms of seven questions.

- What do you have and where is it? (Inventory)
- What is it worth? (Costs/replacement rates)
- What is its condition and expected remaining service life? (Condition and capability analysis)
- What is the level of service expectation, and what needs to be done? (Capital and operating plans)
- When do you need to do it? (Capital and operating plans)
- How much will it cost and what is the acceptable level of risk(s)? (Short- and long-term financial plan)
- How do you ensure long-term affordability? (Short- and long-term financial plan)

This chapter evaluates the asset management practices within the Agency.

**1. THERE ARE A NUMBER OF STRENGTHS AND OPPORTUNITIES FOR IMPROVEMENT IN THE ASSET MANAGEMENT PRACTICES OF THE AGENCY.**

In evaluating the asset management practices of the Agency, a number of strengths were evident. This include the following:

- The acquisition and installation of the Azteca Cityworks computerized maintenance management system;
- The availability of inventory data for some types of assets such as some of the stormwater collection system, streets, some of the City's sidewalks, some of the City's street trees, some of the City's curb markings, etc.; and
- Recent condition assessments for some types of assets have been developed such as City streets, some of the City's buildings, and some of the City's sidewalks.

On the other hand, there are a number of opportunities for improvement. These opportunities include the following:

- The lack of an asset management policy;
- The lack of long-term asset preservation strategies and plans for managing assets under the care of the Agency;
- The lack of clarity regarding the responsibility for management of asset preservation and renewal;
- The lack of a unified set of asset management principles, processes, and procedures; and
- The lack of up-to-date asset inventory databases for the assets maintained by the Agency.

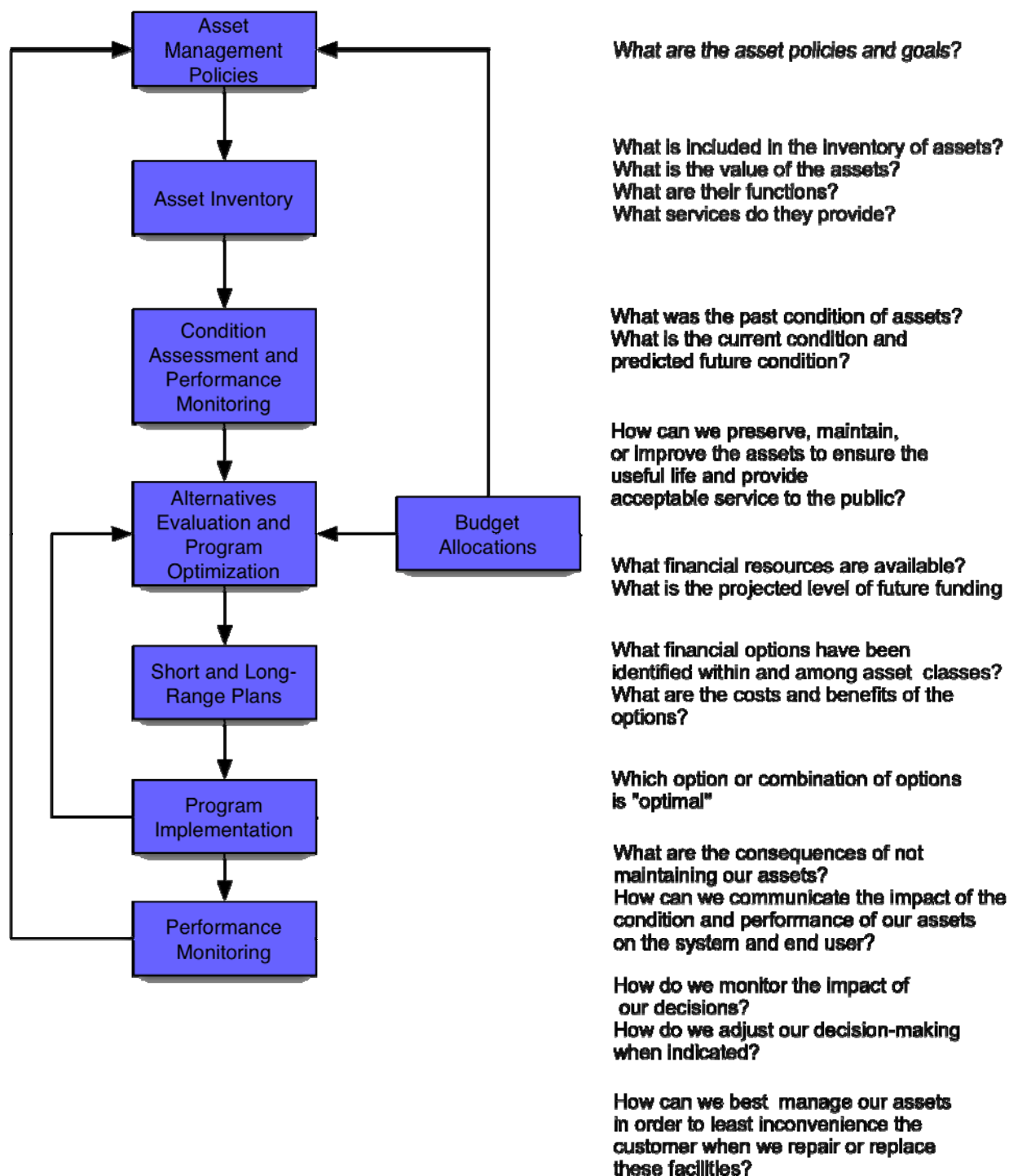
**2. THE AGENCY SHOULD DEVELOP AN ASSET MANAGEMENT POLICY AND PROCEDURE FOR THE CONSIDERATION OF THE MAYOR AND THE CITY COUNCIL.**

The Agency's asset management policy should be based on a systems approach such as the approach suggested in the exhibit on the following page.

## Exhibit 4

## Asset Management Systems Approach

## Key Questions



The asset management policy is the starting point for unifying asset management practices across the Agency. Without this, alignment and consistent management control is not possible.

The Agency lacks such a unifying, Agency-wide policy to coordinate the management of assets across the major categories (sanitary sewer, stormwater collection, streets, traffic signals, facilities, parks, etc.).

The Agency should develop a formal, written policy and procedure regarding asset management that is related to clear goals, objectives, and measures of performance. The policy should define organizational roles and responsibilities in the implementation of the asset management policy and procedure. The specific aspects of this policy and procedure are presented below.

- Goals and objectives reflect a comprehensive, long-term view of asset management.
- Policy goals and objectives are comprehensive, and integrated with other City policy objectives, and supported by quantitative and measurable performance measures or criteria.
- Principles of good asset management are articulated in the policy and procedure and clearly recognized as the driving force for resource allocation and utilization.
- The goals and objectives support the preservation of existing infrastructure assets.
- Goals and objectives embody the perspective of life-cycle economic analyses of asset performance and cost, and encourage strategies with long-term benefits.
- The goals and objectives recognize the importance of reliable information on asset inventory and condition.
- The policy should encourage the development and updating of long-range asset management plans (e.g., sanitary sewer master plan) to provide clear and specific guidance for the capital program development process.

- The policy includes criteria for allocating resources, setting program priorities, and selecting projects consistent with stated policy goals and objectives and defined performance measures.
- The policy should require the regular, ongoing collection of information on the condition of assets.
- The policy should require the use of information on changes in asset condition over time to develop and improve forecasts of asset life and deterioration.

An Agency's asset management policies and goals will define its most important priorities with regards to allocation of scarce financial resources.

**Recommendation #34: The Agency should develop an asset management policy and procedure for the consideration of the Mayor and City Council.**

**3. THE AGENCY SHOULD BE ASSIGNED ACCOUNTABILITY FOR MANAGEMENT OF THE ASSETS UNDER ITS STEWARDSHIP.**

In the development of the asset management policy and procedure, the Agency should clarify accountability for the management of each of the assets under its stewardship. This would include such assets as sanitary sewer, stormwater collection, traffic signals, streetlights, streets, buildings, parks, etc. The Agency should designate a specific manager for each asset.

The clarification of the accountability should consider the following elements:

- Each asset manager would be responsible for the development of the Agency's asset strategy for that specific asset;
- Each asset manager would be responsible for coordinating asset management of that specific asset across the Agency;
- Each asset manager would be responsible for the preparation of an asset plan for that asset; and
- Each asset manager would be responsible for continuous improvement in the Agency's approach for evaluating capital projects for that specific asset.

These asset managers, designated for each specific asset, are responsible for

development of asset management plans; implementing asset management strategies and enabling tools; and evaluating asset performance and condition.

The Agency should establish an Agency asset management council to facilitate a coordinated Agency asset management approach. The council should be comprised of each asset category asset manager, and the Agency's Executive Management Team. This asset management council should develop a position description that clarifies the roles and responsibilities of an asset manager, and develop an asset management policy and procedure for consideration of the Mayor and City Council.

In the furtherance of assigning accountability to specific asset managers, the City's Budget Office should modify the designated fund managers to assign responsibility for fund management to those managers responsible for managing the asset. For example, the existing fund manager assigned to the Equipment Fund is the Fiscal Services Manager in the Administrative Department. This designation should be modified to assign this responsibility to the Equipment Services Manager. The existing fund manager assigned to the City Facilities Fund is the Fiscal Services Manager in the Administrative Department. This designation should be modified to assign this responsibility to the Facilities Services Manager. This same modification should be made for each asset assigned to the Agency. In addition, the fund manager for the Sewer Service Fund is the Principal Civil Engineer in Engineering Design and Right-of-Way Management / CEDA. This designation should be modified; the fund manager should be the Public Works Operations Manager in the Infrastructure Maintenance Division of the Agency.

**Recommendation #35:** In the development of an asset management policy and procedure, the Agency should clarify accountability for the management of each of the assets under its stewardship.

**Recommendation #36:** The Agency should establish an Agency asset management council to facilitate a coordinated Agency asset management approach.

**Recommendation #37:** The Agency should designate the managers within the Agency that are accountable for managing each specific type of asset assigned to the Agency.

**Recommendation #38:** The City's Budget Office should modify the designated fund managers to assign responsibility for fund management to those managers responsible for managing the asset.

**Recommendation #39:** The City's Budget Office should modify the designated fund manager for the Sewer Service Fund from the Principal Civil Engineer in Engineering Design and Right-of-Way Management / CEDA to the Public Works Operations Manager in the Infrastructure Maintenance Division of the Agency.

#### **4. THE AGENCY SHOULD DEVELOP ASSET INVENTORIES FOR THE ASSETS ASSIGNED TO THE AGENCY FOR MAINTENANCE AND REPAIR.**

While it will not be easy, the Agency should develop a comprehensive inventory of its assets. To develop this comprehensive inventory, the Agency could consider taking the following steps:

- **Identify the objectives of the Azteca Cityworks maintenance management system including how the asset inventory data will be utilized to maintain and repair these assets.** Understanding how the asset inventory data will be utilized is necessary to identify the data to collect. Data could initially be utilized to establish a preventive and corrective maintenance program. In the longer term, data could be utilized to document the asset maintenance, repair, rehabilitation, and renewal expenditures as a percentage of current replacement value. Not all data needs to be collected initially. Some may be essential to the initial phase of the deployment of Azteca Cityworks maintenance management system, while others, such as current replacement value, can be collected during later phases. It is unrealistic to expect that all objectives of the Azteca Cityworks maintenance management system will be achieved at once. The Agency should start with the most important and expand the data within the system over time.
- **Identify sources of pertinent data.** Once the required data for the Azteca Cityworks maintenance management system is defined, the Agency must

determine how to obtain the data and how it will be entered into Azteca Cityworks. Necessary data is currently in paper and electronic records or must be documented and collected.

- **Determine who will collect and enter the initial asset inventory.** The collection of data is time intensive and costly. Data collection is typically collected in house or through outsourcing. Evaluating the merits of these two options lies primarily with the costs associated with each. Using current personnel who are not devoted specifically to data collection will take them away from present duties. On the other hand, outsourcing requires that the cost be incorporated into the asset management budget.
- **Assign responsibility for updating the asset inventory data.** The time and expense of collecting this asset inventory data will be wasted unless the inventory is kept current. The responsibility for updating this asset inventory needs to be clearly assigned.
- **Consider how the information will be collected and transferred to the Azteca Cityworks maintenance management system.** Consider if new forms could be created or the information should be collected using handheld electronic devices.
- **Document specific asset inventory data to be collected as well as the quality control procedures.** In addition to identifying the data entry and collection staff, determine how this data will be quality controlled. Data validation must ensure accuracy, and identify inconsistencies and potential problems, particularly during the early stages of the data collection.
- **Establish a timeline for data collection and a project manager responsible for managing data collection on a citywide basis.** The Agency should develop a schedule for data collection and clearly assign responsibility to a mid-level manager for managing this process.
- **Before beginning the initial asset inventory, install and familiarize the data collection team with software and hardware tools, the required data and data collection and entry procedures.** Training could be provided to all team members. Since the initial inventory will involve manual data collection, the Agency could develop electronic forms using PDA's to gather the information in the field.
- **Conduct a pilot program.** Completing a pilot program is an important part of making sure the asset inventory data collection meets needs and expectations. The assets selected for the pilot program should be limited in size. Once pilot program data is in the system, both the data and the process could be reviewed and quality controlled. Based upon the findings of the pilot project, the Agency could revisit the timeframe for collecting the asset inventory data.



Collecting asset inventory data doesn't necessarily require a large up-front investment of time and money. Instead of collecting all asset inventory data from the beginning, a phased approach allows organizations to start small and gradually grow their inventory. A phased approach allows an organization to adopt a system and procedures that are affordable and effectively meet immediate goals, but is also flexible enough to grow with the changing needs of both the organization and the industry.

**Recommendation #40: The Agency should collect asset inventory data for each of the assets it is responsible for maintaining and repairing.**

**5. THE AGENCY SHOULD UPDATE THE INVENTORY OF THE ASSETS UNDER ITS STEWARDSHIP ON AN ONGOING BASIS.**

An effective asset management system requires objective, high-quality data, presented to decision-makers and other stakeholders as understandable, useful information. The Agency lacks accurate and complete asset inventory data for much of the assets assigned to its care.

Keeping asset information, such as construction dates and costs, features, location, maintenance and inspections, up-to-date, accessible and understandable is a significant challenge in asset management. This asset information is a virtual representation of the assets in the field. For the data to be useful, this "virtual inventory" must be kept up-to-date to match the state of the "physical inventory," or the actual assets in the field. Monitoring the data on a regular basis is the key to keeping this virtual inventory current. The maintenance of this "virtual inventory" will require:

- The capturing and entry of asset information on any unrecorded assets discovered during regular maintenance by the staff of the Agency;

- Entry of new records for assets as they are added to the system and the immediate incorporation of these assets into the maintenance schedule that is part of Azteca Cityworks;
- Updating the results of asset condition inspections and assessments;
- Removal of assets from active duty when taken out-of-service, and archiving the information in the database; and
- The addition of other geographic information system layers not yet developed within the asset inventory.

In addition, the Agency should periodically audit the data contained within the geographic information systems to assure the accuracy and consistency of the data. These could consist of spot checks to confirm the virtual data against the physical data, and the checking of the asset libraries for duplicates or inconsistent data.

Two of the reasons for the failure of computerized maintenance management systems are presented below.

- **Bad asset inventory data.** The quantity of data is not as important as the quality of data. Too much data can be a hindrance—and inaccurate or inconsistent data cannot be processed or utilized effectively. Start with the most crucial elements and determine the standards for recording this information. The system can be expanded in the future by collecting additional fields of data.
- **Inventory data is not maintained.** A system can't remain effective if it fails to receive periodic maintenance of inventory data. Relying on a single person, such as the Agency Administrative Manager, to carry the ongoing weight of keeping the system up and running is also a mistake. It is necessary that all levels within the organization accept and adopt this new system and assist in updating the asset inventory data. Without this commitment, the system will ultimately fall short of the defined goals due to incomplete or inaccurate inventory data.

The Agency should not stop inventory maintenance once the collection process is completed. This is an ongoing process that will require attention involving any physical changes to an asset.

**Recommendation #41: The Agency should update asset inventory information on an ongoing basis.**

**Recommendation #42: The responsibility for updating of the asset inventory information should be assigned to the Administrative Services Department. The ability of the department to fulfill this responsibility is dependent upon information technology staffing recommendations contained in Chapter 6 of this report.**

**6. THE AGENCY SHOULD CONDUCT CONDITION ASSESSMENTS OF ITS ASSETS ON A PERIODIC ONGOING BASIS.**

Typically, during the initial inventory step, a condition assessment is made concurrently. It is important to remember that condition assessments must be made at regular intervals. The condition assessment, therefore, is the beginning of the iterative, or continuous phase, of the asset management program. One of the difficulties encountered with asset management programs is the lack of availability of models, methods, and appropriate guidance for how to conduct condition assessments. For some assets, there are good models and best practices available for condition assessment – the NASSCO sewer pipe condition rating system is one such example<sup>7</sup>. Additionally, paving condition assessment methodologies are quite mature.

It is important to determine how “condition” is defined for each type of asset and, indeed, whether to define condition. In many cases, the condition of an asset is less relevant than, or is simply a surrogate for its useful life. In these cases – for air handling units in the City’s buildings - for example, it may be more expedient to directly estimate the useful remaining life of the asset than it is to say it is in “fair” or “poor” condition.

**Recommendation #43: The Agency should conduct periodic asset condition assessments of the assets under its stewardship.**

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<sup>7</sup> Manual of Sewer Condition Classification, National Association of Sewer Contractors

**7. THE AGENCY SHOULD DEVELOP LONG-TERM ASSET PRESERVATION PLANS FOR THE ASSETS UNDER ITS STEWARDSHIP.**

Long-range asset management planning and priority programming of resources based upon these plans should be central to the Agency's resource allocation decisions. Asset preservation plans have been developed for some assets under the stewardship of the Agency. These include sanitary sewers and stormwater sewers. Other assets lack such long-term asset preservation plans.

**(1) The Agency Should Develop A Long-Term Plan To Facilitate the Implementation of the Storm Drainage Master Plan.**

In March 2006, CH2M Hill submitted the Storm Drainage Master Plan for the City of Oakland.<sup>8</sup> The Drainage Section lacks a long-term financial plan and resources to address the capital projects recommended by the Master Plan. The Government Finance Officers Association defines as a best practice in public budgeting that *"a government should adopt policies and plans for capital asset acquisition, maintenance, replacement, and retirement. Policies and plans for acquisition, maintenance, replacement, and retirement of capital assets help ensure that needed capital assets or improvements receive appropriate consideration in the budget process and that older capital assets are considered for retirement or replacement. These policies and plans are necessary to plan for large expenditures and to minimize deferred maintenance."*<sup>9</sup>

The Master Plan was initiated in response to complaints about flooding and other storm-related problems in Oakland throughout the 1990s. The purpose of the Master Plan was to assess the existing conditions of Oakland's storm drainage infrastructure and

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<sup>8</sup> City of Oakland Storm Drainage Master Plan, CH2M Hill, March 2006

<sup>9</sup> Recommended Budget Practices: A Framework for Improved State and Local Government Budgeting, National Advisory Council on State and Local Budgeting, June 1998.

recommend an overall management program for management and improvements.

The City's stormwater collection infrastructure, including pipelines and pump stations, was constructed 60 to 70 years ago. Since that time, very little upgrading of the system has taken place. Much of the system is now nearing the end of its useful life.

The entire City stormwater collection system interfaces downstream with the Alameda County Flood Control Agency system. The Alameda County Flood Control is a unit of the Alameda County Public Works Agency responsible for construction, operation, and maintenance of major storm drainage facilities. The City of Oakland's system drains to Alameda County Flood Control structures throughout the City. Alameda County Flood Control constructed several infrastructure projects over the last four decades, including pump stations and deeper or wider concrete channels to increase the carrying capacity of watercourses in the downstream portions of the storm drainage system. The City's construction projects did not keep pace with those of the Alameda County Flood Control Agency. Storm water runoff accumulates rapidly in the City's system, and the pipe system doesn't have sufficient capacity to store or convey the runoff as it accumulates.

The table below presents a summary of the capital program recommended within the Storm Drainage Master Plan.

Facility Type	High	Medium	Low	Future Development	Sub-Total
New Facilities	\$23,800,000	\$-	\$-	\$-	\$23,800,000
Capacity Enhancement	\$32,000,000	\$101,800,000	\$36,300,000	\$6,900,000	\$177,000,000
Rehabilitation and Replacement	\$9,400,000	\$15,300,000	\$1,900,000	\$-	\$26,600,000
Watershed Improvements	\$5,200,000	\$-	\$-	\$-	\$5,200,000
<b>TOTAL</b>	<b>\$70,400,000</b>	<b>\$117,100,000</b>	<b>\$38,200,000</b>	<b>\$6,900,000</b>	<b>\$232,600,000</b>

The highest priority projects involve facilities that have a potentially high impact based on the prioritization process. For capacity enhancement projects, the potential flooding areas are significant in terms of location. For rehabilitation projects, the facilities have failed or are likely to fail based on structure conditions.

The staff of the Drainage Section could accomplish some of this high priority work in the master plan at its current staffing levels. Examples are presented below.

- Replacing inlets. The high priority capital improvement program list included 135 drain inlets that needed to be replaced (there were other drain inlets that needed to be replaced in association with other repairs). The cost of replacing each inlet amounted to \$8,595 or a total of \$1,160,325.
- Replacing manholes. There are 61 manholes that need to be replaced in the high priority capital replacement list. The cost of replacing each manhole amounted to \$13,440 or a total of \$819,840.
- Leaf and gravel collectors. There are 20 leaf and gravel collectors that need to be installed in the high priority capital replacement list. The cost of installing each collector amounts to \$11,878 each or a total cost of \$236,960.
- Landslide repairs. There are a 39 minor landslide repairs and associated repairs (e.g., install drain inlet, install leaf and gravel collector, etc.) that could be addressed by the Drainage Section. These are landslide repairs that the high priority capital list indicated would cost less than \$25,000 to repair.
- Pipe rehabilitation. The Storm Drainage Master Plan lists a number of small to medium capital projects that involve pipe rehabilitation.

At current staffing levels, the Drainage Section could address many of the high priority capital repairs identified in Appendix O of the Storm Drainage Master Plan. These represent structure rehabilitation projects. Appendix O lists structures that were inspected. The most common defect category is sediment (1,157) followed by non-compliant grates (884). There are various other defects that are noted as well that could be generally characterized as overall structure condition, cracks, steps, problems with

the bench, cone, cover, etc. Clearly, the Agency needs to develop a plan of implementation for the Storm Drainage Master Plan and address these challenges.

The purpose of the plan would be first, to identify the gaps between City revenues and expenditures over a five-year period. Second, the plan should supply the City with recommendations on how these gaps might be closed and the plan implemented, and third, the identification of those tasks that the Agency can accomplish itself.

**Recommendation #44: The Infrastructure and Operations Department should prepare a long-term plan for the implementation of the Storm Drainage Master Plan.**

**Recommendation #45: The Infrastructure and Operations Department should develop a work plan to address the small to medium sized projects within the high priority capital plan of the Storm Drainage Master Plan utilizing the staff of the Drainage Section.**

**(2) The Master Plan for the Sanitary Sewer Collection System Should Be Updated.**

The existing master plans for the sanitary sewer collection system were completed in November 1985 and January 1986.<sup>10</sup> One of the master plans was completed for south Oakland and the other for north Oakland. The purpose of the master plans were to develop a “recommended collection system management program [that] identifies short-term improvement and long-term maintenance projects”. The master plan included short-term “catch-up” programs that would be complemented by the long-term maintenance program. The master plans also included I/I (infiltration and inflow) and capacity correction, and were to be completed in 20 years in order to comply with the Regional Water Quality Control Board’s requirements. Phase II included I/I correction work and was to be implemented in 20 years after Phase I was completed. Phase III

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<sup>10</sup> CH2M Hill, Sewer System Evaluation Survey, January 1986

consisted of programs for routine operations and maintenance, routine testing, inspection, and rehabilitation for I/I, and cyclic replacement. Phase III was to be completed concurrent with Phase I and II.

In the intervening years, much has changed in the City of Oakland.

- According to the California Department of Finance, the estimated population of the City of Oakland in 1986 was 363,000; the estimated population in 2008 was 420,183. This represents an increase of almost 16%.
- The City updated its Land Use and Transportation Element in March 1998.
- Environmental regulations regarding sewer overflows are becoming increasingly stringent. The Environmental Protection Agency (EPA) expanded requirements for municipal wastewater collection systems including requirements for the implementation of capacity, management, operations, and maintenance (CMOM) programs to reduce the occurrence, or likelihood of occurrence of sewer overflows. This will require municipalities to establish and outline programs to better manage, operate, and maintain their wastewater collection systems and also to investigate and understand the capacity needs of their systems.

To address land use changes that have occurred in the ensuing years, evaluate future land use changes in the Land Use and Transportation Element, and to address the increasingly regulatory environment, the City should commission an update of the sanitary sewer master plan.

The cost impact of the development of an updated sanitary sewer collection system master plan is presented below.

One-Time Cost Increase	
The City should commission an update of the sanitary sewer master plan	\$250,000

**Recommendation #46: The Infrastructure and Operations Department should update the master plan for the sanitary sewer collection system.**



**(3) The Agency Should Develop A Long-Term Plan To Facilitate the Renewal and Rehabilitation of the Street System and the City Should Substantively Increase the Miles of Street Overlays and Slurry Seals On An Annual Basis.**

The Agency has not prepared a long-term plan to address the infrastructure challenges associated with the rehabilitation and repair of the street system. The street system is expensive to replace; in 2007, the replacement value amounted to \$948,347,000. To assist in the management of the preservation of this asset, the Engineering and Construction Department has deployed a pavement management system developed by the Metropolitan Transportation Commission called StreetSaver; this system is in use in almost all of the cities and counties in the Bay Area.<sup>11</sup> This system begins with an evaluation of the condition of the City's streets with the evaluation generating a pavement condition index (PCI) from 0 (the lowest possible score) to 100 (the highest possible score). The table below presents a distribution of the City's street system by its pavement condition index.

PCI	PCI Rating	Centerline Miles	Lane Miles	% of Total
91-100	Very Good	46.15	120.22	5.2%
81-90	Very Good	118.21	376.09	16.2%
71-80	Very Good	176.80	528.15	22.7%
61-70	Good	130.75	378.72	16.3%
51-60	Good	103.46	288.98	12.4%
41-50	Poor	89.88	251.54	10.8%
31-40	Poor	63.58	177.77	7.7%
21-30	Very Poor	43.13	119.26	5.1%
11-20	Very Poor	29.76	75.29	3.2%
0-10	Very Poor	3.36	6.99	0.3%
<b>TOTAL</b>		<b>805.08</b>	<b>2,323.02</b>	<b>100%</b>

Important points to note concerning the data in the table are presented below.

- 8.6% of the streets were rated very poor;
- 18.5% of the streets were rated poor;

<sup>11</sup> Citywide Pavement Management Program, City of Oakland Engineering Design and Construction Department, April 2007

- 28.7% of the streets were rated good; and
- 44.1% of the streets were rated very good.

Overall, the most recent pavement condition index for the City's street system was 63 of a possible 100.

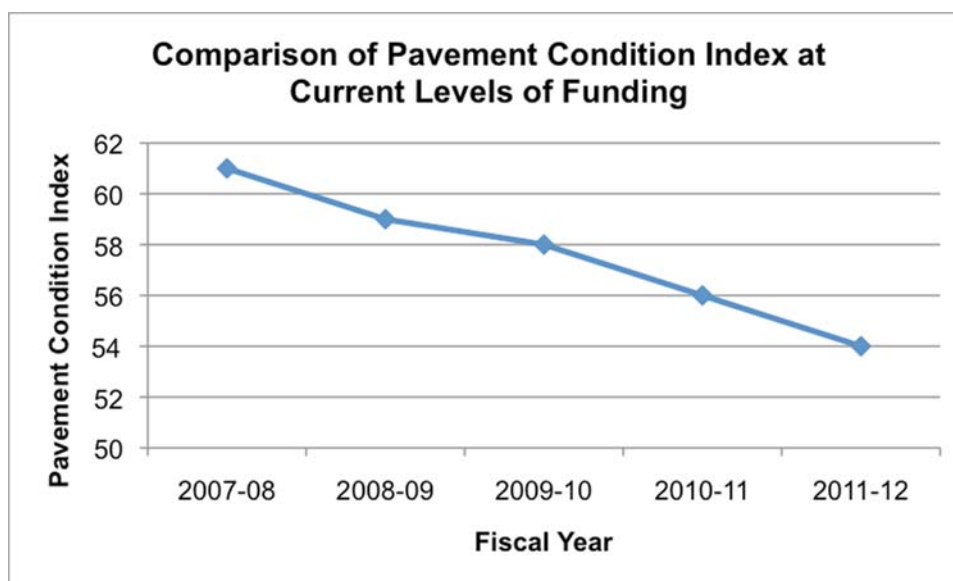
In November 2007, the Engineering and Construction Department presented a report to the City Council regarding the results of the pavement condition survey and a proposed five-year prioritization plan for the City's street rehabilitation program. That report presented the street pavement rehabilitation funding for the five years from FY 02-03 to FY 06-07 (see the table below). Over this five-year period, the City spent an annual average of \$4.351 million on street rehabilitation.

Fund	Fund Description	FY 02-03	FY 03-04	FY 04-05	FY 05-06	FY 06-07
1010	General Purpose	\$-	\$-	\$-	\$-	\$2,000,000
2116	Department of Transportation	\$2,270,000	\$-	\$-	\$-	\$2,238,000
2141	State Traffic Congestion Relief - Proposition 42	\$778,292	\$279,653	\$-	\$1,321,991	\$3,566,961
2241	Measure B: ACTIA	\$-	\$-	\$540,000	\$598,122	\$609,206
2214	ACTIA Reimbursable Grants	\$-	\$5,478,000	\$-	\$-	\$-
2416	Traffic Safety	\$-	\$-	\$-	\$675,000	\$-
5500	Municipal Capital Improvement	\$1,000,000	\$400,000	\$-	\$-	\$-
	<b>TOTAL</b>	<b>\$4,048,292</b>	<b>\$6,157,653</b>	<b>\$540,000</b>	<b>\$2,595,113</b>	<b>\$8,414,167</b>

The same report also presented the project street rehabilitation revenues for the following five fiscal years. This is presented in the table below.

Fund Description	FY 06-07	FY 08-09	FY 09-10	FY 10-11	FY 11-12
Department of Transportation	\$1,243,000	\$900,000	\$900,000	\$900,000	\$900,000
State Traffic Congestion Relief - Proposition 42	\$-	\$4,030,000	\$4,250,000	\$4,510,000	\$4,740,000
Proposition 1B - California Transportation Bond	\$6,700,000	\$1,675,000	\$1,675,000	\$1,675,000	\$1,675,000
Measure B: ACTIA	\$-	\$-	\$2,500,000	\$2,500,000	\$2,500,000
Municipal Capital Improvement	\$-	\$-	\$-	\$-	\$-
<b>TOTAL</b>	<b>\$7,943,000</b>	<b>\$6,605,000</b>	<b>\$9,325,000</b>	<b>\$9,585,000</b>	<b>\$9,815,000</b>

Over this five-year period, a total of \$8.654 million was projected to be spent on an annual basis for street rehabilitation. It is important to note that 31% of this funding was Proposition 1B Transportation Bonds and that this source of funding was projected to be exhausted by FY 2011-12. The report projected the impact of this level of funding on the pavement condition index over this five-year period (see the chart below).



As the chart indicates, the projected level of funding was projected to result in a reduction in the pavement condition index from its current 63 to 54, a decrease of 14%. To maintain the existing pavement condition index, the City would need to spend 346% more than the projected funding level or \$30 million annually.

The report presented by the Engineering and Construction Department in November 2007 did not address potential additional sources of funding to address the problem.

The Agency should prepare a long-term plan for the street system that identifies potential new sources of revenue for the street system.

The preparation of the long-term plan for the street system would help the Agency more accurately analyze the financial needs of the street system for street rehabilitation, and to plan accordingly. Long-term financial projections require the Agency to think beyond this year and next year. During normal operations, there are a number of factors that can affect the revenue required from year to year. In addition, the gap between revenues and costs can quickly widen when considering the cost increases related to inflation, increased asset rehabilitation and repair needs for aging infrastructure, and other unforeseen changes. Estimating costs for ten years based on fixed costs, operating expenses, predicted equipment replacement, repair needs, and existing grants or loans can help avoid a significant gap between revenue and costs. Once the Agency has a better idea of estimated costs for future years, it can revise current and next year's budgets accordingly.

The preparation of the long-term plan for the street system should include the following:

- Current resources or revenues including Department of Transportation, State Traffic Congestion Relief - Proposition 42, Proposition 1B - California Transportation Bond, Measure B: ACTIA, etc.;
- Alternative sources of revenue;
- Current requirements including design and construction management costs, construction costs, etc.; and
- Reserves for contingencies, etc.

These forecasts provide both short and long-term views of the financial condition of the street system, and provide the basis for the consideration of alternative sources of funding. Each year the forecasts should change and be updated during the budget process and as a result of significant changes in the economic operating environment.

In addition to the preparation of a long-term plan, the City should prevent streets that are rated as good to very good condition (those streets with a PCI of 60 or above) from deteriorating to a poor or very poor condition. This can be accomplished through the use of slurry seal. The City should not merely use overlay as the only approach to rehabilitation of the City's streets. It should use a multiple number of tools including slurry seal. Slurry seal is a mixture of slow setting emulsified asphalt, well graded fine aggregate, mineral filler, and water. It is used to fill cracks and seal areas of old pavements, to restore a uniform surface texture, to seal the surface to prevent moisture and air intrusion into the pavement, and to improve skid resistance. This treatment does not add strength, and can only be used on surfaces that have not shown evidence of failure. Slurry seal should generally be utilized on residential and collector streets. Microsurfacing should be utilized for arterial streets. Microsurfacing is a cold mixed asphalt. It consists of a graded aggregate, a binder, fines and additives. It is a hard-wearing surfacing for pavement preservation and rehabilitation. Microsurfacing is used for the more specialized slurry seal jobs of rut filling, restoring surface profile, heavy traffic or where very quick trafficking is essential.

The City has 470 centerline miles / 1,402 lane miles of streets in good or very good condition (those streets with a PCI of 60 or above). Typically, these streets should receive a seal coat once every seven (7) years. This would require approximately 67 centerline miles / 200 lane miles of slurry seal be applied to the City's streets every year. The ongoing capital cost of this level of slurry sealing and microsurfacing is presented below.

Annual Capital Outlay Cost Increase	
The City should increase the amount of streets that receive a slurry or cape seal on an annual basis.	\$8,750,000
<b>Total Capital Outlay Cost Increase</b>	<b>\$8,750,000</b>

**Recommendation #47:** The Infrastructure and Operations Department should prepare a long-term plan for the repair and rehabilitation of the City's streets including alternative sources of funding and strategies that would enhance the capacity of the staff of the Streets and Sidewalks Section to repair and rehabilitate streets.

**Recommendation #48:** The City should increase the annual capital outlay funding for the slurry seal of the City's streets to fund not less than \$8.75 million annually.

**(4) The Agency Should Develop A Five-Year Fleet Replacement Plan And The City Should Substantively Increase Replacement Funding For The Fleet.**

Any evaluation of the City's fleet must consider expenditures to maintain and repair the fleet. There are a number of performance indicators that provide an assessment of the overall cost-effectiveness of a City's fleet. The MCG uses vehicle equivalency units (VEU's) to benchmark fleet costs. Generally, MCG reduces gross maintenance and repair costs by 15% to account for non-routine services such as accident damage, preparing new vehicles for service, and non-fleet related activities. The following table provides the results of the analysis of the fleet maintenance and repair costs.

Cost Factor	Benchmark	Oakland	% Variance
Labor Cost per VEU	\$400 - \$600	\$960	160% - 240%
Parts Cost per VEU	\$300 - \$500	\$665	133% - 222%
Sublet Cost per VEU	\$100 - \$200	\$262	131% - 262%
Total Cost per VEU	\$800 - \$1,200	\$1,889	157% - 236%

The reason the MCG uses a range of costs is to account for varying conditions that are difficult to quantify in a vehicle equivalency unit analysis. These conditions include a fleet's operating environment (e.g., weather), utilization levels, the age of a fleet, and the local market for labor, parts, and vendor services. With a much higher than average fleet age, relatively high priced vendor and parts services, and a higher priced labor

market in the San Francisco-Oakland area, the \$1,200 is an appropriate competitive cost benchmark for the Equipment Services Division.

As can be seen by the table, the Equipment Services Division cost total per vehicle equivalency unit exceeds the benchmark by 57%. A number of factors are impacting the Section's competitiveness. Some of these factors are institutional and beyond the control of the organization including high salary and fringe benefit costs. However, these indicators also point to a fleet that is old and expensive to maintain.

The City, over the past five years has replaced 310 vehicles at a cost of \$16,304,740. With a total of 1,780 pieces of equipment in the City's fleet, that would result in a 29-year schedule for replacement. The situation is far worse, however. Of the 310 vehicles, 118 were marked law enforcement sedans and 26 were law enforcement motorcycles. Excluding public safety classes of vehicles, the City's fleet is on a 43-year replacement cycle. The current replacement value of the City's fleet is \$84,549,810. The City should be spending approximately \$8.5 million to \$10.5 million annually to replace the fleet in its current configuration. The City has been spending 31% to 38% of that target. The result has been a fleet that is expensive to maintain and repair. The City has been replacing 3.5% of its fleet annually. A survey of other local government fleets conducted by the State of California found these fleets replacing 9.8% of their fleet annually.<sup>12</sup>

The Equipment Services Division is making payments on the 2002 Master Lease. The payments this year amount to \$2,562,224. The payments for this Master Lease end in 2010 and 2012. The City will need to increase the amount of funding for replacement of

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<sup>12</sup> Advanced Highway Maintenance and Construction Technology Research Center, *Research and Evaluation of Business Processes for the Caltrans Division of Equipment*, 2006

the fleet by \$5.5 million annually so that the City expends not less than \$8 million annually on replacement on an ongoing basis.

To assure the effectiveness of this replacement funding, the Equipment Services Division should develop a five-year replacement plan for the City's fleet. In its more basic form, the development of a five-year replacement plan is no more than a schedule listing the specific equipment proposed for replacement in order of priority, together with cost estimates and the proposed method to finance them (i.e., pay-as-you-go, lease purchase, etc.). The replacement plan should also maximize the use of alternative sources of funding to minimize the impact on the General Fund. This should include the special revenue funds and enterprise funds within the City.

The five-year replacement plan should not be static. It would be updated each fiscal year to reflect changing priorities, changing maintenance and repair costs, unexpected component failures, etc.

While the City has limited funding available, the City will have to substantively increase the amount of funds allocated for replacement of the City's fleet. The five-year replacement plan is an important tool to evaluate whether the balancing of these priorities against the limited financial resources will result in an aging, expensive-to-maintain fleet.

The estimated annual cost impact of this recommendation is presented below.



Annual Capital Outlay Cost Increase	
The City should increase its funding for the replacement of the equipment fleet by \$5.5 million annually	\$5,500,000
<b>Total Capital Outlay Cost Increase</b>	<b>\$5,500,000</b>

**Recommendation #49:** The Equipment Services Division should prepare a five-year equipment replacement plan for the review of the operating departments and the Budget Office.

**Recommendation #50:** The Agency should identify alternative sources of funding to meet equipment replacement needs.

**Recommendation #51:** The City should increase its funding for the replacement of the equipment fleet by \$5.5 million annually.

**(5) The Agency Should Participate with the CEDA in the Development of An Urban Forestry Master Plan.**

The Agency lacks an urban forestry master plan.

The residents of Oakland live in an urban forest. The trees that make up this forest provide shade, clean the air, reduce storm water runoff, provide wildlife habitat, increase property values, and provide a sense of well being, lending beauty and character to the community. Often taken for granted, these benefits will not continue without good planning. An urban forestry master plan is designed to provide a comprehensive plan to protect, develop, and maintain diversified and appropriate tree plantings on City right-of-ways.

The planning and the development of an urban forestry plan forms the foundation for an effective and systematic tree care program. The elements of a master plan include the following:

- Existing laws, policies, and standards for the urban forest and needs for revision;
- A complete inventory of street, park and median trees;

- A species distribution to enable the City to develop management and planting strategies that are aimed at providing a balanced range of tree species;
- A condition assessment of the urban forest based upon information collected by the inventory;
- The maintenance needs of the urban forest that include an assessment of the maintenance needs of the street, park, and median trees, a strategy for the removal of hazard conditions, and the development of an operational maintenance program;
- The pruning needs of the urban forest that addresses a cycle of pruning maintenance for trees recognizing different pruning needs depending on location, size, and growth habits of the species;
- A tree planting plan including the identification of planting locations, the exact planting specifications, canopy coverage, and policies for species and age diversity of the urban forest; and
- Goals and policies including tree resource protection, tree resource expansion, management, maintenance, and care, education and outreach, citywide coordination and support, and staff development.

The City has received a CAL FIRE grant for the development of the City's urban forestry master plan. The Agency should participate with the CEDA in the development of the urban forest master plan, and be assigned responsibility for its implementation.

**Recommendation #52: The Agency should participate with the CEDA in the development of the urban forest master plan and be assigned responsibility for its implementation.**

**(6) The Agency Should Develop A Long-Term Plan for Replacement of Traffic Signals and the City Should Increase Funding for the Replacement of Signal Controllers.**

The Agency has not developed a master plan for the renewal and replacement of traffic signal equipment. At present, renewal and replacement of traffic signal equipment is not regularly scheduled. Traffic signals are periodically identified for an upgrade and implemented as funding and staffing allows.

The Institute of Transportation Engineers recommends that upgrades of traffic signals be scheduled every 20 years. As traffic signal equipment becomes obsolete and worn out as a result of age and usage, wiring and conduit begins to fail, and controllers lack the ability to interconnect with adaptive control systems to facilitate the reduction of traffic delays.

The purpose of a Traffic Signal Master Plan is to provide a comprehensive evaluation of the City's traffic signal system to systematically identify deficiencies in the City's system and develop plans to address these deficiencies. There are three tasks associated with the development of a master plan for the traffic signal system as noted below.

- Examine the current conditions, maintenance operations, and planned improvements for the City's traffic signal system.
- Identify areas for improvement.
- Recommend courses of action to address those areas.

Traffic signal technologies made significant advances in the late 1980's and early 1990's. Advances in traffic signal equipment and hardware continue today. Traffic signal installations within the last 15 years closely resemble those built today and satisfy, or are close to satisfying, current design standards and hardware requirements. Intersections signalized or replaced in the last 15 years are generally in good condition and satisfy current design practices. Intersections over 30 years old are generally in poor condition and do not satisfy current design practices. The intersections in the 15 to 30-year range fall somewhere between the two groups. Based on these general observations, the Agency should take a closer look at all traffic signals 15 years old, or older.

For the purposes of the master plan, the life of a traffic signal installation is estimated to be about 40 years. This is based on the anticipated life of mast arms, foundations, and electrical conduit. At the 20-year mark, the remainder of the above ground and electrical equipment has met the end of its useful life and should be replaced to maintain reliability through the second 20-year period.

The reality of these life cycles depends on advances in technology, changes in design practices, and changes in traffic volumes and patterns. Conditions should be rated for all traffic signal installations that are over 15 years old. In general, the ratings should be based on the following:

<b>Rating</b>	<b>Conditions Generally Observed</b>
Poor	<ul style="list-style-type: none"><li>• Lack of mast arms</li><li>• 30+ year old wiring and conduits</li><li>• Geometric deficiencies related to delay or safety issues</li></ul>
Fair	<ul style="list-style-type: none"><li>• Mast arms present</li><li>• Signal hardware about 20 years old</li><li>• Operational deficiencies related to signal equipment (detection or cabinet limitations)</li></ul>
Good	<ul style="list-style-type: none"><li>• Mast arms present</li><li>• Newer installation or recently upgraded</li><li>• May need a minor equipment upgrade (e.g., video detection or cabinet) but remainder has been upgraded recently</li></ul>

A complete traffic signal upgrade replaces all of the traffic signal equipment at an existing signalized intersection with new, state-of-the-art equipment. This included the signal heads, signal posts, the controller cabinet and equipment within, as well as evaluating the electrical wiring and replacing as needed. An upgrade project would not include replacement of the mast arm assemblies, junction boxes, concrete foundations that the controller cabinet and signal posts are set on, or the underground conduit (unless the underground conduit is more than 40-years old). The upgrade of these signals could also include design modifications such as the following:

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- Replacing troublesome in-pavement detector loops with video detection to improve operation of the intersection;
  - Interconnecting of a series of traffic signals to improve operation along a major street;
  - Relocating a signal post location to reduce recurring knockdowns;
  - Adding signal indications or relocating indications to improve visibility;
  - Changing signal timing to improve operation of the intersection;
  - Installation of uninterruptable power supply for critical intersections; and
  - The change over from electro-mechanical controllers to solid-state controllers.

The Agency should prepare a long-term traffic signal master plan to address three deficiencies: (1) upgrades to traffic signals at the end of their 20-year life cycle; (2) the installation of Uninterruptable Power Supply (UPS) systems at all critical signalized intersections; and (3) the establishment of interconnected signal systems.

In addition, the City should increase the annual capital outlay funding for replacement of signal controllers. At the present time, the City does not systematically replace its traffic controllers; it only replaces signal controllers during upgrades of signalized intersections. Traffic signal controllers should be replaced at approximately twenty (20)-year intervals due to obsolescence or changes in functionality. These computer-based controllers deteriorate with time and replacement parts become difficult to find as the equipment is phased out of manufacture. In addition, controllers that are older than twenty (20)-years are not able to integrate any Intelligent Transportation Systems (ITS) traffic management features such as video monitoring and traffic adaptive technology, which are available in the newer traffic signal systems and can improve overall traffic flow by adjusting signal timing in response to real-time traffic conditions. The cost to

replace these controllers approximates \$15,000 per controller. The estimated ongoing cost impact of replacing these signal controllers is presented in the table below.

Annual Capital Outlay Cost Increase		Annual Cost Decrease	
The City should replace signal controllers on a 20-year schedule and increase the capital outlay funding for the replacement of controllers.	\$500,000	NA	\$0
<b>Total Capital Outlay Cost Increase</b>	<b>\$500,000</b>	<b>Total Operating Cost Decrease</b>	<b>\$0</b>

**Recommendation #53:** The Infrastructure and Operations Department should prepare a long-term plan for the renewal and replacement of traffic signal systems.

**Recommendation #54:** The City should replace traffic signal controllers at approximately twenty (20)-year intervals.

**Recommendation #55:** The City should increase the annual capital outlay funding for replacement of signal controllers.

**(7) The Agency Should Develop A Long-Term Plan for Replacement of Signs.**

Signs are message boards along the roadway used to convey important information about using the transportation system. Signs are essential for regulating vehicle and pedestrians that share the street system. Without signs, vehicular travel would be dangerous and confusing. Signs are generally one of the least expensive items in a street network but they require continued maintenance to ensure the safety of users.

The City's signs can be grouped into four different categories. These categories are presented below.

- Regulatory signs are used to inform users of selected traffic laws or regulations. The most common examples are Stop signs, speed limit and no turn on red signs. They follow a very strict guideline called the *Manual on Uniform Traffic Control Devices* (MUTCD) for their message, design and application. It is important to be consistent with traffic control signs so they are universally understood. Strictly following the MUTCD helps assure consistency.

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- Warning signs call attention to unexpected conditions and alert users to reduce speed or take an action in the interest of safety. Curve ahead, chevrons, divided highway, dead ends, height clearance, stop ahead and signal ahead are warning signs. Traffic calming devices often have warning signs associated with them. School zone signs can also be a warning sign although some have legal enforcement. The application of warning signs should strictly follow the MUTCD.
  - Guide signs are essential to direct road users along streets and highways. They inform of intersections, direction to highways, or other important destinations. Common guide signs are street name, directions to parking, sporting complexes, libraries, train and airport locations, or cultural interest sites.
  - Custom signs are a category of signs that have developed over the past 10 years. This group of signs has no regulating structure like the previous types. These signs are built using custom sign making techniques and use artistic principles rather than MUTCD standards. Examples of custom signs are the Neighborhood Watch signs. Street name signs should follow the MUTCD standard.

As signs age they lose their reflectivity. Without reflectivity signs are difficult to read at night. If a stop sign cannot be seen, a motorist could miss the stop sign causing an accident. If a warning sign is poor, a hazard could be missed and an accident could occur.

The standards for the reflectivity of signs were recently modified by the MUTCD (Section 2.A.0.9); this is a measurable standard. This standard is presented below.

- Public agencies or officials having jurisdiction shall use an assessment or management method that is designed to maintain sign retroreflectivity at or above the minimum levels in Table 2A-3.
- Compliance with the above standard is achieved by having a method in place and using the method to maintain the minimum levels established in Table 2A-3. Provided that an assessment or management method is being used, an agency or official having jurisdiction would be in compliance with the above standard even if there are some individual signs that do not meet the minimum retroreflectivity levels at a particular point in time.
- Except for those signs specifically identified in the Option in this Section [applicable to highway agencies], one or more of the following assessment or management methods should be used to maintain sign retroreflectivity:

- Visual Nighttime Inspection – The retroreflectivity of an existing sign is assessed by a trained sign inspector conducting a visual inspection from a moving vehicle during nighttime conditions. Signs that are visually identified by the inspector to have retroreflectivity below the minimum levels should be replaced.
- Measured Sign Retroreflectivity – Sign retroreflectivity is measured using a retroreflectometer. Signs with retroreflectivity below the minimum levels should be replaced.
- Expected Sign Life – When signs are installed, the installation date is labeled or recorded so that the age of a sign is known. The age of the sign is compared to the expected sign life. The expected sign life is based on the experience of sign retroreflectivity degradation in a geographic area compared to the minimum levels. Signs older than the expected life should be replaced.
- Blanket Replacement – All signs in an area/corridor, or of a given type, should be replaced at specified intervals. This eliminates the need to assess retroreflectivity or track the life of individual signs. The replacement interval is based on the expected sign life, compared to the minimum levels, for the shortest-life material used on the affected signs.
- Control Signs – Replacement of signs in the field is based on the performance of a sample of control signs. The control signs might be a small sample located in a maintenance yard or a sample of signs in the field. The control signs are monitored to determine the end of retroreflective life for the associated signs. All field signs represented by the control sample should be replaced before the retroreflectivity levels of the control sample reach the minimum levels.
- Other Methods – Other methods developed based on engineering studies can be used.

A timely replacement program helps assure that signs will be replaced before they violate reflectivity standards.

The *Citywide Sidewalk/ADA Inventory*, completed for the Agency in April 2007, included an assessment of signs.<sup>13</sup> While the study was labeled as Citywide, it was not citywide. It included only those assets from the curb and gutter to the back of the sidewalk; signs

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<sup>13</sup> City of Oakland, California Citywide Sidewalk / ADA Inventory, Concept Marine Associates, April 2007



located behind the sidewalks, in street median strips, or where no sidewalk was present were not part of the inventory.

A total of 45,475 signs were evaluated; these only included regulatory, temporary, and caution signs. The condition of the signs was evaluated as part of this inventory. The results of this evaluation are presented below.

Condition	Number of Signs	% of Total
Good	33,421	73.5%
Fair	5,372	11.8%
Poor	6,682	14.7%
<b>Total</b>	<b>45,475</b>	<b>100.0%</b>

As the table indicates, almost 15% of the signs, or 6,682 signs, were rated poor. Replacement of these signs would require approximately 690 crew days; a 1-person crew size would be utilized. This is equivalent to three (3) staff years.

**Recommendation #56: The Infrastructure and Operations Department should prepare a long-term plan for the replacement of the sign system.**

**Recommendation #57: The Infrastructure and Operations Department should develop a work plan to replace those signs that were identified as being in poor condition by the *Citywide Sidewalk / ADA Inventory* utilizing the staff of the Traffic Maintenance Section.**

**(8) The Agency Should Develop A Long-Term Plan for Renewal and Rehabilitation of the City's Sidewalks.**

The City Sidewalk Master Plan is designed to provide a comprehensive maintenance and improvement plan for the City's sidewalk system to repair damage caused by the City's street trees.

The sidewalk system is one mode of transportation used for easy access to neighborhoods, schools, businesses, and parks. Sidewalks enhance safety by separating vehicles and pedestrians. They are also used for recreation such as

walking, jogging, etc. The sidewalk streetscape areas add to the aesthetic appeal of the downtown areas. A comprehensive plan is needed to keep up with its growth and maintenance needs.

The cost of ignoring problems with the City's sidewalks is significant; from fiscal year 2001- 2002 through FY 2007-2008, the City paid a total of \$ 2,169,904 for sidewalk related injuries, or almost \$310,000 annually. This amount does not include the cost of defending these actions.

The *Citywide Sidewalk / ADA Inventory*, completed for the Agency in April 2007, included an assessment of sidewalks.<sup>14</sup> That assessment noted that in 2002, the Americans with Disabilities Act (ADA) community won a landmark case dealing specifically with the sidewalk and travel way issues. This case, *Barden vs. the City of Sacramento*, has a significant impact on California cities. The ruling in favor of the plaintiff stated that cities must provide "passable sidewalks" for all of its citizens. The court ruled that cities must, at a minimum, craft a mechanism for corrective action for sidewalk repairs over some period of years. This mechanism is called the ADA Transition Plan.

The *Citywide Sidewalk / ADA Inventory* showed that approximately 84% of the sidewalks in Oakland were in satisfactory condition and only 16% were damaged. The majority of sidewalk damage (68%) was determined to be private damage. Just 32% of damage was attributed to trees - both official City trees and non-official private trees. The estimated cost to repair all damaged sidewalks is approximately \$88 million.

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<sup>14</sup> City of Oakland, California Citywide Sidewalk / ADA Inventory, Concept Marine Associates, April 2007

Approximately \$28 million of this repair cost was related to City tree damage. The remaining \$60 million in required repairs, due mostly to old age and deterioration, was considered to be the responsibility of the private property owners. (Under California Streets and Highways Code Sections 5600-5602, the fronting property owners are responsible for maintaining sidewalks and repairing damage.)

The Community and Economic Development Agency recently proposed at an October 28, 2008 City Council meeting a five-year prioritization plan for the City's sidewalk repair program and allocating sidewalk repair funds for specific categories of repair each year. The projected sidewalk repair funding was \$790,000 annually for the five-year period from 2009-10 to 2013-14. The five-year prioritization plan included a sidewalk prioritization policy. The funding level would enable, over the five-year period, to complete the repair of all of the sidewalk damage in Tier 1 areas. Tier 1 areas were those consisting of transit streets and corridors; it did not include Tier 2 areas that consist of corridors with the highest density of public facilities, Tier 3 areas that consist of corridors with the highest density of privately owned public accommodations, or Tier 4 areas that were limited to residential areas.

The funding and the repairs of these Tier 1 prioritized areas were to be accomplished solely with the use of contractors. There was no discussion within the sidewalk prioritization plan of the staff resources within the Streets and Sidewalks Section and how those staff could assist in addressing this backlog.

These staff resources should be capable of replacing 11,000 linear feet of sidewalk annually; not including these resources unnecessarily limits the City's ability to address the challenge presented by the sidewalk prioritization plan.

**Recommendation #58: The Agency should meet with the staff of the Engineering and Construction Department to revise the sidewalk prioritization plan and develop a balanced approach that includes the deployment of the staff resources within the Streets and Sidewalks Section.**

**(9) The Agency Should Develop A Five-Year Plan For Renewal and Rehabilitation Of The City's Parks.**

The Trust for Public Land recently published *The Excellent City Park System: What Makes It Great and What It Takes to Get There*. The Trust for Public Land noted that “it is critical that every agency know the extent of its natural and historical resources – land, flora, buildings, artwork, waterways, paths, roads, and much more – and have a plan to manage and sustain them. Ideally, the agency should be able to place a financial value on its holdings and should have a plan to pay for replacing every structure in the system.”

While the parks system in the City is largely “built out”, that does not suggest or imply that the City should cease investing in their park system. In fact, the Agency should be charged with inventorying the City's park and landscape system, identifying the necessary improvements to maintain their quality, including capital costs, a priority plan for these improvements, and a five-year plan for these improvements for consideration of the City Council.

At present, the level of capital expenditures for renewal and replacement of the City's parks represents 0.49% of the City's 2007-12 capital improvement program. The total

expenditures amount to \$1,256,000. This includes two projects: the Coliseum Park Renovation and Lake Merritt Algae Removal.

**Recommendation #59: The Facilities and Environment Department should develop a five-year plan for the renewal and rehabilitation of the City's parks.**

**(10) The Agency Should Develop An Asset Preservation Plan for the City's Buildings.**

In 2007, The Agency conducted a facility condition assessment in 2007 of 62 city-owned buildings to determine needed capital rehabilitation and renewal needs. The 2007 replacement value of these 62 city-owned buildings amounted to \$71.6 million. These 62 buildings included fire stations, recreation centers, libraries, and swimming pools.

The condition assessment identified priority building component replacement needs amounting to \$4.3 million. Some of these immediate needs can be deferred in the short-term, but others clearly cannot be deferred. These include such needs as presented below.

- Senior / Veteran's Center. The roof leaks frequently and needs to be replaced. The boiler equipment, controls, and piping in the center require constant maintenance and need replacement.
- Fire Station #27. The roof leaks frequently and needs to be replaced.
- Malonga Casquelourd Center. The asphalt roof has several ponds, and the top floor ceilings show evidence of significant water penetration. The roof needs to be replaced.
- Mosswood Recreation Center. The roof is bubbling, cracked, and worn, and needs to be replaced.
- Poplar Recreation Center. Each light fixture in the gym has been neglected causing damage. There is a perfect melted hole in the plastic under the emergency back-up lights, designed for temporary use that emits dangerous

levels of heat if used excessively. This is a fire hazard that needs immediate attention.

- San Antonio Recreation Center. The roof has many holes and leaks and needs to be replaced.

In addition, the Building Services Manager has identified \$11.6 million of deferred replacement requirements for recreation centers, libraries, swimming pools, fire stations, Agency maintenance service center buildings, Police buildings, and museums. These include such requirements as upgrading electrical panels, correcting dry rot, replacing the heater, controller, pumps, and meters at swimming pools, etc.

The Agency should develop a plan for addressing these deferred replacement requirements in consultation with departments and the City's Budget Office.

The Agency's own building maintenance and repair staff should address some of the repairs identified in the condition assessment. These include such tasks as patching exterior plaster walls, replacement of exterior windows, replacement of doors, patching of retaining walls, removal and replacement of sidewalks, etc. The Agency should review the replacement needs identified in the facility condition assessment and develop a plan of implementation for its own staff to address these needs that are within the capacity of its own staff.

Recommendation	Annual Cost Increase
Develop a plan for addressing these deferred replacement requirements.	\$3,200,000

**Recommendation #60:** The Agency should develop a plan for addressing these deferred replacement requirements identified in the facility condition assessment and by the Agency's Building Services Manager in consultation with departments and the City's Budget Office.

**Recommendation #61:** The Agency should review the replacement needs identified in the facility condition assessment and develop a plan of implementation for its own staff to address those needs that are within the capacity of its own staff.

## **8. FLEET ASSET MANAGEMENT**

The City's fleet has an approximate replacement value of \$84,549,810. This is a significant investment of taxpayer dollars. Every dollar invested in the City's fleet is a dollar that can't be used elsewhere to provide services to the public. It is important that the need for vehicles within the City's fleet meet usage guidelines and that no other alternatives exist to provide transportation for City employees in those situations where usage falls below those guidelines.

### **(1) The Extent Of Underutilized Equipment Within The City's Fleet Creates Significant Problems For The City's Replacement Policy.**

An appropriate replacement policy utilizes a combination of age and mileage to determine replacement eligibility. A vehicle that meets the established age parameter for its class or its established mileage parameter should become eligible for replacement. The Equipment Services Division would need to then conduct specific analysis to determine whether the vehicle, in fact, warranted replacement based upon other facts such as maintenance costs, downtime, etc.

This approach works well when there is a reasonably predictable utilization pattern. But it breaks down completely when no such pattern is discernable, as is the case with many classes of vehicles for the City's fleet. In these instances, much of the fleet has already crossed the replacement threshold on either an age or a mileage basis.

However, it is unlikely that the equipment that is underutilized warrants replacement based upon maintenance costs, downtime, etc. Yet the equipment will also face problems with obsolescence and the ease with which replacement parts can be obtained.

**(2) Without Reductions In The City's Fleet, The City Will Be Expending Significant Amounts Of Monies In Replacing Underutilized Equipment Over The Next Several Years.**

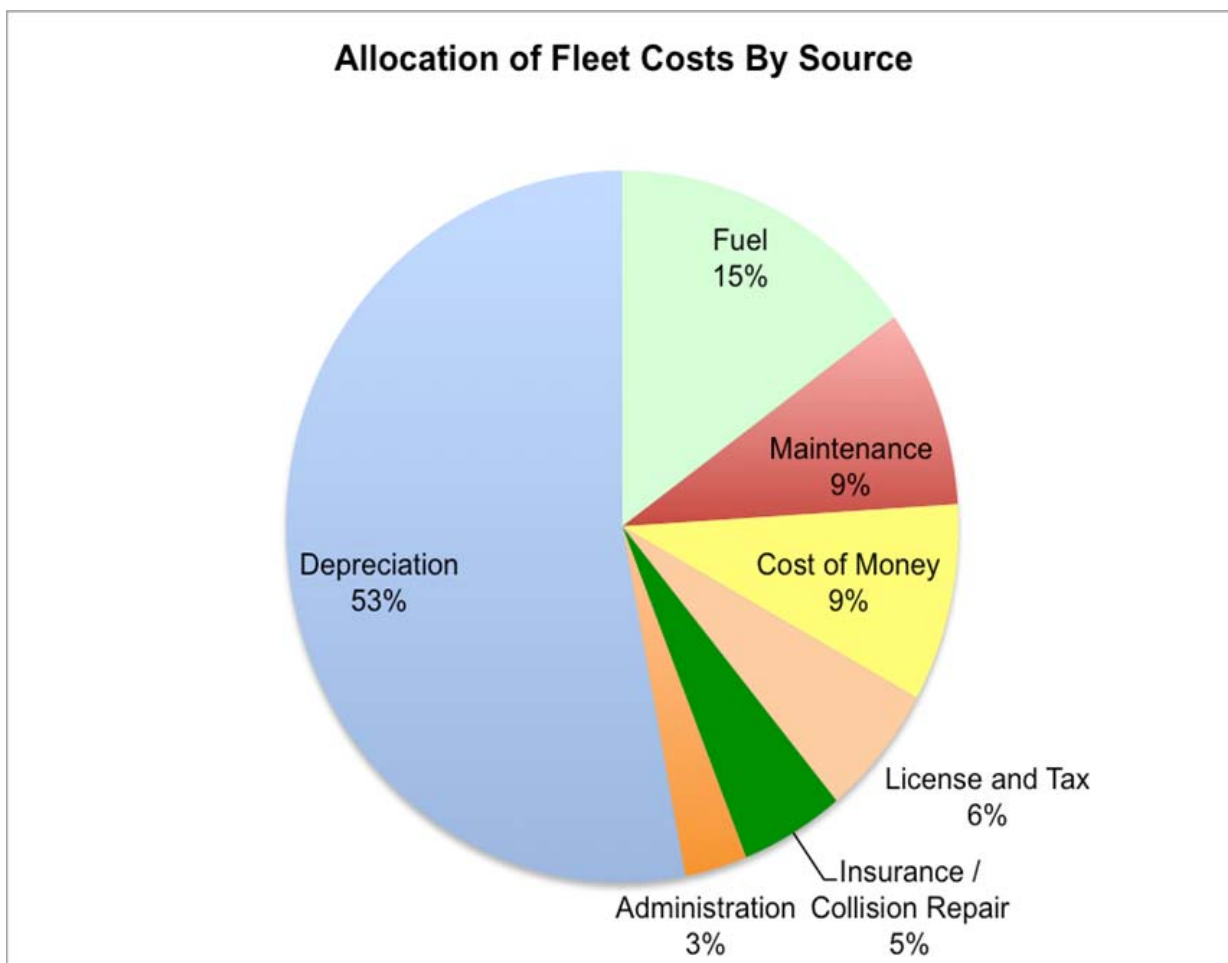
Overall, the City's fleet averages 8.9 years of age. The 25<sup>th</sup> percentile is 6.1 years, while the 75<sup>th</sup> percentile is 10.7 years.

The average age of the City's fleet exceeds that of many other fleets evaluated such as Scottsdale, Arizona and Charleston County, South Carolina. In the case of Charleston County, South Carolina, the average fleet age was 4.3 years. The average age of the fleet owned by the City of Scottsdale, Arizona was 4.0 years.

**(3) The City Should Reduce The Fleet By Approximately 210 Vehicles.**

The primary factors driving fleet related costs for any organization are the size and composition of the fleet. The more vehicles an organization owns, the higher the annual cost to that organization, because for each fleet asset there are costs associated with ownership and operation. As indicated in the following chart, depreciation is the top fleet related expense, representing over half of annual costs for the typical organization.





**Source: National Association of Fleet Administrators**

Even under-utilized vehicles consume fuel and maintenance resources each year. More importantly, these units also depreciate and lose value each and every day even if they are older and are fully amortized (i.e. paid for). Time and effort are also required to maintain appropriate licenses, tags, fleet inventory records, insurance, fuel cards, etc. The units may also take up valuable space at maintenance yards, parking lots and garages. As indicated in the previous chart, depreciation is the top fleet related expense representing over half of annual costs for the typical organization. Therefore, any serious effort to lower total fleet costs needs to start with an analysis of opportunities to reduce the size of the fleet.

Arbitrary utilization thresholds are not effective because they fail to take into consideration the significant differences that exist in vehicle missions and the usage patterns that result from these differences. This approach also inappropriately applies the same mileage thresholds to all departments within an organization. It is obviously invalid to expect a vehicle assigned to an organization that operates within a closely defined area (such as a Oakland) to meet the same level of use as a vehicle that travels state-wide.

There are two basic limitations of this arbitrary approach to managing fleet utilization. One is that it forces fleet managers into the role of "car czar" requiring them to approve vehicle purchases and demand return of units that fail to meet annual use thresholds. This approach inappropriately vests decision-making authority in fleet managers who usually lack the intimate knowledge of user agencies' operations and work methods needed to make sound vehicle acquisition and usage decisions. The other limitation is that this approach creates, due to this lack of operational knowledge, adversarial relationships between fleet managers and fleet users.

Fortunately, there are many strategies that organizations can employ to effectively improve fleet utilization. One of the keys to their success, however, is close collaboration between fleet users— who are best equipped to define how vehicles and equipment enable them to fulfill their missions – and fleet managers – who have technical expertise and access to jurisdiction-wide fleet data that individual user agencies lack. The other is using economic incentives to motivate fleet users to make sound vehicle acquisition and utilization decisions out of enlightened self-interest.

As a first step in the analysis of utilization, the MCG mapped the distribution of vehicles and equipment by class. This information helped the project team map the fleet and provides the basis for future activities such as creating effective motor pools. The data indicates that there are many units in the fleet that have low levels of utilization.

As a second step, the MCG compared average annual utilization data among similar classes of vehicles. Calculations were made to document months in service life-to-date, and estimated annual use based upon life-to-date mileage and the total life-to-date months in use. By estimating the average annual use of each vehicle, MCG was able to minimize variations in seasonal operations or various assignments that the vehicle may have had throughout its lifecycle.

As a third step, a statistical analysis of vehicle and equipment utilization by type was conducted. This process was used to identify potentially underutilized units based solely on usage data. The statistical median annual utilization was computed for each class of vehicles and equipment.

The scattergrams presented at the end of this chapter present five different classes of vehicles: vans, general-purpose sedans, dump trucks, police marked sedans, and pickup trucks (see Exhibit 5). Each diamond in the table represents an individual unit in each class. The horizontal and vertical lines represent the age of the vehicle and life-to-date mileage, respectively, for this class of vehicles. These charts consistently demonstrate that the oldest vehicles are not necessarily the ones with the highest mileage. While there are instances where this could be justified, the MCG would not

expect to find this much equipment with low life-to-date mileage in a fleet the size and composition of Oakland's.

More specific annual mileage data for each of the classes of vehicles contained in the scattergrams are presented at the end of this chapter (see Exhibit 6). This data indicates that the City's fleet, as a whole, is significantly underutilized. As noted earlier, the City's fleet has an approximate replacement value of \$84,549,810. Every dollar invested in the City's fleet is a dollar that can't be used elsewhere to provide services to the public. It is important that the need for vehicles within the City's fleet meet usage guidelines and that no other alternatives exist to provide transportation for City employees in those situations where usage falls below those guidelines. The analysis conducted by the MCG indicates that there are significant opportunities to reduce the number of vehicles within the City's fleet, that a significant number of vehicles do not meet usage guidelines, and that other alternatives exist or could be developed to provide transportation for City employees.

Specific conclusions regarding the underutilization of equipment within the five classes of equipment are presented below.

- **Dump Trucks.** There were 58 dump trucks included in the analysis of annual mileage. The median annual mileage for this class was 5,133 miles. This is about two-thirds of the annual mileage that the MCG would expect for this class of vehicles.
- **Police Marked Sedans.** There were 245 police marked sedans included in the analysis of annual mileage. The median annual mileage for this class was 12,600 miles. This is little more than one-half of the annual mileage the MCG would expect for this class of vehicles. The ability of the Police Department to reduce any of its police patrol fleet will be limited by the initiation of the fifty-seven (57) problem solving officers. In addition, some of the low annual mileage for these sedans could be attributable to delayed deployment.

- **General Purpose and Station Wagons.** There were 417 general purpose sedans included in the analysis of annual mileage. The median annual mileage for this class was 5,895 miles. This is little more than one-half of the annual mileage the MCG would expect for this class of vehicles.
- **Pickup Trucks.** There were 172 pickup trucks included in the analysis of annual mileage. The median annual mileage for this class was 6,818 miles. This is little more than one-half of the annual mileage the MCG would expect for this class of vehicles.
- **Vans.** There were 121 vans included in the analysis of annual mileage. The median annual mileage for this class was 4,238 miles. This is one-third the annual mileage that MCG would expect for this class of vehicles.

There is clearly a significant amount of underutilized equipment (equipment at or below the 25th percentile) in the fleet maintained by the Equipment Services Division. However, as noted previously, annual utilization is just the first analytical step in identifying underutilized vehicles.

A list of vehicles of low use and low necessity are presented in the second set of exhibits at the end of this chapter. These are vehicles whose annual mileage or utilization is at the 25th percentile or less for their class. There are a total of two hundred ten (210) low utilization vehicles or 12% of the fleet maintained by the Division. The MCG recommends, as the second step, that the Equipment Services Division analyze the recommendations developed by the MCG, discuss these recommendations with the affected departments, and develop recommendations for elimination of the equipment.

The estimated annual operating and capital cost savings resulting from the reduction of the fleet by two hundred ten (210) vehicles is presented in the table below. The net cost impact reflects the annual operating and maintenance cost savings (but not capital),

offset by the increase in mileage reimbursement for the use of personal vehicles on City business or the cost of increasing the number of “pool” equipment.

Recommendation	Annual Cost Savings	Recommendation	Annual Cost Increase
Eliminate two hundred ten (210) underutilized vehicles in the City fleet.	\$400,000	N / A	\$0

**Recommendation #62: The Agency should initially set an objective of eliminating two hundred ten (210) vehicles from the City’s fleet.**

**(4) Permanently Eliminate the Auto Allowance For Much of Categories Defined In the Auto Allowance Policy and Modify the Auto Allowance Policy.**

The City’s auto allowance policy provides an extensive amount of automobile allowances. This includes the categories of managers, supervisors, and non-managerial or non-supervisory employees as noted in the table below.

Category	Type Of Employee / Policy Maker
I	Mayor, Vice Mayor, City Council Members, City Administrator, City Attorney, and City Auditor
II	Designated associates in units UK1, UM1, U31, and U41 including City Manager’s executive staff, agency heads, department heads, assistant or deputy agency directors, division managers, and others as recommended by the Agency Director or the City Attorney or City Auditor for associates within their departments.
III	Includes associates whose work assignment requires the use of a personal vehicle on a regular basis. The approving authority is the Agency Director or the City Attorney or City Auditor for associates within their departments.
IV	Includes associates whose work assignment requires the use of a personal vehicle on an intermittent or occasional basis. The approving authority is the Agency Director or the City Attorney or City Auditor.

At the present time, the City is paying \$719,780 in auto allowance on an annual basis.

The City’s approach to providing an auto allowance to staff that are not members of the executive team or senior management (City Administrator’s Office, and department /

agency heads, division heads) is contrary to the approach utilized by other comparable cities such as the cities of San Jose, Sacramento, Fresno, Long Beach. These cities restrict auto allowance to senior management.

The City of Oakland is providing auto allowance to such positions as the following:

- Office Manager;
- Capital Improvement Project Coordinator;
- Information Technology Project Manager;
- Administrative Services Manager II
- Urban Economic Analyst III
- Engineer, Civil Supervisor (Office)
- Deputy City Attorney II, III, and IV;
- Engineer, Transportation;
- Real Estate Agent; and
- Librarian II.

The City of Oakland should eliminate the provision of an auto allowance to all of the positions that receive \$138 per month. This encompasses Categories III and IV noted in the previous table. If this staff needs a City vehicle, the staff should use a city-provided “pool” vehicle or be reimbursed for mileage. This would reduce the annual costs of auto allowance by \$221,180 annually.

At the same time, the City should evaluate the City staff in Category II that receive an auto allowance. This includes such City staff as the City Administrator’s executive staff, agency heads, department heads, assistant or deputy agency directors, division managers, and others as recommended by the Agency Director or the City Attorney or

City Auditor. Some of these positions do not appear as if they are members of the senior management team. This includes such examples of positions as the following:

- Temporary Contract Services Employee, PT in Major Projects;
- Engineer, Civil Supervisor (Office);
- Executive Assistant to Assistant City Administrator;
- ADA Projects Coordinator;
- Financial Analyst, Principal in the Accounting Administrative Unit, Treasury Operations Unit, Accounting and Administrative Unit, Budget and Finance Administrative Unit, and Treasury Payroll;
- Administrative Services Manager II in CEDA Agency Operations – Other, Fiscal Services, Marketing, Departmental Operations Unit, Human Resources, Public Works Agency - Fiscal Services, Budget and Finance Operations Unit, and Police Personnel;
- Assistant to the City Administrator for the Equal Access Unit;
- Special Counsel for the Advisory Unit;
- Assistant to the Director for the Office of Parks and Recreation – Administrative Services; and
- Project Manager II for Desktop Support, Residential Rent Arbitration, Council-At-Large Unit, City Manager Administration Unit, Project Planning and Coordination, Mayor – Administration Unit, and Employee Relations Unit.

The number of positions in Category II that receive auto allowances should be reduced by not less than 75%. This would reduce the annual costs of auto allowance by \$310,950 annually.

At the same time, the auto allowance policy should be amended. The policy allows offices of the Agency Director or Department Head to approve authorization for automobile allowance for associates in Category III and IV and the offices of the City Administrator, City Attorney, and City Auditor to approve authorization for automobile



allowance for associates in Category I and II. The City's Budget Office should make the final recommendation for approval to the City Administrator's Office after completing an analysis of the need. However, as noted previously, the MCG is recommending that all City staff in auto allowance policy Categories III and IV not be provided an auto allowance.

The City Auditor's Office previously evaluated auto allowances in the performance audit of the payroll and compensation practices. That report was issued in November 2007.

The fiscal impact of this change in the auto allowance policy is presented below.

Recommendation	Annual Cost Savings	Recommendation	Annual Cost Increase
Eliminate auto allowance for employees designated as Category III and IV in the auto allowance policy and significantly reduce the number of employees in Category II in the auto allowance policy that receive auto allowance.	\$532,000	N / A	\$0

**Recommendation #63: Eliminate the auto allowance for employees designated as Category III and IV in the auto allowance policy.**

**Recommendation #64: Significantly reduce the number of employees in Category II in the auto allowance policy who receive auto allowance.**

**Recommendation #65: The auto allowance policy should be amended to require that the City's Budget Office review proposals for employees to receive an auto allowance before consideration by the City Administrator's Office.**

**(5) The Equipment Services Division Should Establish A Heavy Equipment "Pool".**

It is clear that a significant portion of the City's heavy equipment is underutilized. A centralized heavy equipment "pool" needs to be established by the Equipment Services Division, and much of the heavy equipment assigned to a specific department or division in the City should be assigned to this "pool". Ultimately, some of the low

utilization equipment should be eliminated and replaced with the use of a heavy equipment pool.

The Fleet Focus FA fleet management information system contains the capability to provide “on-line” reservations for the heavy equipment pool. This would facilitate reservations by customers.

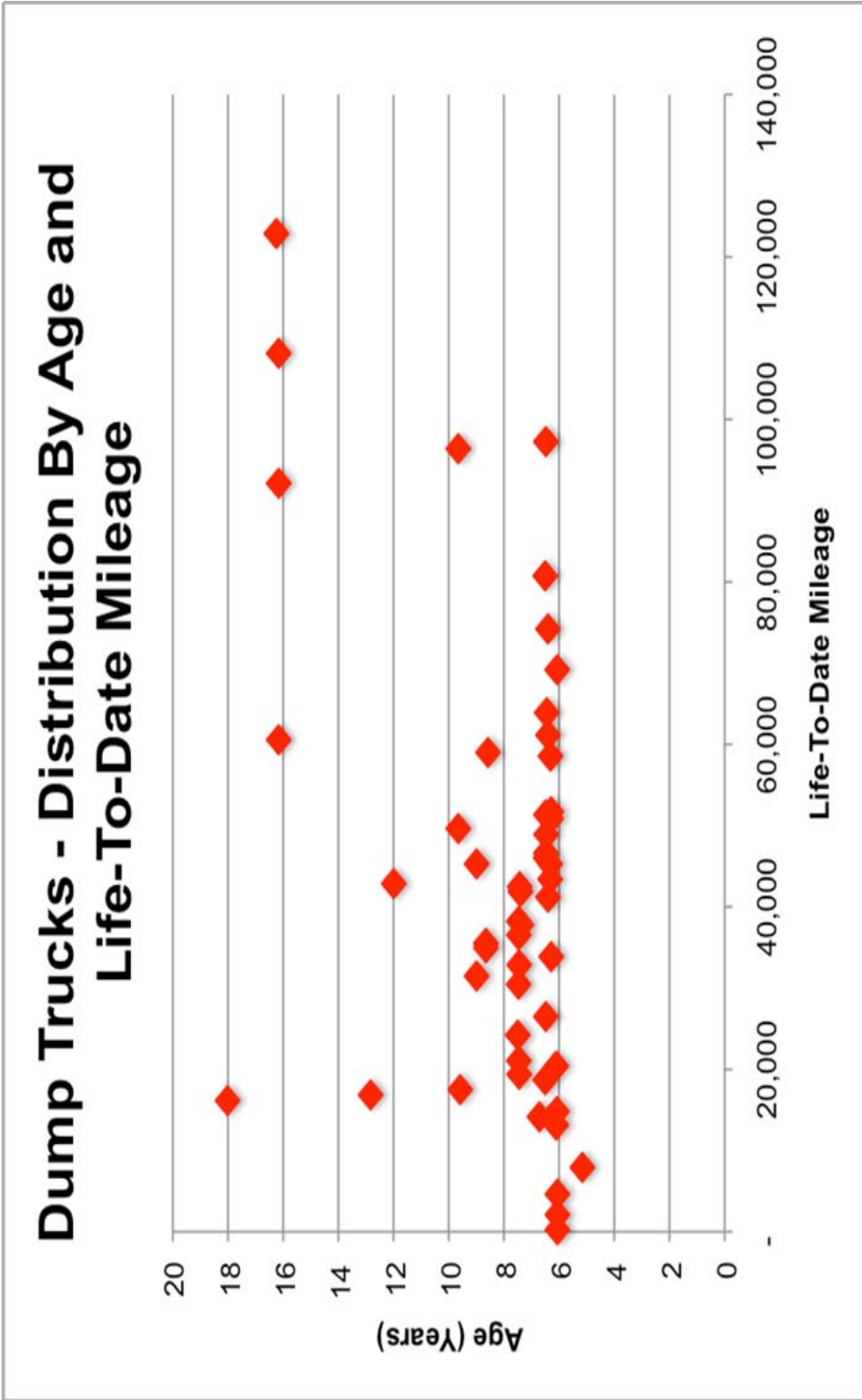
The “pool” heavy equipment should be charged out using the same approach as a rental agency. The “pool” heavy equipment should be based at the Equipment Services Division facility at Hegenberger Road.

**Recommendation #66: Establish a heavy equipment “pool”.**

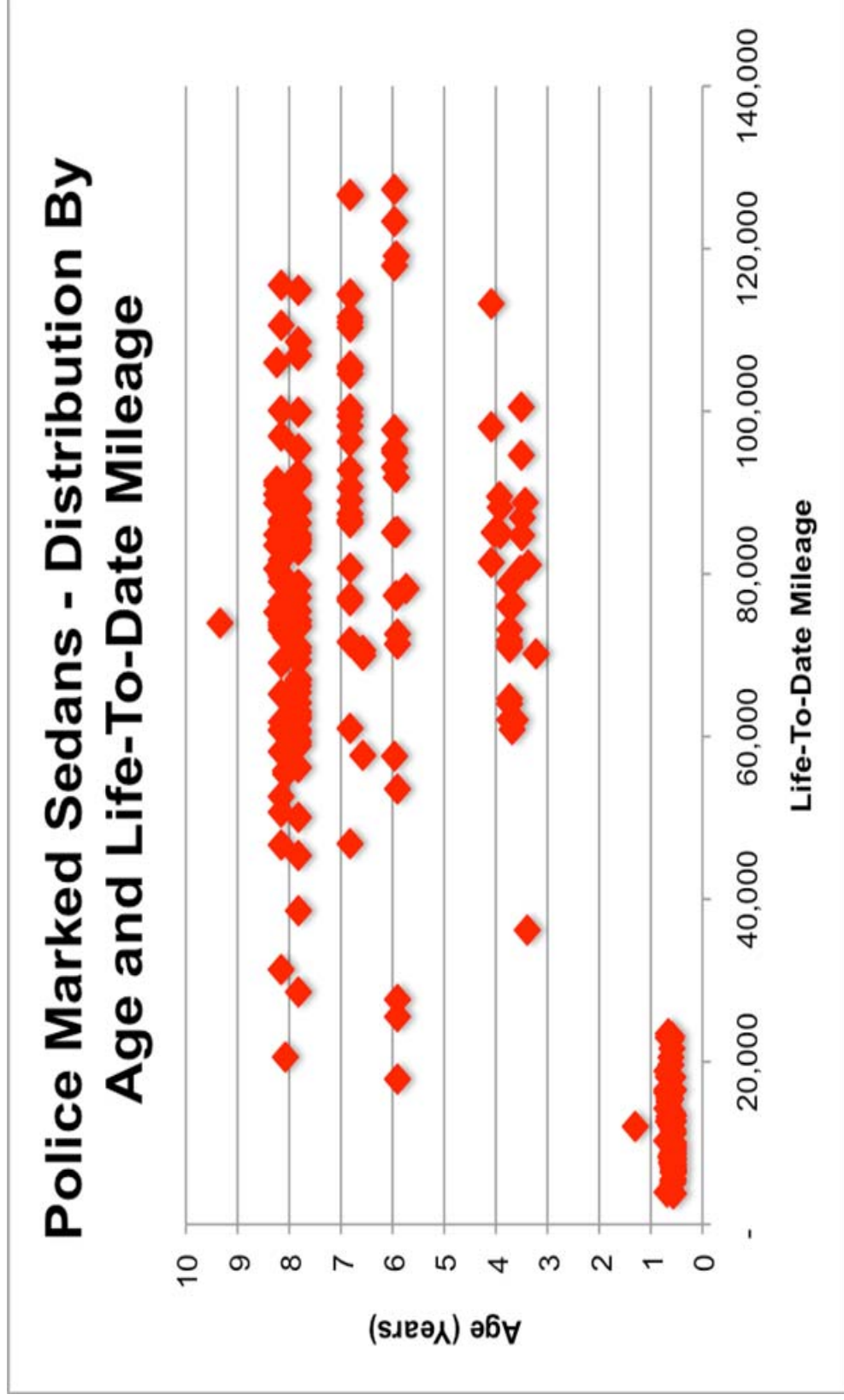
**Recommendation #67: The Equipment Services Division should manage the “pool” of heavy equipment.**

Exhibit 5 (1)

Life-To-Date Mileage and Age of  
Selected Classes of Vehicles



## Exhibit 5 (2)



## Exhibit 5 (3)

## General Purpose Sedans - Distribution By Age and Life-To-Date Mileage

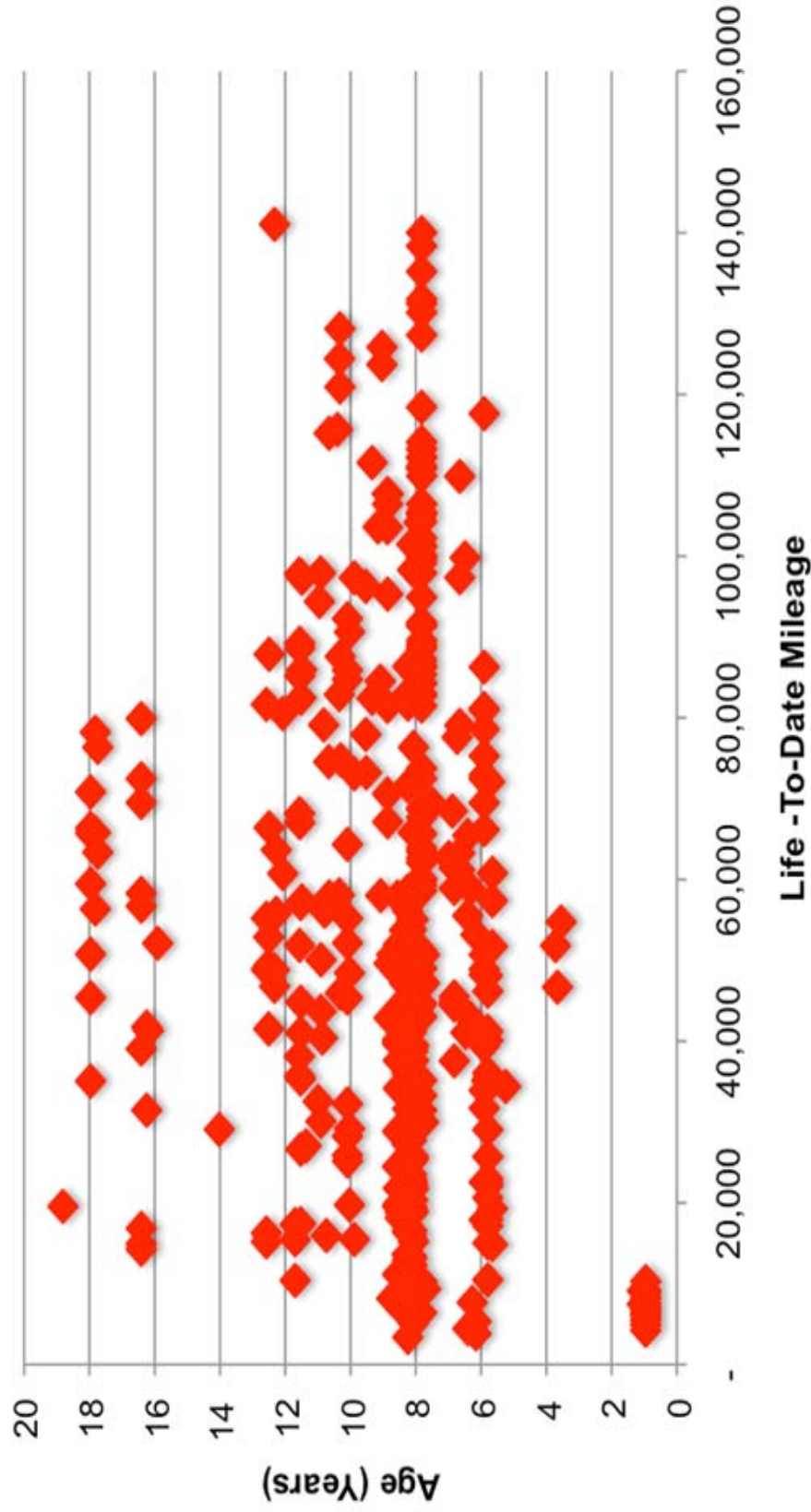


Exhibit 5 (4)

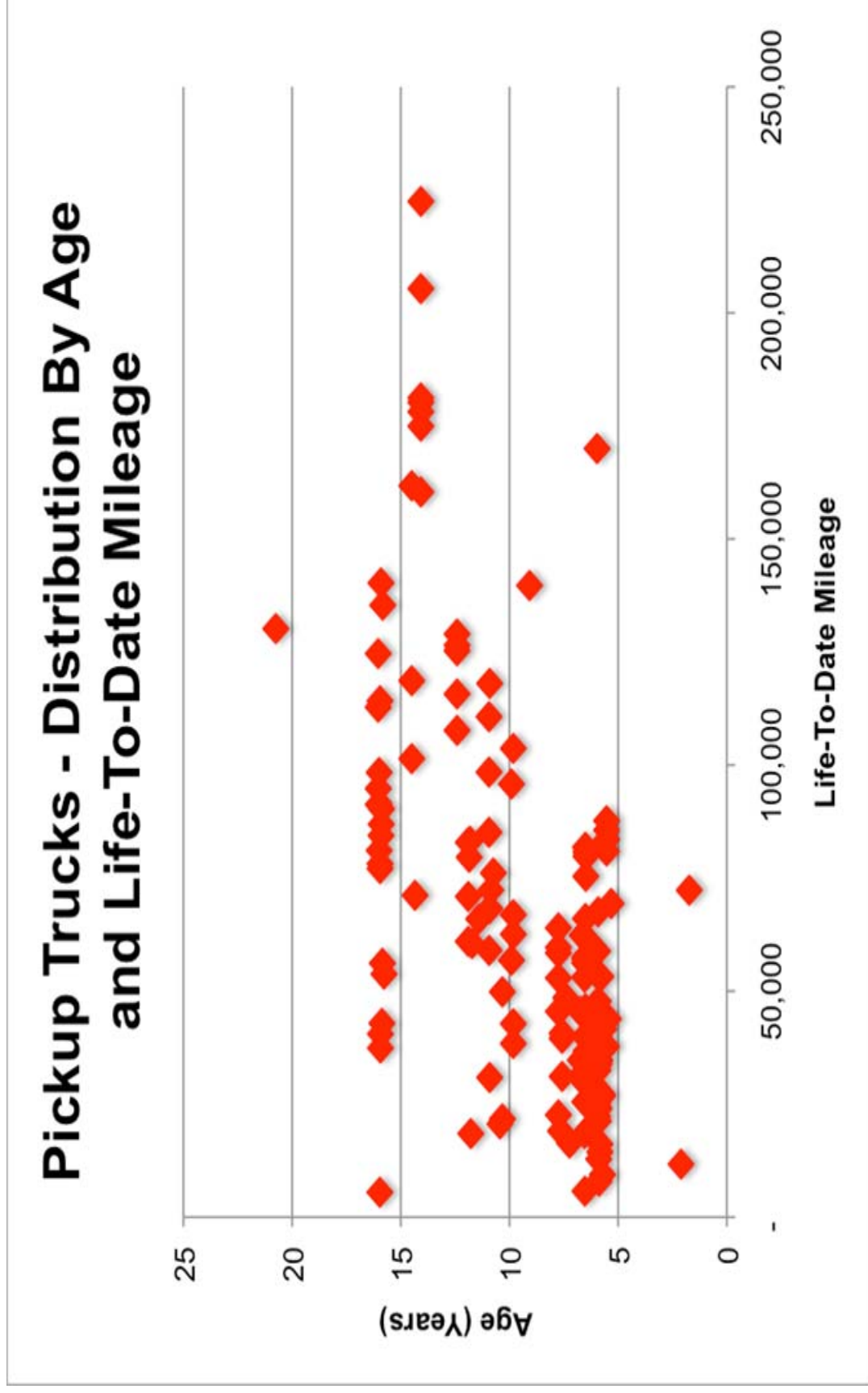
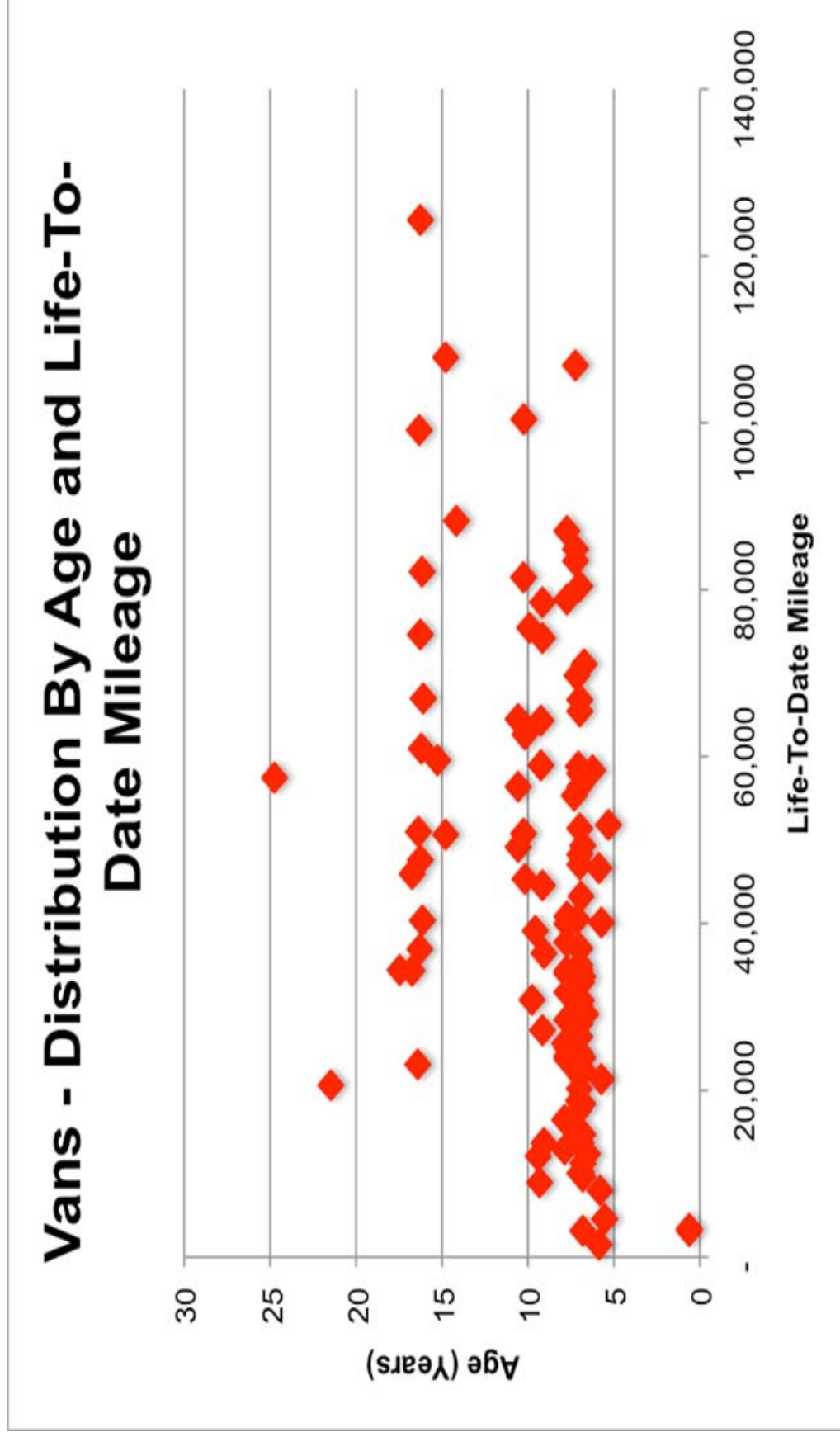


Exhibit 5 (5)



## Exhibit 6 (1)

**List of Equipment in the City's Fleet Whose  
Annual Mileage is 25% of the Average for the Class**

Equipment Number	Department Name	Maintenance Class	Life-to-Date Mileage	Average Annual Mileage	Class Description
4305	30541: PWA-EQUIPMENT SERVICES	1532	2,096	346	DUMP TRUCK 4YD CNG
4307	30672: PWA-SANITATION MAINT-KOCB	1532	4,633	764	DUMP TRUCK 4YD
4037	30532: PWA-DRAINAGE	4423	16,151	896	DUMP TRUCK 4YD
4511	30541: PWA-EQUIPMENT SERVICES	2712	16,847	1,313	DUMP TRUCK LT 4X2 1T
4302	30652: PWA - PARK SERVICES	6710T	7,923	1,537	DUMP TRUCK 4YD CNG
4987	30522: PWA - ELECTRICAL MAINTENANCE	1348M	17,501	1,826	DUMP TRUCK 3YD
4274	30533: PWA-SANITARY SEWER MAINT	2712	14,154	2,109	DUMP TRUCK 6X2 3YD
4301	30534: PWA-STREETS AND SIDEWALKS	6710T	13,142	2,153	DUMP TRUCK 4YD
4304	30652: PWA - PARK SERVICES	1532	14,808	2,436	DUMP TRUCK 4YD CNG
4156	30672: PWA-SANITATION MAINT-KOCB	6775	19,389	2,604	DUMP TRUCK 14YD
4152	30672: PWA-SANITATION MAINT-KOCB	8712	21,049	2,821	DUMP TRUCK 14YD
4241	30652: PWA - PARK SERVICES	2712	18,702	2,875	DUMP TRUCK X-CAB
4158	30534: PWA-STREETS AND SIDEWALKS	4423	24,211	3,229	DUMP TRUCK 14YD
4306	30534: PWA-STREETS AND SIDEWALKS	1532	20,402	3,342	DUMP TRUCK 4YD
1969	101110: OPD - POLICE PLANNING	1348U	20,579	2,549	MARKED POLICE
1439	101110: OPD - POLICE PLANNING	1348M	17,868	3,026	MARKED POLICE
1932	101110: OPD - POLICE PLANNING	1648	28,581	3,654	MARKED POLICE
1087	101110: OPD - POLICE PLANNING	1348M	31,337	3,842	MARKED POLICE
1441	101110: OPD - POLICE PLANNING	1348M	25,542	4,326	MARKED POLICE
1442	101110: OPD - POLICE PLANNING	1348M	27,665	4,686	MARKED POLICE
1058	101110: OPD - POLICE PLANNING	1418	38,582	4,933	MARKED POLICE
1079	101110: OPD - POLICE PLANNING	1348M	46,670	5,722	MARKED POLICE
1704	101110: OPD - POLICE PLANNING	1348M	3,971	5,775	MARKED POLICE
1148	101110: OPD - POLICE PLANNING	1348U	45,356	5,799	MARKED POLICE
1088	101110: OPD - POLICE PLANNING	1348M	50,707	6,217	MARKED POLICE
1902	101110: OPD - POLICE PLANNING	1348M	50,064	6,400	MARKED POLICE
1045	101110: OPD - POLICE PLANNING	1348T	52,625	6,452	MARKED POLICE
1762	101110: OPD - POLICE PLANNING	1348M	3,846	6,717	MARKED POLICE
1755	101110: OPD - POLICE PLANNING	1348M	3,776	6,723	MARKED POLICE



## Exhibit 6 (2)

Equipment Number	Department Name	Maintenance Class	Life-to-Date Mileage	Average Annual Mileage	Class Description
1917	101110: OPD - POLICE PLANNING	1348M	55,401	6,864	MARKED POLICE
1248	101110: OPD - POLICE PLANNING	1348U	46,827	6,864	MARKED POLICE
1731	101110: OPD - POLICE PLANNING	1348M	4,261	6,912	MARKED POLICE
1089	101110: OPD - POLICE PLANNING	2410U	55,793	6,913	MARKED POLICE
1913	101110: OPD - POLICE PLANNING	1348M	58,155	7,130	MARKED POLICE
1901	101110: OPD - POLICE PLANNING	1348M	56,191	7,184	MARKED POLICE
1081	101110: OPD - POLICE PLANNING	1348M	58,030	7,190	MARKED POLICE
1090	101110: OPD - POLICE PLANNING	1322U	60,766	7,450	MARKED POLICE
1924	101110: OPD - POLICE PLANNING	1348M	58,889	7,529	MARKED POLICE
1918	101110: OPD - POLICE PLANNING	1348M	61,785	7,575	MARKED POLICE
1933	101110: OPD - POLICE PLANNING	1648U	59,385	7,592	MARKED POLICE K9
1936	101110: OPD - POLICE PLANNING	1348U	60,398	7,722	MARKED POLICE K9
1106	101110: OPD - POLICE PLANNING	1348M	60,790	7,772	MARKED POLICE
1846	101110: OPD - POLICE PLANNING	1324U	73,958	7,919	MARKED POLICE
1929	101110: OPD - POLICE PLANNING	1348M	62,135	7,944	MARKED POLICE K9
1927	101110: OPD - POLICE PLANNING	1348M	62,340	7,970	MARKED POLICE
1051	101110: OPD - POLICE PLANNING	1418	65,226	7,997	MARKED POLICE
1905	101110: OPD - POLICE PLANNING	1348M	62,708	8,017	MARKED POLICE
1911	101110: OPD - POLICE PLANNING	1348M	64,859	8,036	MARKED POLICE
1907	101110: OPD - POLICE PLANNING	1348M	63,070	8,063	MARKED POLICE
1909	101110: OPD - POLICE PLANNING	1348M	64,160	8,203	MARKED POLICE
1912	101110: OPD - POLICE PLANNING	1348M	65,438	8,366	MARKED POLICE
1084	101110: OPD - POLICE PLANNING	1348M	69,066	8,468	MARKED POLICE
1928	101110: OPD - POLICE PLANNING	1348M	66,298	8,476	MARKED POLICE
1109	101110: OPD - POLICE PLANNING	1348M	66,932	8,557	MARKED POLICE
1137	101110: OPD - POLICE PLANNING	1348U	67,100	8,578	MARKED POLICE
1255	101110: OPD - POLICE PLANNING	1348U	57,689	8,774	MARKED POLICE
1143	101110: OPD - POLICE PLANNING	1348M	69,334	8,864	MARKED POLICE
1740	101110: OPD - POLICE PLANNING	1348U	5,102	8,910	MARKED POLICE
1242	101110: OPD - POLICE PLANNING	1348M	61,005	8,943	MARKED POLICE
1921	101110: OPD - POLICE PLANNING	1348M	72,264	8,953	MARKED POLICE
1903	101110: OPD - POLICE PLANNING	1348M	73,150	8,969	MARKED POLICE
1103	101110: OPD - POLICE PLANNING	1348M	70,398	9,000	MARKED POLICE
1035	101110: OPD - POLICE PLANNING	1348M	73,660	9,031	MARKED POLICE

**Exhibit 6 (3)**

<b>Equipment Number</b>	<b>Department Name</b>	<b>Maintenance Class</b>	<b>Life-to-Date Mileage</b>	<b>Average Annual Mileage</b>	<b>Class Description</b>
1436	101110: OPD - POLICE PLANNING	1348M	53,547	9,069	MARKED POLICE
1922	101110: OPD - POLICE PLANNING	1348M	71,013	9,079	MARKED POLICE
1908	101110: OPD - POLICE PLANNING	1348M	74,092	9,084	MARKED POLICE
1034	101110: OPD - POLICE PLANNING	1348M	75,315	9,139	MARKED POLICE
1717	101110: OPD - POLICE PLANNING	1348M	12,040	9,252	MARKED POLICE
1085	101110: OPD - POLICE PLANNING	1348M	76,565	9,387	MARKED POLICE
1140	101110: OPD - POLICE PLANNING	1348U	73,462	9,392	MARKED POLICE
1136	101110: OPD - POLICE PLANNING	1348M	73,614	9,411	MARKED POLICE
1934	101110: OPD - POLICE PLANNING	1348U	73,654	9,416	MARKED POLICE K9
1145	101110: OPD - POLICE PLANNING	1348U	74,248	9,492	MARKED POLICE
1923	101110: OPD - POLICE PLANNING	1348M	76,736	9,507	MARKED POLICE
1738	101110: OPD - POLICE PLANNING	1348U	5,477	9,520	MARKED POLICE
1761	101110: OPD - POLICE PLANNING	1348M	5,462	9,539	MARKED POLICE
1900	101110: OPD - POLICE PLANNING	1348M	75,434	9,644	MARKED POLICE
1414	101110: OPD - POLICE PLANNING	1348M	57,586	9,659	MARKED POLICE
1910	101110: OPD - POLICE PLANNING	1348M	79,050	9,692	MARKED POLICE
1082	101110: OPD - POLICE PLANNING	1348M	79,752	9,778	MARKED POLICE
1019	101110: OPD - POLICE PLANNING	1348T	80,629	9,784	MARKED POLICE
1083	101110: OPD - POLICE PLANNING	1348M	79,982	9,806	MARKED POLICE
1748	101110: OPD - POLICE PLANNING	1348M	5,521	9,830	MARKED POLICE
1931	101110: OPD - POLICE PLANNING	1348M	77,074	9,854	MARKED POLICE K9
1086	101110: OPD - POLICE PLANNING	1348M	81,723	10,020	MARKED POLICE
1129	101110: OPD - POLICE PLANNING	1348T	78,712	10,063	MARKED POLICE
1033	101110: OPD - POLICE PLANNING	1348M	83,512	10,134	MARKED POLICE
1022	101110: OPD - POLICE PLANNING	1348M	84,842	10,295	MARKED POLICE
1038	101110: OPD - POLICE PLANNING	1348M	83,992	10,406	MARKED POLICE
1916	101110: OPD - POLICE PLANNING	1348M	85,003	10,422	MARKED POLICE
1030	101110: OPD - POLICE PLANNING	1348M	85,483	10,481	MARKED POLICE
1206	101110: OPD - POLICE PLANNING	1348M	71,651	10,503	MARKED POLICE
1904	101110: OPD - POLICE PLANNING	1348M	86,237	10,573	MARKED POLICE
1110	101110: OPD - POLICE PLANNING	1348T	82,916	10,600	MARKED POLICE
1078	101110: OPD - POLICE PLANNING	1418M	86,567	10,614	MARKED POLICE
1253	101110: OPD - POLICE PLANNING	1348M	69,976	10,642	MARKED POLICE
1440	101110: OPD - POLICE PLANNING	1348M	36,190	10,670	MARKED POLICE

**Exhibit 6 (4)**

<b>Equipment Number</b>	<b>Department Name</b>	<b>Maintenance Class</b>	<b>Life-to-Date Mileage</b>	<b>Average Annual Mileage</b>	<b>Class Description</b>
1134	101110: OPD - POLICE PLANNING	1348M	83,749	10,707	MARKED POLICE
1254	101110: OPD - POLICE PLANNING	1348U	70,598	10,737	MARKED POLICE
1073	101110: OPD - POLICE PLANNING	1424	84,175	10,761	MARKED POLICE
1021	101110: OPD - POLICE PLANNING	1348T	88,697	10,763	MARKED POLICE
1131	101110: OPD - POLICE PLANNING	1348T	84,337	10,782	MARKED POLICE
1003	101110: OPD - POLICE PLANNING	1348T	88,080	10,799	MARKED POLICE
1124	101110: OPD - POLICE PLANNING	1348M	84,780	10,839	MARKED POLICE
1032	101110: OPD - POLICE PLANNING	1348M	89,762	10,892	MARKED POLICE
1004	101110: OPD - POLICE PLANNING	1348M	89,799	10,896	MARKED POLICE
1031	101110: OPD - POLICE PLANNING	1348M	89,334	10,953	MARKED POLICE
1046	101110: OPD - POLICE PLANNING	1418	89,886	11,021	MARKED POLICE
1135	101110: OPD - POLICE PLANNING	1348M	86,223	11,023	MARKED POLICE
1121	101110: OPD - POLICE PLANNING	1348M	86,264	11,028	MARKED POLICE
1015	101110: OPD - POLICE PLANNING	1348M	90,931	11,034	MARKED POLICE
1010	101110: OPD - POLICE PLANNING	1348T	91,395	11,090	MARKED POLICE
1760	101110: OPD - POLICE PLANNING	1348M	6,430	11,229	MARKED POLICE
1237	101110: OPD - POLICE PLANNING	1348M	76,692	11,242	MARKED POLICE
1108	101110: OPD - POLICE PLANNING	1348M	87,984	11,248	MARKED POLICE
1059	--: NOT ASSIGNED	1348M	88,129	11,267	MARKED POLICE
1204	101110: OPD - POLICE PLANNING	1348M	77,076	11,298	MARKED POLICE
1757	101110: OPD - POLICE PLANNING	1348M	6,346	11,299	MARKED POLICE
1062	101110: OPD - POLICE PLANNING	1418	88,608	11,328	MARKED POLICE
1754	101110: OPD - POLICE PLANNING	1348M	6,548	11,659	MARKED POLICE
1104	101110: OPD - POLICE PLANNING	1348M	91,401	11,685	MARKED POLICE
1138	101110: OPD - POLICE PLANNING	1348M	91,508	11,699	MARKED POLICE
1128	101110: OPD - POLICE PLANNING	1348M	91,581	11,708	MARKED POLICE
1127	101110: OPD - POLICE PLANNING	1348M	91,759	11,731	MARKED POLICE
1125	101110: OPD - POLICE PLANNING	1348T	92,126	11,778	MARKED POLICE
1122	101110: OPD - POLICE PLANNING	1348T	92,306	11,801	MARKED POLICE
1244	101110: OPD - POLICE PLANNING	1348M	80,725	11,833	MARKED POLICE
1036	101110: OPD - POLICE PLANNING	1348M	96,956	11,887	MARKED POLICE
1443	101110: OPD - POLICE PLANNING	1338U	71,362	12,087	MARKED POLICE
1751	101110: OPD - POLICE PLANNING	1348M	6,807	12,120	MARKED POLICE

## Exhibit 6 (5)

Equipment Number	Department Name	Maintenance Class	Life-to-Date Mileage	Average Annual Mileage	Class Description
1130	101110: OPD – POLICE PLANNING	1348T	95,373	12,193	MARKED POLICE
1037	101110: OPD – POLICE PLANNING	1348M	100,098	12,273	MARKED POLICE
1438	101110: OPD – POLICE PLANNING	1348M	72,606	12,298	MARKED POLICE
1788	101110: OPD – POLICE PLANNING	1648	6,948	12,371	MARKED POLICE
1767	101110: OPD – POLICE PLANNING	1348Y	7,137	12,464	MARKED POLICE
1759	101110: OPD – POLICE PLANNING	1348M	7,220	12,549	MARKED POLICE
1705	101110: OPD – POLICE PLANNING	1348M	7,526	12,601	MARKED POLICE
4183	20816: OFD – FIRE-SUPPORT & SERVICES	2514	5,506	345	PICKUP 4X2 1T W/BODY U/BODY
4968	88343: CEDA-RIGHT OF WAY MANAGEMENT	2712	5,757	882	PICKUP EXT CAB
4340	30655: PWA FACILITIES	7890	7,960	1,355	PICKUP W/SERVICE BODY
4340	30655: PWA FACILITIES	7890	7,960	1,355	PICKUP W/SERVICE BODY
4618	08242: CENTRAL STORES DELIVERY	1611	18,488	1,570	PICKUP ¾T
4350	30541: PWA-EQUIPMENT SERVICES	2514	9,426	1,648	PICKUP W/SERV BODY
4703	101110: OPD – POLICE PLANNING	1611	20,627	1,976	PICKUP 4X2 ¾T PNDBDY
243	20816: OFD – FIRE-SUPPORT & SERVICES	2512	21,740	2,105	PICKUP ½T 4X4 PATROL
4331	#N/A	#N/A	12,834	2,178	PICKUP
4331	#N/A	#N/A	12,834	2,178	PICKUP
4067	101110: OPD – POLICE PLANNING	4423	16,382	2,264	PICKUP 4X2 1T C/CAB MOUNTED PATROL
4194	30541: PWA-EQUIPMENT SERVICES	1418	37,419	2,348	PICKUP 4X2 1T LIFTGATE
4332	30634: PWA-PLANT OPERATION	2713	14,419	2,470	PICKUP
4114	30681: PWA-ENVIRON SVC/RECYCLING	2411	19,068	2,492	PICKUP ½T S/CAB W/SHL
4195	30541: PWA-EQUIPMENT SERVICES	2712	40,525	2,543	PICKUP 4X2 1T LIFTGATE
4196	30541: PWA-EQUIPMENT SERVICES	2423	42,871	2,702	PICKUP 4X2 1T LIFTGATE
4339	30658: PWA – BLDG MAINTENANCE	2514	16,158	2,768	PICKUP W/U BODY
4962	30672: PWA-SANITATION MAINT-KOCB	2712	18,507	2,828	PICKUP EXT CAB
4729	88343: CEDA-RIGHT OF WAY MANAGEMENT	6775	30,894	2,832	PICKUP 4X2 ¾T
4729	88343: CEDA-RIGHT OF WAY MANAGEMENT	6775	30,894	2,832	PICKUP 4X2 ¾T

**Exhibit 6 (6)**

<b>Equipment Number</b>	<b>Department Name</b>	<b>Maintenance Class</b>	<b>Life-to-Date Mileage</b>	<b>Average Annual Mileage</b>	<b>Class Description</b>
4150	101110: OPD – POLICE PLANNING	8712	22,621	2,920	PICKUP 4X2 W/BODY ¾T
4199	20816: OFD – FIRE-SUPPORT SERVICES	2423	53,766	3,409	PICKUP 4X4 ½T 4 WHEEL DRIVE
4197	30541: PWA-EQUIPMENT SERVICES	2423	56,155	3,544	PICKUP 4X2 1T LIFTGATE
4330	78231: HUMAN SVCS-HEADSTART	4514	21,275	3,597	PICKUP
4330	78231: HUMAN SVCS-HEADSTART	4514	21,275	3,597	PICKUP
4313	101110: OPD – POLICE PLANNING	1532	22,332	3,758	PICKUP
4961	30532: PWA-DRAINAGE	2712	25,531	3,906	PICKUP EXT CAB
4998	30658: PWA – BLDG MAINTENANCE	1348M	38,405	3,909	PICKUP 4X2 1T TRUCK
4335	30655: PWA FACILITIES	2713	24,028	4,091	PICKUP W/SERVICE BODY
4109	30652: PWA – PARK SERVICES	6776	31,126	4,107	PICKUP 4X2 S/CAB ¾T U/BODY
4109	30652: PWA – PARK SERVICES	6776	31,126	4,107	PICKUP 4X2 S/CAB ¾T U/BODY
4320	30672: PWA-SANITATION MAINT-KOCB	1532	24,944	4,198	PICKUP
4996	30652: PWA – PARK SERVICES	1348M	42,786	4,355	PICKUP 4X2 1T C/CAB
4966	30672: PWA-SANITATION MAINT-KOCB	2712	29,755	4,546	PICKUP EXT CAB
4351	30541: PWA-EQUIPMENT SERVICES	2514	26,784	4,682	PICKUP W/SERV BODY
4349	30672: PWA-SANITATION MAINT-KOCB	2514	27,244	4,749	PICKUP W/PAINT BODY
4325	30672: PWA-SANITATION MAINT-KOCB	1534	28,443	4,786	PICKUP
242	20816: OFD – FIRE-SUPPORT SERVICES	1521	49,838	4,826	PICKUP ½T 4X4 PATROL
4234	30263: PWA-TRAFFIC MAINTENANCE	2712	77,094	4,832	PICKUP 4X2 S/CAB ¾T U/BODY
4188	30263: PWA-TRAFFIC MAINTENANCE	2514	78,181	4,901	PICKUP 4X2 ¾T CONE TRUCK
4967	30534: PWA-STREETS AND SIDEWALKS	2712	32,283	4,932	PICKUP EXT CAB
4455	30535: PWA-TREE SERVICES	2514	71,176	4,962	PICKUP DUMP 4X2 ¾T S/CAB
4201	30535: PWA-TREE SERVICES	6710T	81,108	5,071	PICKUP 4X2 C/CAB W/BODY
4201	30535: PWA-TREE SERVICES	6710T	81,108	5,071	PICKUP 4X2 C/CAB W/BODY
3153	30541: PWA-EQUIPMENT SERVICES	1322	3,379	410	SEDAN 4DR
3203	101110: OPD – POLICE PLANNING	1322	3,812	619	4DR POLICE

**Exhibit 6 (7)**

<b>Equipment Number</b>	<b>Department Name</b>	<b>Maintenance Class</b>	<b>Life-to-Date Mileage</b>	<b>Average Annual Mileage</b>	<b>Class Description</b>
3083	88481: CEDA-BUILDING SVC ADMIN	1333	5,101	632	WAGON 4D SE
3275	101110: OPD – POLICE PLANNING	1333	4,441	693	4DR POLICE
3143	30541: PWA-EQUIPMENT SERVICES	1322	6,015	729	SEDAN 4DR
3066	78231: HUMAN SVCS-HEADSTART	1333	6,418	821	WAGON 4D SE
3202	101110: OPD – POLICE PLANNING	1322	5,322	864	4DR POLICE
3282	08471: PARKING METER COLLECTION UNIT	1333	14,253	868	WAGON 4DR LX
3797	78231: HUMAN SVCS-HEADSTART	1333	10,404	890	WAGON 4DR LX
3283	46241: OIT RADIO SECTION UNIT	1333	14,942	910	WAGON 4DR LX
3164	78231: HUMAN SVCS-HEADSTART	1322	7,612	922	SEDAN 4DR
3065	78231: HUMAN SVCS-HEADSTART	1333	8,170	935	WAGON 4D SE
3284	08471: PARKING METER COLLECTION UNIT	1332	16,845	1,026	WAGON 4DR LX
3016	101110: OPD – POLICE PLANNING	1333	19,559	1,040	SEDAN 4DR WAGON POLICE
3680	78231: HUMAN SVCS-HEADSTART	1332	15,190	1,208	SEDAN 4DR
3197	101110: OPD – POLICE PLANNING	1322	9,342	1,213	WAGON 4D SE
3201	30681: PWA-ENVIRON SVC/RECYCLING	1322	7,679	1,224	SEDAN LX NGV
3166	30681: PWA-ENVIRON SVC/RECYCLING	1322	10,197	1,236	SEDAN 4DR
3677	78231: HUMAN SVCS-HEADSTART	1332	16,252	1,292	SEDAN 4DR
3036	88481: CEDA-BUILDING SVC ADMIN	1333	11,143	1,302	WAGON 4D SE
3071	78231: HUMAN SVCS-HEADSTART	1333	10,255	1,313	WAGON 4D SE
3798	78231: HUMAN SVCS-HEADSTART	1333	15,446	1,321	WAGON 4DR LX
3163	78231: HUMAN SVCS-HEADSTART	1322	11,138	1,350	SEDAN 4DR
3796	78231: HUMAN SVCS-HEADSTART	1333	17,321	1,481	WAGON 4DR LX
1862	101110: OPD – POLICE PLANNING	1332U	15,954	1,486	SEDAN 4DR LX
3712	78241: HUMAN SVCS-YEAR ROUND LUNCH PR	1332	17,414	1,510	SEDAN LX 4D CNG
3085	88481: CEDA-BUILDING SVC ADMIN	1333	12,339	1,519	WAGON 4D SE
3819	88481: CEDA-BUILDING SVC ADMIN	1322	15,476	1,566	WAGON 4DR LX
3146	30533: PWA-SANITARY SEWER MAINT	1322	12,945	1,569	SEDAN 4DR
3173	88481: CEDA-BUILDING SVC ADMIN	1322	13,121	1,614	SEDAN 4DR
3182	88481: CEDA-BUILDING SVC ADMIN	1322	13,385	1,645	SEDAN 4DR
3152	30541: PWA-EQUIPMENT SERVICES	1322	13,609	1,646	SEDAN 4DR

## Exhibit 6 (8)

Equipment Number	Department Name	Maintenance Class	Life-to-Date Mileage	Average Annual Mileage	Class Description
3204	62211: MUSEUM SERVICES	1322	10,479	1,808	SEDAN GX 4DR NGV
3075	30534: PWA-STREETS AND SIDEWALKS	1333	15,200	1,883	WAGON 4D SE
3280	78231: HUMAN SVCS-HEADSTART	1333	31,468	1,937	WAGON 4DR LX
1098	101110: OPD - POLICE PLANNING	1348M	35,067	1,952	SEDAN 4DR NUMI DONATED DARE
3180	08941: FMA-PARKING ENFORCEMENT	1322	15,957	1,961	SEDAN 4DR
3821	30541: PWA-EQUIPMENT SERVICES	4744	19,750	1,969	WAGON 4DR LX
3162	88481: CEDA-BUILDING SVC ADMIN	1322	16,354	1,983	SEDAN 4DR
3150	88229: CITY PLANNING-OTHER	1322	16,549	2,005	SEDAN 4DR
3187	88331: CEDA- PROJ DELIVERY ADMIN	1338U	16,605	2,045	SEDAN 4DR
3499	78231: HUMAN SVCS-HEADSTART	1332	29,081	2,074	WAGON 4DR LX
3042	08471: PARKING METER COLLECTION UNIT	1333	18,149	2,140	WAGON 4D SE
3040	08471: PARKING METER COLLECTION UNIT	1333	18,896	2,228	WAGON 4D SE
3168	30541: PWA-EQUIPMENT SERVICES	1322	18,572	2,247	SEDAN 4DR
3033	88481: CEDA-BUILDING SVC ADMIN	1333	19,577	2,287	WAGON 4D SE
3076	04111: CITY ATTORNEY-ADMIN	1333	18,675	2,300	WAGON 4D SE
3713	88331: CEDA- PROJ DELIVERY ADMIN	1332	26,625	2,309	SEDAN LX 4D CNG
3045	88481: CEDA-BUILDING SVC ADMIN	1333	19,878	2,329	WAGON 4D SE
3058	30541: PWA-EQUIPMENT SERVICES	1333	18,910	2,341	WAGON 4D SE
3178	08941: FMA-PARKING ENFORCEMENT	1322	19,052	2,341	SEDAN 4DR
3181	88481: CEDA-BUILDING SVC ADMIN	1322	19,042	2,342	SEDAN 4DR
3289	30541: PWA-EQUIPMENT SERVICES	1332	39,046	2,379	WAGON 4DR LX
3049	88481: CEDA-BUILDING SVC ADMIN	1333	19,862	2,380	WAGON 4D SE
3715	02611: CONTRACT COMPLIANCE UNIT	1333	27,057	2,381	SEDAN LX 4D CNG
3073	20816: OFD - FIRE-SUPPORT & SERVICES	1333	19,494	2,401	WAGON 4D SE
3052	08941: FMA-PARKING ENFORCEMENT	1333	20,081	2,406	WAGON 4D SE
3809	88331: CEDA- PROJ DELIVERY ADMIN	1333	25,170	2,494	WAGON 4DR LX
3077	75231: HUMAN SVCS-MULTIPURPOSE SENIOR	1333	20,354	2,513	WAGON 4D SE

## Exhibit 6 (9)

Equipment Number	Department Name	Maintenance Class	Life-to-Date Mileage	Average Annual Mileage	Class Description
1096	101110: OPD - POLICE PLANNING	1322U	45,392	2,527	SEDAN 4DR NUMI DONATED DARE
1277	101110: OPD - POLICE PLANNING	1648U	41,288	2,550	WAGON 4DR LX
3044	88481: CEDA-BUILDING SVC ADMIN	1333	21,808	2,555	WAGON 4D SE
3807	88331: CEDA- PROJ DELIVERY ADMIN	1333	25,879	2,563	WAGON 4DR LX
3281	78231: HUMAN SVCS-HEADSTART	1333	41,741	2,569	WAGON 4DR LX
1274	101110: OPD - POLICE PLANNING	1322	15,030	2,594	SEDAN GX 4DR NGV
73	30672: PWA-SANITATION MAINT-KOCB	1332	14,842	2,625	SEDAN 4DR
3165	88331: CEDA- PROJ DELIVERY ADMIN	1322	21,515	2,644	SEDAN 4DR
3054	30541: PWA-EQUIPMENT SERVICES	1333	21,747	2,694	WAGON 4D SE CLAY ST POOL
3151	08242: CENTRAL STORES DELIVERY	1322	22,591	2,738	SEDAN 4DR
3186	88331: CEDA- PROJ DELIVERY ADMIN	1322	22,316	2,743	SEDAN 4DR
3055	30541: PWA-EQUIPMENT SERVICES	1333	22,310	2,755	WAGON 4D SE CLAY ST POOL
1856	101110: OPD - POLICE PLANNING	1324U	30,082	2,758	SEDAN 4DR LX
3811	88481: CEDA-BUILDING SVC ADMIN	1322	28,223	2,795	WAGON 4DR LX
3064	46241: OIT RADIO SECTION UNIT	1333	22,802	2,808	4DSW OIT RADIO 3/01
3183	88481: CEDA-BUILDING SVC ADMIN	1322	22,889	2,815	SEDAN 4DR
1095	101110: OPD - POLICE PLANNING	1322U	50,773	2,826	SEDAN 4D LSI NUMI DONATION DARE
3039	88481: CEDA-BUILDING SVC ADMIN	1333	24,486	2,860	WAGON 4D SE
3176	88481: CEDA-BUILDING SVC ADMIN	1322	23,505	2,891	SEDAN 4DR
3818	88481: CEDA-BUILDING SVC ADMIN	1322	29,165	2,907	WAGON 4DR LX
1863	101110: OPD - POLICE PLANNING	1348U	32,555	2,962	SEDAN 4DR LX
3207	502110: LEA-PARKS & REC ADMIN	1332U	17,163	2,962	SEDAN GX 4DR NGV
1381	101110: OPD - POLICE PLANNING	1348U	17,903	3,032	UNMARKED POLICE
3705	30541: PWA-EQUIPMENT SERVICES	1332	35,330	3,063	SEDAN LX 4D CNG
3702	61121: LIBRARY	1332	35,708	3,088	SEDAN LX 4D CNG
3214	88481: CEDA-BUILDING SVC ADMIN	1322	17,945	3,097	SEDAN GX 4DR NGV
3056	30672: PWA-SANITATION MAINT-KOCB	1333	25,261	3,119	WAGON 4D SE CLAY ST POOL
3167	30541: PWA-EQUIPMENT SERVICES	1322	25,742	3,119	SEDAN 4DR



**Exhibit 6 (10)**

<b>Equipment Number</b>	<b>Department Name</b>	<b>Maintenance Class</b>	<b>Life-to-Date Mileage</b>	<b>Average Annual Mileage</b>	<b>Class Description</b>
3062	20816: OFD - FIRE-SUPPORT & SERVICES	1333	25,286	3,122	WAGON 4D SE
3063	20816: OFD - FIRE-SUPPORT & SERVICES	1333	25,355	3,131	4DSW OFD 11/00
3081	88481: CEDA-BUILDING SVC ADMIN	1333	25,469	3,152	WAGON 4D SE
3106	88332: CEDA CONST MGMT & MATL TESTIN	1332U	56,348	3,162	SEDAN 4D WAGON
3078	75231: HUMAN SVCS-MULTIPURPOSE SENIOR	1333	25,691	3,164	WAGON 4D SE
3060	30541: PWA-EQUIPMENT SERVICES	1333	25,761	3,188	4DSW
3802	30535: PWA-TREE SERVICES	1333	32,248	3,194	WAGON 4DR LX
3102	101110: OPD - POLICE PLANNING	1332U	52,112	3,276	SEDAN 4D WAGON POLICE
3698	30681: PWA-ENVIRON SVC/RECYCLING	1332	38,116	3,294	SEDAN 4DR WAGON
3154	88481: CEDA-BUILDING SVC ADMIN	1322	27,270	3,299	SEDAN 4DR
1092	101110: OPD - POLICE PLANNING	1322U	59,456	3,310	SEDAN 4D GSI NUMI DONATED DARE
1692	101110: OPD - POLICE PLANNING	1338U	41,523	3,320	SEDAN 4DR
3038	88481: CEDA-BUILDING SVC ADMIN	1333	28,847	3,369	WAGON 4D SE
3184	88481: CEDA-BUILDING SVC ADMIN	1322	27,725	3,407	SEDAN 4DR
75	20816: OFD - FIRE-SUPPORT & SERVICES	1332	19,285	3,410	STAFF CAR
3293	30541: PWA-EQUIPMENT SERVICES	1332	56,711	3,455	WAGON 4DR LX
3175	88481: CEDA-BUILDING SVC ADMIN	1322	28,292	3,477	SEDAN 4DR
3174	88331: CEDA- PROJ DELIVERY ADMIN	1322	28,860	3,547	SEDAN 4DR
3298	08940: PARKING ENFORCEMENT	1332	58,287	3,551	WAGON 4DR LX
4354	101110: OPD - POLICE PLANNING	2513	1,504	256	VAN HI-CUBE
1091	101110: OPD - POLICE PLANNING	1322U	3,152	463	VAN 15 PASSENGER VAN UNL
4355	101110: OPD - POLICE PLANNING	2513	4,574	826	VAN HI-CUBE
1794	101110: OPD - POLICE PLANNING	1648U	8,936	958	VAN HI CUBE POLICE HOSTAGE
221	20816: OFD - FIRE-SUPPORT & SERVICES	4424	20,600	960	VAN HAZARDOUS MATERIAL

**Exhibit 6 (11)**

<b>Equipment Number</b>	<b>Department Name</b>	<b>Maintenance Class</b>	<b>Life-to-Date Mileage</b>	<b>Average Annual Mileage</b>	<b>Class Description</b>
4955	88361: CEDA TRANSPORTATION SVCS ADMIN	1522	12,093	1,285	VAN CARGO 3/4T
4353	101110: OPD - POLICE PLANNING	2514	7,986	1,374	VAN HI-CUBE
4203	05411: HRIS-PERSONNEL ADMIN	5712	23,098	1,407	VAN 7 PASSENGER XL
1162	101110: OPD - POLICE PLANNING	1348U	9,641	1,415	VAN 15 PASSENGER UNL
4063	30541: PWA-EQUIPMENT SERVICES	2423	10,071	1,442	VAN CARGO CNG
1066	101110: OPD - POLICE PLANNING	1418	10,232	1,482	VAN CARGO
4958	30522: PWA - ELECTRICAL MAINTENANCE	6777	13,680	1,508	VAN CARGO 3/4T
4085	30541: PWA-EQUIPMENT SERVICES	5744	12,906	1,641	VAN BUS 16 PASSENGER
4071	30532: PWA-DRAINAGE	6744	11,280	1,661	VAN SAVANA CUTAWAY TV HI-CUBE
1289	101110: OPD - POLICE PLANNING	1648U	12,376	1,891	VAN PASSENGER
1175	46231: OIT TELEPHONE UNIT	1348U	34,404	1,971	VAN XL 7 PASS PUM 7/91 SHPL 9/01
1071	101110: OPD - POLICE PLANNING	1424	13,720	1,983	VAN CARGO UNL
1298	30541: PWA-EQUIPMENT SERVICES	1348M	34,331	2,050	15 PASSENGER VAN
4081	30541: PWA-EQUIPMENT SERVICES	4712	16,448	2,091	VAN BUS 16 PASSENGER
4064	08471: PARKING METER COLLECTION UNIT	7744	14,783	2,116	VAN CARGO CNG
1067	101110: OPD - POLICE PLANNING	1418	14,699	2,157	15 PASSENGER VAN
1064	101110: OPD - POLICE PLANNING	4421	15,330	2,159	VAN 7 PASSENGER
223	20816: OFD - FIRE-SUPPORT & SERVICES	2424	36,914	2,266	VAN 158 HI/CUB CT-AWY ARSON 8/92
4485	30541: PWA-EQUIPMENT SERVICES	2712	57,460	2,322	VAN CARGO
4126	30522: PWA - ELECTRICAL MAINTENANCE	2424	17,571	2,489	VAN CARGO CNG
4207	78231: HUMAN SVCS-HEADSTART	6777	40,344	2,498	VAN HI-CUBE CUT AWAY 138
4125	30655: PWA FACILITIES	4423	18,752	2,656	VAN CARGO CNG
226	20816: OFD - FIRE-SUPPORT & SERVICES	1411	18,375	2,697	VAN 12 PASSENGER UNL
225	30541: PWA-EQUIPMENT SERVICES	1411	45,920	2,742	15 PASSENGER VAN
4069	30533: PWA-SANITARY SEWER MAINT	4712	20,192	2,878	VAN TV HI-CUBE

Exhibit 6 (12)

Equipment Number	Department Name	Maintenance Class	Life-to-Date Mileage	Average Annual Mileage	Class Description
4245	30541: PWA-EQUIPMENT SERVICES	2514	47,574	2,925	VAN CARGO 3/4T FF
4957	46231: OIT TELEPHONE UNIT	1522	27,194	2,969	VAN CARGO 3/4T

## 4. MAINTENANCE MANAGEMENT

This chapter presents an analysis of maintenance management practices for the Department. This analysis includes the following:

- The adequacy of maintenance management systems employed for park maintenance, facility maintenance and repair, and golf course maintenance;
- The availability and application of a commercial off-the-shelf (COTS) computerized maintenance management system to manage the maintenance of the Department's assets;
- Opportunities to improve the productivity of the staff assigned to the maintenance of these assets; and
- The adequacy of preventive maintenance of assets.

In performing this study, the MCG compared current conditions in the Agency to best practices for modern and progressive municipal public works departments providing similar services as defined by professional associations such as the American Public Works Association.

### 1. THE AGENCY HAS A NUMBER OF STRENGTHS AND OPPORTUNITIES FOR IMPROVEMENT IN ITS MAINTENANCE MANAGEMENT PRACTICES.

The Agency has a number of strengths in the delivery of its maintenance management practices. Examples of these strengths are provided in the sections below.

- Root removal occurred for 11% of the sewer mains in FY 2006-07.
- Oakland has been awarded a Tree City USA award for twenty-four years.
- *SustainLane Government* ranked Oakland 9<sup>th</sup> overall in the country in terms of environmental sustainability; only San Francisco was ranked higher in California.
- The Equipment Services Division is in the process of developing and installing a pre-trip inspection program modeled after CALTRANS. This program has already been installed for cranes and aerial towers.

- The *Oakland Parks Coalition* conducts an annual condition assessment of the City's parks. The 2007 annual assessment found that many parks showed an improvement since the previous year's assessment. The Coalition believed this was due primarily to the increased efficiency of the Agency and to investment in specific park projects by City Council members and non-profit organizations.
- The Park Maintenance Section has organized park maintenance into "Hubs" to enhance accountability and the efficiency of park maintenance.
- Azteca Cityworks is being installed for use in a variety of divisions in the Agency.
- In 2007, the Agency contracted for the condition assessment of 62 city-owned buildings.
- The Agency has developed and implemented a preventive maintenance program for heating, ventilating, and air conditioning equipment, but only for those buildings maintained by the Facilities Services Division.
- The bulbs used in the streetlight fixtures are high-pressure sodium. These bulbs are energy efficient and provide approximately five years of service life.
- All of the green and red lamps in traffic signals have been converted to LED, enhancing the energy efficiency of traffic signals.
- One-person crews are utilized for sign maintenance and repair. Two-person crews are used for pavement markings.
- There are 7,578 drain inlets in the City. In the first nine months of FY 2007-08, 7,649 drain inlets were cleaned. Drain inlets should be cleaned not less than once a year. The Agency is providing a good level of service for the cleaning of drain inlets.
- The Keep Oakland Clean and Beautiful Division focuses on "hot spots" for graffiti abatement. Each technician assigned to graffiti abatement is assigned a route. A 1-person crew is utilized for graffiti abatement and each technician is assigned a vehicle with a spray rig.
- The illegal dumping / litter enforcement program assigns staff to geographical areas for abatement of litter / illegal dumping. This includes the collection of litter / illegal dumping from "hot spots."

There are also a number of opportunities for improvement in these practices. These opportunities are portrayed below.

- The Agency has acquired Azteca Cityworks. As currently planned, it appears that this system will be utilized more as a work order system than a full-developed maintenance management system.
- Maintenance management practices are not well developed and consistently deployed throughout the Agency.
- Crew sizes are too large in many instances.
- Maintenance crews are not consistently deployed for the accomplishment of their “core” functions such as major paving, sanitary sewer maintenance, stormwater collection maintenance, sidewalk maintenance, etc. In some instances, these crews are being diverted for tasks unrelated to their “core” function.
- Many assets are not being preventively maintained at an adequate level.

The strengths of the Agency’s maintenance management practices, particularly the acquisition of Azteca Cityworks, provide a sound foundation for improvement.

**2. THE AGENCY SHOULD LEVERAGE ITS INVESTMENT IN AZTECA CITYWORKS AND FULLY DEPLOY A MAINTENANCE MANAGEMENT SYSTEM.**

How can productivity be increased? And, what has to be done to control service levels?

That is the focus of maintenance management systems. The Agency is in process of deploying a computerized maintenance management system, Cityworks, acquired from a private firm: Azteca. The deployment of Azteca Cityworks lacks the guiding plan to fully install the system as a maintenance management system.

The Agency is in the process of installing an automated maintenance management system, a system developed by Azteca Cityworks. This system will have a “seat” license of forty (40) concurrent users. The system is an ArcGIS server extension web-based application that will be used to track service requests, work orders, inspections, and provide search and report capability. The system will include automatic vehicle location (AVL) capacity for up to 125 units or vehicles. The acquisition includes forty-five (45)

laptops for use in the field. The system is to be deployed in two phases as noted below.

- Phase 1 – This phase will involve deployment to the Agency’s Call Center, Tree Maintenance Section, Park Maintenance Section, and Graffiti Abatement staff.
- Phase 2 – This phase will involve deployment to the Community Economic Development Agency Right-of-Way Inspectors, Medians and Cut-Clean staff, Illegal Dumping staff, Electrical Section, Sewer Maintenance Section, Streets and Sidewalk Maintenance Section, and Drainage Maintenance Section.

Azteca Cityworks installation is not funded for deployment of Cityworks for the Facilities Maintenance Section or some other functions in the Agency such as street sweeping.

Azteca Cityworks should serve as the basis for maintenance management by the Agency. Azteca Cityworks should be used as a management-by-objective approach to planning, organizing, directing and controlling work. This approach has two primary goals: increased productivity and control of levels of service.

- The benefits of increased productivity are obvious: either the same work will be accomplished at less cost, or more work will be accomplished for the same cost, with work quality remaining constant.
- The benefits of effective service-level control are not so obvious. Maintenance managers typically think in terms of increased performance, about considering the impacts on *the* quantities of work accomplished. For example if productivity of pothole patching is doubled, does that mean that twice as much pothole patching should be done? Or should the resources be released for some other kind of work? How much work should be performed – and what service levels should be attained – activity, by activity? The point is that increased productivity is superficial if no effort has been made to identify *how* much is to be done and to control that level of service.

The Agency should develop and install a maintenance management system to enable the identification of the services provided (e.g., sanitary sewer main jetting), the levels of service (e.g., sanitary sewer mains are cleaned once every three years), the outputs of each of these services (e.g., the linear feet of sanitary sewer mains cleaned), and the cost of those services in terms of the total cost and the cost per unit of output.

This maintenance management system needs to be installed within all divisions of the Agency that are responsible for maintaining the City's infrastructure. The components of a successful maintenance management system are presented below.

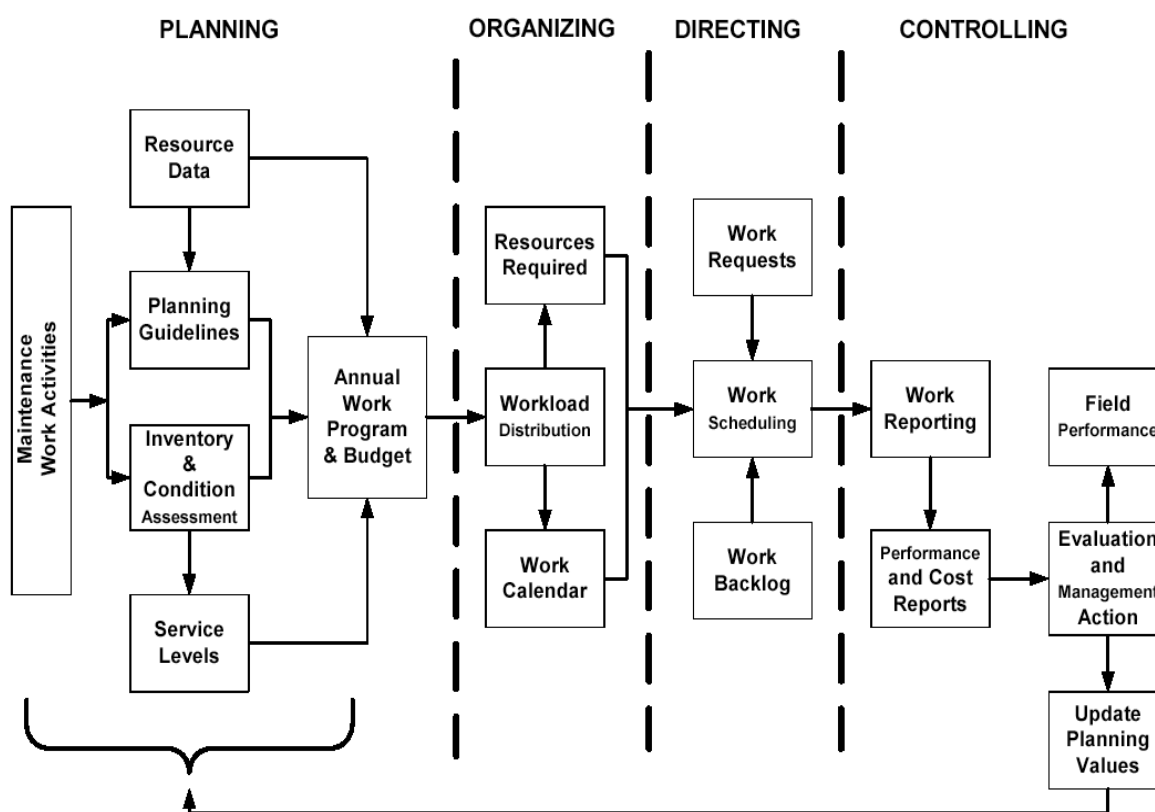
- Documenting the number and type of maintenance features (physical assets) and the condition of these features are major factors in determining the types and amounts of work needed. An inventory of such maintenance features (physical assets) should be prepared.
- Maintenance management is based upon work activities. Work activities should be defined for the significant maintenance work that is performed. Definitions should include an activity code, title, description, work unit and inventory unit. Such complete descriptions of activities are referred to as Activity Guidelines and provide standards of performance for individuals and crews by setting forth the quality and quantity of results anticipated from each activity.
- An annual work program and budget should be prepared. The activity-based work program and budget represents the product of the planning process and summarizes the kinds and amounts of work planned, the productivity of the work force, and the costs of the planned work. It also provides the basis for managing the annual work effort.
- An annual work calendar should be prepared showing the monthly distribution of planned maintenance activities. Labor, equipment and material resource requirements needed to accomplish the planned workload are also identified.
- Work scheduling procedures should be developed. The preparation of annual, seasonal and short-term schedules, as well as daily plans, can provide guidance in achieving annual work program goals.
- Reports that will enable showing work accomplishment and cost data and a comparison of planned and actual work program accomplishment should be prepared.
- Linking a database and geographic information systems (GIS) provides more options to analyze asset information.
  - A GIS can display asset symbols on a map with links to their corresponding database records. The GIS provides the ability to analyze data based on geographic information, allowing patterns to emerge on a map that may not be as obvious in rows and columns of data.
  - Asset information can be shared in a visual format that is often better



understood by others including the City Council and the public.

- Finding an asset's location is faster and easier with the help of a map.

The basic flow of this maintenance plan is presented in the following chart. Some of these task elements have been completed such as the condition assessment of the City's streets. But the tasks identified above would need to be accomplished to enable the development of a maintenance plan for the Agency.



The steps that need to be accomplished before the automated maintenance management system can be effectively utilized are presented below.

**(1) A Complete Inventory of Work Activities Performed by the Agency in the Maintenance of Infrastructure Assets Needs to be Defined.**

The managers and supervisors in the Agency should define the work activities performed by their staff. The managers and supervisors need only assure that all of the primary work activities (i.e., pothole patching, sidewalk repair, televising sanitary sewer mains, etc.) that consume the majority of staff work hours are defined. This would include all forms of leave. All 1,950 staff hours for each employee should be included within the system. The work activities need to be carefully defined to assure that the same terminology is used for the work performed by staff. Each of these work activities should define the unit of measure. Examples of work activities and units of measure are provided below.

<b>Work Activity</b>	<b>Unit of Measure</b>
Pothole patching	Tons of asphalt
Base repair	Square yards
Skin patching	Square yards
Sanitary sewer televising	Linear feet of sewer

**Recommendation #68: The Agency should develop a complete inventory of the work activities performed by the Agency in the maintenance and repair of infrastructure assets.**

**(2) Define the Levels of Service to be Provided.**

Levels of service should vary depending on the type of facility, intensity of use, and local standards. For the purposes of maintenance management, service levels must be specific. Examples of specific service-level standards are:

- Digout and rebase shall be performed when the asphalt surface becomes badly cracked and does not adhere to the base (surface failure) or where there is evidence of base failure (such as rolling, pumping, etc.); and
- Crack and joint sealing shall be performed whenever cracks in asphalt reach 1/4-inch to 2 inches in width.

Some judgment, of course, may be needed in applying these standards, but they do

provide specific and useful guidelines – in terms of what maintenance should be performed and what maintenance should be deferred. These standards are useful in determining the amount of work needed to attain desired levels of service. In some cases, these standards will also need to be expressed as quantitative standards as well. For example, sanitary sewer mains shall be inspected on a 15-year cycle.

**Recommendation #69: The Agency should define the levels of service that the Agency can provide in the maintenance and repair of assets entrusted to the Agency.**

**(3) Performance Standards Need to Be Developed.**

The next step in deploying a maintenance management system is to define the work to be done. The work must be identified in unmistakable terms that are measurable and that can be related to resource requirements on a consistent basis. The work activities are identified by name (such as pothole patching). These specific work activities account for most of the annual workload – typically 85% to 90%. The remaining 10% to 15% of the workload is usually composed of an almost endless list of rather minor activities that can be grouped as “miscellaneous.”

A standard would be developed to define a level of service for a specific activity. That is, the standard is used to define the amount of work that needs to be done to provide the desired level of service. These are established largely on the basis of experience. Then that value can be used as a standard and may be adjusted upward or downward to raise or lower the level of service for pothole patching.

These standards are used to define the best way to accomplish each activity. The optimum crew and equipment complement is specified, along with the major materials needed and the preferred procedure for doing the work. Also, the expected amount of

work to be accomplished each day is specified, based on using the standard over a period of time under average conditions.

Each standard should include at least six components:

- A brief description of the specific work involved – the work that is to be performed by the crew;
- The frequency with which the work should be performed (or the level of service) and the criteria for scheduling the work;
- The crew size required for the job;
- The equipment, material, and tools needed;
- The performance expectations for each job or average daily productivity; and
- The recommended procedures for completing the job.

A sample performance standard for traffic signal cabinet maintenance is presented in the exhibit following this page.

**Recommendation #70: The Agency should develop performance standards for each work activity.**

**(4) An Annual Work Program and Calendar Needs to be Developed.**

To develop an annual work program, the Agency should first develop unit costs for labor, equipment, and materials so that the cost of performing the work can be determined. The unit costs can then be applied to the standard list of resources for each standard developed in the previous task to determine the average daily cost for performing each activity. With the inventory, standards, and unit costs in hand, the annual work program and budget may be determined.

## Exhibit 7

## Sample Performance Standard

**ACTIVITY NO:**

101

**ACTIVITY NAME:**

Cabinet Maintenance

**DATE:**

October 2008

**ACTIVITY DESCRIPTION:**

Cabinet maintenance includes the inspection, testing, cleaning and adjustments made to the traffic signal electronic equipment cabinet.

**PERFORMANCE CRITERIA:*****PRIORITY SERVICE***

☞ Preventative maintenance activity to be scheduled

***SCHEDULED MAINTENANCE***

☞ Cabinet Maintenance will be performed twice annually

**TYPICAL CREW SIZE:**

☞ 1 Person

**WORK METHOD:**

- ◇ Test conflict monitor with computerized tester, record results.
- ◇ Vacuum cabinet, open controller door, blow out controller
- ◇ Check timing on controller
- ◇ Spray cabinet with bug spray
- ◇ Check condition of cabinet documentation, replace as necessary
- ◇ List cabinet equipment on inventory sheet
- ◇ Check operation of vehicle loop detectors, tune if necessary
- ◇ Visually inspect loops and test pedestrian pushbuttons
- ◇ Check operation of cooling fan, set to 100°F
- ◇ Lubricate door locks
- ◇

**EQUIPMENT:**

Hand tools	Vacuum Cleaner	and	1 Van
Conflict monitor tester	compressed air bottle		

**MATERIAL:**

Non-conductive bug spray	Timing sheets	Checklists
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**PRODUCTION STANDARDS:**

◆ UNIT OF MEASUREMENT:	Cabinets
◆ AVERAGE DAILY PRODUCTION:	10
◆ MAN HOURS PER WORK UNIT:	1.0

By applying the standards to the inventory values, the annual workloads by activity are determined. Applying the standards to the workload provides the amount of labor, equipment, and materials required to accomplish the work.

After development of the annual work program, the next step is to develop an annual calendar. To accomplish the work program efficiently, the workload must be evenly distributed throughout each month of the year. Seasonal influences on the work must be taken into account first. Then, the remainder of the workload must be distributed to achieve as level a workload as possible.

With the workload spread out over the year on a monthly basis, an annual work calendar can be developed to guide the development of short-term schedules. Specific requirements for labor, equipment, and materials on a monthly basis will be known well in advance so that no shortages should occur when the work is ready to be done.

The annual work plan needs to be developed within Azteca Cityworks to guide the Agency in prioritizing and performing specific tasks, and the system will provide managers and supervisors with a document to hold their staff accountable for results. The annual work plan estimates the kind and amount of work to be done in the next fiscal year. The managers and supervisors should prepare the annual work plans as part of the budgetary preparation process. The development of an annual work program takes into consideration two major questions:

- What amount of work is needed to provide the desired levels of service to the public?
- What required levels of staff, equipment, and material will be needed to provide that level of service and at what cost?

The annual work program is prepared once a year and serves as a planning document that establishes objectives for the coming fiscal year in terms of the specific work activities to be performed, the service levels to be provided, and the allocation of staff in the provision of these services.

The annual work plan, a sample is presented in the following exhibit, will fundamentally change the focus of managers and supervisors in the Agency from their current roles of day-to-day supervision to that of management of resources to ensure conformance with the annual work plans. The Agency should establish service levels for each of the work activities and services they provide. Once these service levels are established, the Agency should report on the planned and accomplished work on a monthly and annual basis using the automated maintenance management system. The exhibit is only an example, and is not based upon actual data from Oakland.

**Recommendation #71: The Agency should utilize Azteca Cityworks to develop an annual work program and calendar.**

**(5) Develop a Formal Work Planning and Scheduling System.**

This task would involve the development of a formal work scheduling system. The secret to providing the desired level of service and staying within budget is to ensure that only the planned amount of work is done – no more and no less. After the annual work program and budget is approved, managers must have a simple method of authorizing and scheduling work to ensure that the work program is carried out as planned. Usually bi-weekly schedules are prepared, using the annual work calendar as a guide. To the extent possible, the planned work should be carried out and every effort should be made to stay on schedule.

## Exhibit 8

Sample Annual Work Program for  
Street Maintenance

Work Activity	Inventory Quantity	Inventory Unit	Svc. Level	Annual Work Quantity	Work Unit	ADP*	Annual Crew Days	Crew Size	Labor Days	Labor \$	Equip. \$	Material \$	Total \$
<i>Program: 07 - Administration</i>													
Vacation	480	Labor Hour	1	480	Labor Hour	8	20	3	60	\$68,750	\$0	\$0	\$68,750
Other Time Off	800	Labor Hour	1	800	Labor Hour	32	25	4	100	\$25,000	\$0	\$0	\$25,000
Sick	800	Labor Hour	1	800	Labor Hour	28.5	28.1	3.6	101.1	\$25,263	\$0	\$0	\$25,263
Meetings /Training	850	Labor Hour	1	850	Labor Hour	30	28.3	3.7	104.8	\$26,208	\$1,784	\$0	\$27,992
<b>Program Totals</b>									<b>580.9</b>	<b>\$145,221</b>	<b>\$1,784</b>	<b>\$0</b>	<b>\$147,005</b>
<i>Program: 08 - Pavement Maintenance</i>													
Pothole Patching	420	Lane Mile	0.6	252	Tons	2.8	90	2	180	\$45,000	\$19,008	\$19,548	\$83,556
Remove/ Replace Base	420	Lane Mile	6	2,520	Sq. Yds	62.5	40.3	3	121	\$30,240	\$13,862	\$10,777	\$54,879
Skin Patching	420	Lane Mile	55	23,100	Sq. Yds	218	106	3	317.9	\$79,472	\$59,315	\$52,830	\$191,617
Crack Sealing	420	Lane Mile	5	2,100	Lbs. Sealant	350	6	3	18	\$4,500	\$3,586	\$1,775	\$9,861
<b>Program Totals</b>									<b>636.8</b>	<b>\$159,212</b>	<b>\$95,771</b>	<b>\$84,930</b>	<b>\$339,913</b>

ADP = Average Daily Productivity

This exhibit is only an example and is not based on actual data from the City of Oakland Public Works Agency



If activities such as storm damage repairs and cleanup are greater than planned, the work program will have to be adjusted or additional funds will be requested to complete the planned work.

To ensure that field crews perform only the authorized work, work-orders or crew-day cards are typically used by the supervisor to authorize work on a day-to-day basis. Each work order authorizes a crew to perform a specific amount of work on a specific activity.

**Recommendation #72: The Agency should utilize Azteca Cityworks to develop and deploy formal work planning and scheduling systems in each Section.**

**(6) A Monthly Performance Report Should be Generated Comparing Planned Versus Actual Performance and Costs.**

This last step involves the development of a work reporting system. Daily time cards are typically used in public works organizations to track labor, equipment, and materials used for maintenance activities. These cards, or electronic work reports, if properly designed, can also be used to report the amount of work done and the locations of work as well as the resources used. Normally, these are completed at the end of each day, or at the end of each job if more than one activity is performed during the day.

The supervisors should promptly review the daily work reports to ensure that they were completed properly and to determine if the performance standards were substantially followed. Significant variations should be followed up to determine the cause and, if necessary, take corrective action.

A system should be developed to summarize the daily work reports on a monthly basis to produce performance evaluation reports. An example is provided in the following exhibit. These are used to evaluate performance and monitor progress toward

accomplishing the work program. Again, significant deviations from the planned work program and budget should be investigated and appropriate follow-up action taken. The importance of this step cannot be overemphasized. Without evaluation and control to ensure that the plan is followed, the entire maintenance management effort will be in vain. The performance measurement data generated by this report would include:

- A comparison of planned versus actual staff hours per work activity for the previous month and year-to-date for each work activity;
- A comparison of actual versus planned work output (miles of curbs swept by street sweepers) per month and year-to-date for each work activity;
- A unit cost analysis that compares the planned versus actual unit costs for each work activity per month and year-to-date; and
- A comparison of actual productivity (work output per staff hour) versus the expected productivity as stated in the performance standards.

The intent of the monthly performance report is to report actual accomplishments against the annual work plan.

**Recommendation #73: The Agency should utilize Azteca Cityworks to generate a monthly performance report comparing planned versus actual performance and costs.**

**(7) The GIS Linkage to Azteca Cityworks System Should be Utilized to Update the Asset Inventory and Analyze and Enhance the Management of the Work Conducted by the Agency.**

A critical component of successful Public Works GIS implementations is accurate and complete data.

**Exhibit 9****Sample Monthly  
Performance Report**

Year-to-Date Work Progress Report for Street Maintenance  
Period: July 1, 2008 – July 30, 2008

Work Activity	Labor Days		Amount of Work		Total Cost		Productivity	
	Plan	Actual	Plan	Actual	Plan	Actual	Plan	Actual
<i>Program: 08 – Pavement Maintenance</i>								
Pothole Patching	15	18	42 tons	40 tons	\$6,963	\$7,862	2.8 tons per crew day	2.4 tons per day
Remove/Replace Base	10	26	210 Sq. Yds.	456 Sq. Yds.	\$4,573	\$9,602	62 ½ Sq. Yds. Per crew day	68 ½ Sq. Yds. Per crew day

This is not based upon actual data from the Public Works Agency

When the maintenance crews of the Agency go out into the field, these crews have the opportunity to identify necessary changes or additions to the asset inventory such as missing manholes, missing catch basins, missing mains, etc. If these changes and additions are not reported back to GIS staff, the GIS layers are missing pertinent data or contain erroneous data and will quickly become out-of-date. Users will not know what data is accurate and what is not. Therefore, data sets can become suspect and staff may begin to doubt its usefulness and reliability.

The solution to this problem is a GIS-based maintenance management system such as Azteca Cityworks. A properly implemented maintenance management system will allow staff to quickly input specific information about a task and then print out a paper work order or access an electronic work order with an accompanying map. This map would show the infrastructure for the area of concern.

The Agency field crews could then mark any changes or additions to the system on the work order. Once the job was completed, the field crew would return the work order with changes back to Agency GIS staff to enable the updating of the appropriate data layers.

An added benefit of such a system is continual fine-tuning and an improvement of mapped GIS data. If any errors exist on the GIS maps, then the Agency field crew would mark and correct the error. In turn, this information will be corrected in the GIS layer by Agency GIS staff.

Therefore, instead of GIS data becoming obsolete because of information not flowing back from the field, GIS data will continually improve because of corrections made in

the field. Subsequently, GIS data will reflect a very accurate depiction of what is in the field.

In addition, there are residual benefits of such a system. Implementing GIS-based Azteca Cityworks will ensure that this data is accurate and will facilitate the rapid determination of assets in the field.

There are several applications available to meet this need. It is recommended that the Agency implement an application that will easily integrate with existing information technology, including the City's various enterprise databases.

An example of a GIS application is the Utility Geodatabase Geometric Networks for Sanitary Sewer and Storm Water Systems. Environmental Systems Research Institute (ESRI), in conjunction with many public and private utility organizations, has developed data models for sanitary / stormwater sewer distribution networks. These data models are designed to create a logical template for the creation of sanitary sewer and storm water ArcGIS geodatabases. The advantages of utilizing these data models include:

- Utility business logic: rules for how utilities can and do interact
- Standardized template of utility features, feature attributes, and relationships (fully customizable)
- Utility specific symbology
- Network tracing tools – ability to conduct tasks on each network, including: trace upstream, trace downstream, find connected features, and more.

It is recommended that the Agency develop computer / hydraulic models for the City's sanitary sewer and stormwater networks. By developing these models, and migrating

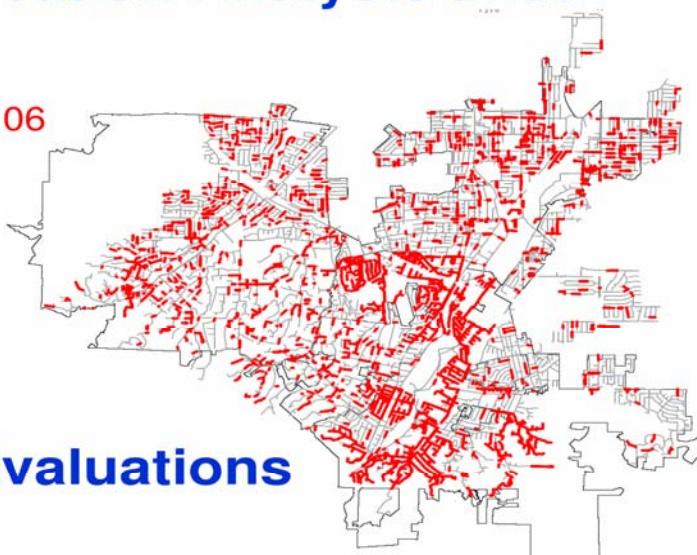
existing and future data to the geodatabase format, departmental staff will be able to use powerful network design, analysis, and modeling features available with ArcGIS 9.

One could logically question the value of this effort in terms of the “value added” to the Agency. An example of how a Sanitation District utilized a GIS-based maintenance management system to enhance the effectiveness of the maintenance of its sanitary sewer system is provided below. This District was responsible for the maintenance of 632 miles of sewer mains and serves a population of 111,400 customers with 36,000 connections.

- The District utilized a GIS-based maintenance management system that is utilized for planning and scheduling work, and for reporting results.
- The District has developed a full-featured maintenance management system including performance standards, monthly reports that identify planned versus actual performance, etc.
- The GIS layers, linked to the maintenance management system, are utilized to display condition data (from the CCTV), cleaning schedules, and develop cleaning routines.
- The GIS layer displays the work location analysis as indicated for high velocity cleaning of sanitary sewers in the chart below.

## Reports the System and Provides Work Location Analysis and...

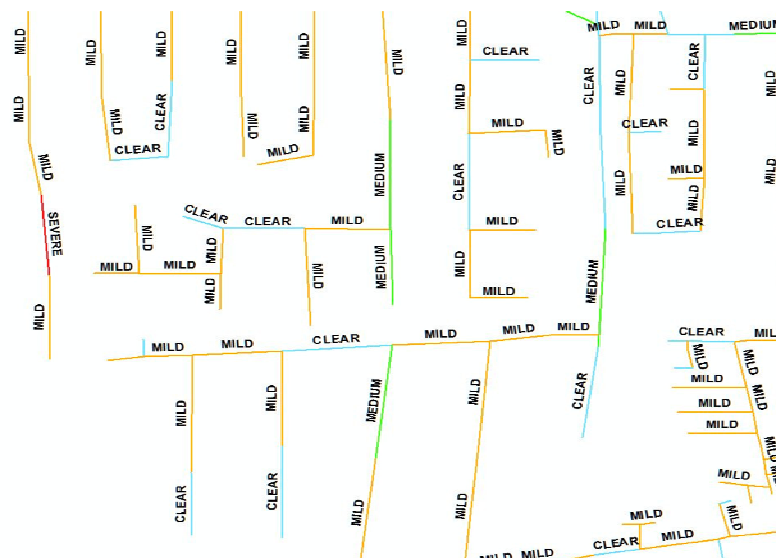
Mainline Cleaning  
January 06 to June 06



## Graphical Evaluations

- The GIS layer displays the severity rating (e.g., mild, medium, etc.) of the sanitary sewer based upon the extent of debris found by high velocity cleaning crews (see the chart below).

## Severity Ratings...



- The GIS layer displays the segments of the sanitary sewer system that are overdue for cleaning (see the chart below).

## Overdue Segments...



- Managers and supervisors then utilized the GIS layer and geodata to develop strategic geographical zones. Field crews concentrate on cleaning sanitary sewer mains in these zones to reduce travel time and increase the efficiency and ability of crews to do more with less time. The District has developed twenty-four zones that are grouped into balanced quantities of mains (approximately 100,000 linear feet in each zone).
- The managers and supervisors are using the severity data to optimize cleaning schedules based on amount of debris collected since previous cleaning of the main, the debris rating based on amount removed (pounds) and type (grease, roots, etc.). The District is integrating decision logic into the scheduling to optimally determine when to clean a main with the frequency being updated and adjusted continuously based upon the severity ratings.

**Recommendation #74:** The Agency should develop a formal written policy and procedure for the updating of the sanitary sewer and stormwater maps by field crews. The policy and procedure should require field crews to notify Agency GIS staff regarding discrepancies in infrastructure for updating of the appropriate data layers.

**Recommendation #75:** The Agency should develop computer / hydraulic models for the City's sanitary sewer and stormwater networks.



**(8) Azteca Cityworks Should be Deployed in the Facilities Management Division.**

Azteca Cityworks will have been deployed in almost all of the field operations of the Agency with the exception of the Facilities Management Division. This is puzzling since the building maintenance staff of the Parks and Building Division will be utilizing Azteca Cityworks, but not the building and custodial maintenance staff of the Facilities Management Division.

This problem needs to be corrected. Azteca Cityworks should be deployed to the Facilities Management Division. The estimated one-time cost of the deployment is presented below.

<b>Recommendation</b>	<b>One-Time Cost Increase</b>	<b>Recommendation</b>	<b>Annual Cost Increase</b>
Acquire laptop / PDA devices – Engineers (14), Custodial Supervisors (6), Building Services (35)	\$220,000	Annual operating costs for laptop / PDA devices – Engineers (14), Custodial Supervisors (6), Building Services (35)	\$33,000
Upgrade ESRI Server License - \$40,000	\$40,000		
Additional Microsoft/Citrix/ESRI licenses, if needed	\$10,000		
Training Software Configuration	\$50,000		
Migrate existing data from Corrigo to Azteca Cityworks	\$20,000		
<b>Total One-Time Cost</b>	<b>\$340,000</b>	<b>Total Ongoing Cost</b>	<b>\$33,000</b>

**Recommendation #76: Azteca Cityworks should be deployed in the Facilities Management Division.**

### **3. THE TREE MAINTENANCE SECTION SHOULD IMPROVE ITS MAINTENANCE MANAGEMENT PRACTICES.**

This section presents an analysis of the maintenance management systems employed by the Tree Maintenance Section including crew sizes, service levels, and maintenance of the urban forest.

#### **(1) The City Council Should Evaluate Whether the Same Level of Service Should be Delivered Citywide For Tree Maintenance.**

The Office of Parks, Recreation, and Cultural Services (PCRS) developed a *Street Tree Plan* in January 1998.<sup>15</sup> General Policy 4.2 of the *Street Tree Plan* states "trees that are not planted or accepted by PCRS as official are classified as unofficial trees. All trees growing within public rights-of-way along unimproved streets are classified as unofficial trees. Property owners are responsible for (a) the maintenance of unofficial and private trees and (b) any damage caused by the roots of unofficial trees and private trees." General Policy 4.1 of the *Street Tree Plan* states, "for trees to become official City trees, they must either be planted by the City of Oakland or planted by another party and accepted by the Parks, Recreation, and Cultural Services (PRCS). Official trees are found growing upon City-owned park lands, other City-owned properties, and are growing within public rights-of-way as street trees along improved City streets."

This results in different levels of service for maintenance of street trees in the public right-of-way. Street trees growing in the public right-of-way along improved streets (those streets with sidewalks) are allocated three tree-trimming crews to respond to service requests. The street trees in public right-of-way along unimproved streets (those

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<sup>15</sup> City of Oakland, *Street Tree Plan*, January 1998

without sidewalks) are allocated a tree removal crew for removal of hazardous trees, and not routinely allocated tree trimming crews to respond to service requests.

The Infrastructure and Operations Department should prepare a policy study for the consideration of the City Council to determine if the existing level of service for tree trimming should remain the same or if service citywide should be equalized or should be consistent. The policy study should be designed to assist the City Council with setting priorities for the coming fiscal year.

The policy study should include the following elements:

- What are the key elements of the issue? What precipitated it?
- How does this issue relate to the General Plan or existing City policy (e.g., the *Street Tree Plan*)?
- Who is the originator of the issue?
- Is this a multiple year project?
- The potential cost ramifications on an annual basis of the policy alternatives?
- The staff recommendations.

**Recommendation #77: The Infrastructure and Operations Department should prepare a policy study for the consideration of the City Council regarding the level of service for tree trimming.**

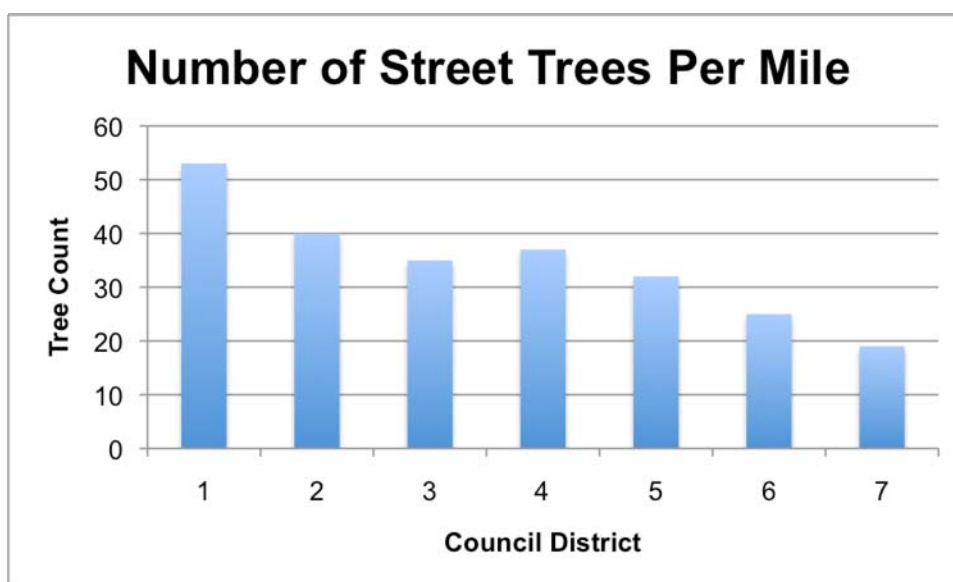
**(2) A Long-Range Tree Planting Plan Should be Developed That Includes a Canopy Coverage Goal.**

The Tree Maintenance Section has not prepared a formal, written tree planting plan that includes a tree planting policy, tree planting specifications, an objective for canopy coverage, and policies for species and age diversity of the urban forest. In fact, the Tree

Maintenance Section does not know the total number of street trees or park trees in the City or the canopy coverage.

A good measure of the health of an urban forest is the percentage of land within the city that has tree canopy cover. In order to measure the success of the City in achieving canopy cover, goals must first be established. These goals will help the City define a clear target, and help to plan implementation steps that consider tree planting. With canopy coverage goals, the City can target available funding to areas with the greatest potential for new trees or the greatest lack of trees.

For example, the *Citywide Sidewalk / ADA Inventory* identified the number of street trees per Council District (see the chart below).



This data would suggest that the greatest need for tree planting is in Council Districts 6 and 7. Overall, the *Citywide Sidewalk / ADA Inventory* indicated that in its inventory of 38,416 street trees on improved streets (streets with sidewalks) there were 4,245 empty tree wells or 10% of the available tree wells that were included in the survey.

The Tree Maintenance Section should prepare a tree planting plan to address these vacant tree wells, a tree planting policy, tree planting specifications, an objective for canopy coverage, and policies for species and age diversity of the urban forest. The canopy goals developed by *American Forest*, a non-profit conservation organization, are presented below.

- 40% tree canopy overall;
- 50% tree canopy in suburban residential;
- 25% tree canopy in urban residential; and
- 15% tree canopy in central business districts.

The only data that the MCG could identify regarding the tree canopy coverage for the City dates from 1991: at that time the canopy coverage was identified as 21%.<sup>16</sup>

American Forests has developed software - CITYgreen – that utilizes ArcGIS 9.2 and satellite imagery to document the tree canopy coverage among other statistics. The Tree Maintenance Section should acquire this software, and work with the Information Technology Department to deploy the software, integrate satellite imagery, and document the tree canopy coverage for the City and each Council District. The estimated total one-time cost impact of the software is presented in the table below.

Recommendation	Cost Reduction	Recommendation	One – Time Cost Increase
N / A	\$0	Acquire CITYgreen software from American Forests	\$900 (One-Time)

**Recommendation #78: The Infrastructure and Operations Department should prepare a tree planting plan to address the vacant tree wells identified in the *Citywide Sidewalk / ADA Inventory*, a tree planting policy, tree planting**

<sup>16</sup> The Urban Forest Effects (UFORE) Model: Quantifying Urban Forest Structure and Functions, David J. Nowak and Daniel E. Crane, August 1998

specifications, an objective for canopy coverage, and policies for species and age diversity of the urban forest.

**Recommendation #79:** The Infrastructure and Operations Department should acquire CITYgreen software from American Forests, and work with the Information Technology Department to deploy the software, integrate satellite imagery, and document the tree canopy coverage for the City and each Council District.

**(3) The Crew Sizes Utilized by the Tree Maintenance Section and the Amount of Equipment Allocated to Each Crew are Larger than Appropriate in Many Instances.**

MCG prepared an analysis of a sample of work orders completed by the Tree Maintenance Section in 2007 for two of the three crews assigned to respond to service requests for those areas with improved streets (streets with sidewalks) and one crew assigned to removals. Important points to note regarding the data are presented below.

- **The crew size, in most instances, amounts to three to four staff, which is larger than required for most service requests, but appropriate for removals.** The crew size that should be utilized to respond to service requests involving low limb and mature tree pruning, in most instances, should consist of two staff. This would include one employee in an aerial tower, and one ground worker. The Agency should provide low limb and mature tree pruning services with a crew type staffed and equipped according to best industry practices. The best practice for most aerial tower accessible conditions consists of a 2-person crew that includes a trimmer and a ground worker with an aerial tower, chipper and appropriate hand tools.<sup>17</sup>
- **The amount of equipment allocated to each crew, in most instances, is more than appropriate.** It was not unusual for these crews to deploy with four to five pieces of equipment. This would include an aerial tower, a crane, a chipper truck, a flatbed truck, and a brush chipper. The best practice for most aerial tower accessible conditions consists of an aerial tower with chip box mounted on the same chassis, and a brush chipper.

The impact of using larger crew sizes than appropriate is significant. More crews can be deployed to respond to service requests regarding low limb and mature tree pruning without an increase in the total number of staff. The impact of reducing a crew size will

<sup>17</sup> Robert L. Tate and Associates, Inc. Sacramento Tree Services Best Management Practices Review and Report, November 2003.

only marginally impact the productivity of an individual crew given the lost productivity resulting from travel time and since only one member of the crew can utilize the aerial tower; the other crew members are ground workers or trim low hanging branches from the ground.

A 2-person crew size should be the standard crew size utilized for responding to service requests involving low limb and mature tree pruning. The Tree Maintenance Section should utilize 2-person crews with proper equipment (aerial lift with chip box, chipper and all appropriate hand tools and equipment). This crew should work on clearing obstructions to traffic devices, streetlights, lower priority customer requests and low-limb work when not responding to broken or hanging limbs. For all exceptionally large fallen limbs that cannot be handled by this two-person crew, a supervisor should be responsible for requesting appropriate labor and equipment.

Given the number of service requests, the MCG recommends that two 2-person crews be deployed to respond to low limb and mature tree pruning on an every workday basis, and a third 2-person service request crew be deployed one to two days a week. The remainder of the available week, the third crew should be assigned responsibility for block-by-block trimming (proactive trimming, and not reacting to service requests). This would require the acquisition of a third aerial tower to enable all three of these crews to be appropriately equipped with proper equipment (aerial lift with chip box, chipper and all appropriate hand tools and equipment) as discussed later in this report.

**Recommendation #80: Reduce the crew size utilized for responding to tree maintenance service requests to two positions.**

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**(4) The City Should Provide Funding for Contractual Block-By-Block Street Tree and Park Tree Trimming on an Annual Basis.**

Urban trees require maintenance. The goals of maintenance are to promote health, provide safe and functioning public spaces, and maximize the environmental, social, and economic benefits of the urban forest. Tree maintenance tasks and frequency vary depending on age, species, establishment, and site characteristics.<sup>18</sup>

Pruning is a specialized type of maintenance. Pruning can be done reactively to eliminate hazards such as clearing obstructed signs or removing branches at risk of falling or preventively for tree health and safety. Proactive pruning for health and safety is pruning to remove diseased or insect-infested wood, improve air flow to reduce disease and insects, remove crossing or rubbing branches, develop a strong structure, remove broken limbs to encourage wound closure and prevent hazards, and prevent obstructions with signs and pedestrian traffic.<sup>19</sup>

An important benchmark for urban forestry program performance is how often trees are pruned. The industry standard for proactive pruning of trees is a 5 to 7-year cycle.<sup>20</sup> The advantage of shorter pruning cycles is longer lived, healthier trees that are able to provide maximum benefits over time.

The deferral of pruning, beyond the optimum growth based cycle, increases safety hazards in terms of broken limbs and line-of-sight clearance for vehicular traffic. It results in the removal of a larger number and volume of limbs and foliage that requires more time to remove. The results of an analysis of deferral of utility pruning found that:

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<sup>18</sup> City of Seattle, Urban Forest Management Plan, April 2007.

<sup>19</sup> Ibid

<sup>20</sup> Journal of Arboriculture, An Economic Evaluation of the Pruning Cycle, April 1981



“For every routine maintenance dollar deferred, substantially more than one dollar must be spent in subsequent years to re-establish the preferred cycle.” This holds true in municipal arboriculture as well.<sup>21</sup>

The City's park trees are not being pruned on a regular ongoing basis. The “sidewalk” street trees are being pruned on an approximate 14-year cycle. The “right-of-way” trees are not being pruned on a regular ongoing basis. Overall, tree maintenance is pruning approximately 4,100 sidewalk, park, and right-of-way trees annually.

If the City was to provide proactive pruning of its urban forest, given the current level of service (trimming of “official” trees), it would need to provide funding for the trimming of 7,350 park and street trees annually. The City has recently engaged a contractor to provide proactive trimming. The use of a contractor for proactive pruning reflects trends in municipal urban forestry in California, and has been the trend for many years. The average proportion of a city's tree program spent on contractors was reported to have steadily increased from 34% in 1992 to 55% in 2003.<sup>22</sup>

The City should provide contractual funding on annual basis for the proactive tree trimming of 7,350 park and street trees annually. The estimated annual cost to provide this service is presented in the table below.

Recommendation	Cost Reduction	Recommendation	Cost Increase
N / A	\$0	The City should provide funding on an annual basis for the proactive tree trimming of 7,350 park and street trees annually	\$440,000

<sup>21</sup> Journal of Arboriculture, The Economic Impacts of Deferring Electric Utility Tree Maintenance, May 1997.

<sup>22</sup> California Department of Forestry and Fire Protection, The State of Urban and Community Forestry in California, July 2006.

**Recommendation #81: The City should provide contractual funding on an annual basis for the proactive tree trimming of 7,350 park and street trees annually.**

**(5) The Tree Maintenance Section Should Enhance Its Relationship With Non—Profit Tree Conservation Organizations.**

The Section should enhance its working relation with non-profit tree conservation organizations to leverage the ability of this non-profit to obtain grant funding for planting of street trees. The Section should outsource the planting of street trees to these non-profits. The City has successfully worked with non-profit tree conservation organizations previously.

**Recommendation #82: The Tree Maintenance Section should enhance its working relationship with non-profit tree conservation organizations and leverage the ability of the non-profit tree organizations to obtain grant funding for planting of street trees.**

**Recommendation #83: The Tree Maintenance Section should outsource the planting of street trees to non-profit tree conservation organizations.**

**4. THE EQUIPMENT SERVICES DIVISION SHOULD IMPROVE ITS MAINTENANCE MANAGEMENT PRACTICES.**

This section of the chapter presents an analysis of the maintenance management practices of the Equipment Services Division including the utilization of the technicians within the Section in the maintenance of the City's fleet, the timeliness for completion of work orders, and the preventive maintenance of the City's fleet and the methodology for scheduling the preventive maintenance.

**(1) The Equipment Services Division Should Increase the Proportion of the Work Accomplished During the Swing Shift.**

A comparative survey of fleet services in other cities provided data concerning the number of maintenance shops as well as hours of operation. The table below provides a summary of the information.

City	Number of Shop Locations	Days per Week	Hours per Week
Charlotte	4	All Monday to Friday	<ul style="list-style-type: none"> <li>– 3 Shops 6:00 am to 10:00 pm</li> <li>– 1 Shop 6:00 am to 3:00 pm</li> </ul>
Fresno	3	Two shops Monday to Friday One shop Monday to Saturday	<ul style="list-style-type: none"> <li>– The Main Shop operates M (6:00 am to 10:30 pm); T -TH (5:30 am to 12:00 am), F (5:30 am to 10:30 pm) and Sat (6:00 am to 2:30 pm).</li> <li>– 1 Shop 7:00 am to 4:30 pm</li> <li>– 1 Shop 6:30 am to 9:00 pm</li> </ul>
Fort Worth	6	All Monday to Friday	<ul style="list-style-type: none"> <li>– 1 Shop 6:00 am to 1:30 am</li> <li>– 1 Shop 6:00 am to 10:30 pm</li> <li>– 1 Shop 6:30 am to 9:00 pm</li> <li>– 1 Shop 7:00 am to 5:30 pm</li> <li>– 1 Shop 7:00 am to 6:30 pm</li> <li>– 1 Shop 7:00 am to 3:30 pm</li> </ul>
Kansas City	3	All Monday to Friday	<ul style="list-style-type: none"> <li>– 1 Shop 7:30 am to 11:30 pm</li> <li>– 2 Shops 7:30 am to 4:00 pm</li> </ul>
Las Vegas	4	All Monday to Friday	– 4 Shops 4:00 am to 4:30 pm
Long Beach	4	All Monday to Friday	– 4 Shops 5:30 am to 8:00 pm
Oklahoma City	2	All Monday to Friday	<ul style="list-style-type: none"> <li>– 1 Shop 9:00 am to 5:00 pm</li> <li>– 1 Shop 6:00 am to 3:00 pm and 10:00 pm to 7:00 am</li> </ul>
Sacramento	8	2 Shops 7 Days per Week 6 Shops Monday to Friday	<ul style="list-style-type: none"> <li>– 2 Shops 5:30 am to 10:30 pm</li> <li>– 3 Shops 5:30 am to 11:00 pm</li> <li>– 3 Shop 7:30 am to 4:30 pm</li> </ul>
Virginia Beach	2 shops at each location	3 Shops 5 Days per Week 1 Shop 4 Days per Week	<ul style="list-style-type: none"> <li>– 2 Shops 7:00 am to 5:00 pm</li> <li>– 2 Shops 7:00 am to 2:00 am</li> </ul>
Winston-Salem	1	All Monday to Friday	1 Shop 6:30 am to 11:00 pm
<b>Oakland</b>	<b>4</b>	<b>All Monday to Friday</b>	<ul style="list-style-type: none"> <li>– <b>3 Shops 7:00 am to 3:30 pm</b></li> <li>– <b>1 Shop 2:30 pm to 11:00 pm</b></li> </ul>

The points below further discuss the data contained in the table.

- Charlotte operates four shops, which provide maintenance services to specific classifications of vehicles. One shop is dedicated to heavy equipment, one shop to both heavy equipment and construction equipment, one shop is the small engine shop and the last shop handles light vehicles. The small engine shop is the only shop with staff working one shift from 6:00 am to 3:00 pm. All other shops operated from 6:00 AM to 10:00 PM.
- Fresno operates three shops. The main shop has a variety of hours ranging from 5:30 am to 12:00 am and is open 6 days of the week (Monday through Saturday). One shop handles repair and maintenance on Police Department vehicles. The Water Yard Shop is staffed from 6:30 am to 9:00 pm, Monday through Friday.
- Fort Worth operates six shops, all of which are open Monday through Friday. Each shop has primary customer departments. One shop provides service to the Transportation Department and the Parks and Community Services Department. Another shop services the Police Department, as well as other functions based in

City Hall. One service center's primary customers are the Solid Waste Division and the Street Department; while another center services the Water / Sewer Department. A fifth service center handles fire apparatus and equipment. The sixth service center is the tire service center and provides services to all city vehicles. Three of these shops operate two shifts: a day shift and a swing shift.

- Kansas City provides fleet services through one main shop with hours from 7:30 am to 11:30 pm Monday through Friday, and two satellite shops with hours from 7:30 am to 4:00 pm, Monday through Friday.
- Sacramento operates eight shops from four locations within the City. As the City reported, one location includes the following shops: maintenance and repair, fire shop, service shop, and body shop. There are two shops, which are located and provide service to police substations. There is also one light duty maintenance shop. Five of these shops operate a day shift and swing shift.
- Long Beach operates four shops, with one primary shop and three satellite shops. These shops, generally, are open from 5:30 am to 8:00 pm.

The overall operating hours of the cities vary, but on the whole are longer than the operating hours provided by the Equipment Services Division. For example, Kansas City and Sacramento both operate their shops until 11:30 pm. Virginia Beach and Fort Worth operate shops until 2:00 am and 1:30 am, respectively.

At present, the Equipment Services Division only operates a swing shift for the sweeper shop, which is open during the swing shift from 2:30 pm until 11:00 pm. The impact of this limited shift assignment results, in part, in problems with the timeliness of the completion of work orders. The Division should be completing 80% of work orders within one workday and 90% of work orders within three workdays. The Section falls far short of this objective as the data below indicates.

- For the Edgewater Auto Shop, for FY 2007-08, 44% of the work orders were completed within one workday, and 64% within three workdays.
- For the Coliseum Truck Shop, 34% of the work orders were completed within one workday, and 42% within three workdays.

- For the Coliseum Construction Shop, 9% of the work orders were completed in one workday and 19% within three workdays.

The Division should expand the extent of services provided during the swing shift. Each of the three shops (the heavy equipment and the automotive equipment shops) should assign some of their mechanics and mechanic service workers to a swing shift. Accomplishing this adjustment will require adjustments in the classification structure for the Section and the operations of the Division. These proposed adjustments are presented below.

- **Establish a classification of Lead Heavy Equipment Mechanic and Lead Automotive Mechanic.** This classification would be responsible for leading and participating in the work of Heavy Equipment Shop and the Automotive Shop for the swing shift. There would be a need for three of these positions – two for the heavy equipment shops and one for the automotive shop. The classification should be compensated at a rate between the mechanic classification and the mechanic supervisor classification. The estimated annual cost in terms of salaries and fringe benefits for establishing this classification would approximate \$43,000. This represents the incremental cost for promoting existing staff in the Division to these new classifications.
- **Two Equipment Parts Specialists would need to be assigned to the swing shift.** One of these two positions would be assigned to the facility at 5050 Coliseum Way and the other at the facility at 7171 Edgewater Drive.
- **The Mechanics and Equipment Parts Specialists assigned to the swing shift would need to be compensated for shift differential.** The estimated cost would be \$5,000 annually per Mechanic or Equipment Parts Specialist assigned to the swing shift. The total cost would approximate \$50,000 annually. This presumes three to four Mechanics from the Automotive Shop and the Heavy Equipment Shop would be assigned to the swing shift.

The estimated annual cost for implementing a swing shift is presented in the table that follows.

Recommendation	Annual Cost Increase
Establish a Lead Automotive Mechanic and Lead Heavy Equipment Mechanic and promote three mechanics to these positions.	\$43,000
Assign two Equipment Parts Specialists and six to eight Mechanics to the swing shift at the Automotive Shop and the Heavy Equipment Shop.	\$50,000

**Recommendation #84: The Equipment Services Division should expand the use of a swing shift for the automotive shop and the heavy equipment shop.**

**Recommendation #85: Establish a classification of Lead Heavy Equipment Mechanic and Lead Automotive Mechanic. Reclassify one Heavy Equipment Mechanic and two Automotive Mechanic positions to lead mechanic. Promote three mechanics to these lead mechanic positions.**

**Recommendation #86: Assign two Equipment Parts Specialists and six to eight Mechanics to the swing shift at the Automotive Shop and the Heavy Equipment Shop.**

## **(2) Enhance The Preventive Maintenance of the Fleet.**

Properly scheduled, periodic preventive maintenance is the most important component of a cost-effective fleet. There are indications that the Section is meeting preventive maintenance requirements for some portions of the fleet, but is challenged in other areas. These indications are presented below.

- The Edgewater Small Equipment completed preventive maintenance 7 calendar days beyond the due date at the median during fiscal year 2007 – 08.
- The Coliseum Truck Shop completed preventive maintenance 25 calendar days beyond due date at the median during fiscal year 2007 – 08.
- The Coliseum Construction Shop completed preventive maintenance 72 calendar days beyond due date at the median during fiscal year 2007 – 08.
- The Construction Night Shift completed preventive maintenance 276 calendar days beyond due date at the median during fiscal year 2007 – 08.
- The Edgewater Auto Shop completed preventive maintenance 89 calendar days beyond due date at the median during fiscal year 2007 – 08.

A number of steps should be taken to address these challenges and assure the fleet receives the proper level of preventive maintenance. These steps are identified in the paragraphs below.

- **Fleet Focus FA Should be Utilized to E-Mail Operating Departments the Preventive Maintenance Schedule and Enable Managers and Supervisors to Monitor Preventive Maintenance and Identify Equipment Overdue for Preventive Maintenance.** The equipment maintenance information system – Fleet Focus FA – has the capacity to e-mail operating departments when their vehicles are due for scheduled preventive maintenance. This e-mail capacity should be utilized to notify customers when their vehicles are scheduled for preventive maintenance.

At the same time, Fleet Focus FA has the capacity to identify and print those units overdue for preventive maintenance. The Division should print this report weekly (for the previous week) and the Section should utilize these reports to assure that vehicles overdue for preventive maintenance get into the shop for preventive maintenance.

**Recommendation #87: Fleet Focus FA should be utilized to e-mail operating departments when their vehicles are due for preventive maintenance and to enable the Equipment Services Division and Equipment Supervisors and Heavy Equipment Supervisors to identify equipment overdue for preventive maintenance.**

- **A Preventive Maintenance Schedule Should Be Completed On A Weekly Basis.** The Division should send preventive maintenance notifications to departments via e-mail notifying them that their equipment is due for preventive maintenance.

The Division should schedule a vehicle for preventive maintenance for a particular week. This would help the Division to more effectively manage its workload and equitably distribute this workload throughout the month. The accountability of customer departments to work with the Division and bring in their equipment that is scheduled for preventive maintenance should be clarified in service level agreements.

Fleet Focus FA has the capacity to set up table codes that specify the preventive maintenance schedule. This capacity should be utilized to specify the specific week that equipment is scheduled for preventive maintenance. Fleet Focus FA also has the capacity to e-mail customers that their equipment is due for preventive maintenance. The Equipment Services Division should utilize this capacity to e-mail customers the specific week their equipment is scheduled for preventive maintenance of their equipment.

**Recommendation #88:** The Equipment Services Division should work with the departments to develop a weekly preventive maintenance schedule that schedules preventive maintenance evenly across the month and assigns each vehicle to a particular week of the month.

**Recommendation #89:** Specify the weekly schedule for each piece of equipment in Fleet Focus FA within the table codes.

- **The Equipment Supervisors and Heavy Equipment Supervisors Should be Held Accountable For Assuring That the City's Fleet Consistently Meets the Schedule for Preventive Maintenance.** The Equipment Services Division should develop and implement a policy regarding preventive maintenance. That policy should contain the following elements:
  - The Fleet Supervisors will maintain a preventive maintenance / safety inspection schedule for all equipment in accordance with manufacturer's recommendations and other acceptable fleet management practices.
  - The Equipment Supervisors and Heavy Equipment Supervisors will ensure that this information is properly entered and maintained in the fleet management work order and records system (Fleet Focus FA). As a reminder to vehicle operators, the program supervisors to whom the equipment is assigned will be e-mailed reminders by the Fleet Supervisors indicating when the equipment is due for equipment maintenance.
  - The Equipment Supervisors and Heavy Equipment Supervisors will monitor those vehicles that are past due for preventive maintenance / safety inspections and prepare a memorandum for the Equipment Service Superintendent's signature to the appropriate agency / department head listing those vehicles requiring immediate servicing.
  - All fleet equipment records will be reviewed on a yearly basis to ensure that the preventive maintenance schedule intervals are sufficient. These reviews will consider cost, downtime and equipment effectiveness. If indicated during the examination of the records, a more detailed review will be made concerning equipment reliability and/or operator misuse. During these reviews, the equipment replacement schedule will be adjusted as needed to ensure the equipment is replaced at the end of its economical life.

The Equipment Supervisors and Heavy Equipment Supervisors should be clearly assigned responsibility for managing the preventive maintenance program for the Section. The Equipment Supervisors and Heavy Equipment Supervisors should complete the tasks presented below to improve the scheduling of the preventive maintenance program.



- Based on Fleet Focus FA, develop a weekly preventive maintenance schedule to assure all vehicles requiring preventive maintenance in a particular week are brought in on a timely basis.
- Send out weekly e-mail notices to customers using Fleet Focus FA notifying department / division management / supervisors that preventive maintenance is needed on their vehicle with a date the vehicle should be brought in for service.
- Monitor the weekly schedule to make sure vehicles get in for preventive maintenance. If vehicles are not brought in as scheduled, send overdue notices to the appropriate department / division manager. If a response is not received, follow-up with the appropriate department manager.
- Assign a preventive maintenance work order and preventive maintenance checklist to the appropriate Mechanic or Service Worker. Note any special instructions based on the vehicle's maintenance history.
- Periodically conduct quality control checks on work performed by Mechanics and Service Workers to ensure preventive maintenance was completed properly.
- Review the completed preventive maintenance work order and preventive maintenance checklist.
- Close out the preventive maintenance work order.
- Notify the division that the vehicle is ready for pick-up using e-mail.

The Equipment Supervisors and Heavy Equipment Supervisors should to be held accountable for playing an active, involved role in supervising the preventive maintenance program of the fleet.

**Recommendation #90: Equipment Supervisors and Heavy Equipment Supervisors should be held accountable for implementation and supervision of a preventive maintenance scheduling system.**

**(3) The Equipment Services Division Should Implement a “Quick Lube” Concept For Light And Medium Equipment.**

While the preventive maintenance performed by the Division differs from Jiffy Lube, customers with whom the MCG discussed this issue do not appreciate these

differences. The MCG recommends that the Division implement a “quick lube” concept only for light and medium equipment, excluding emergency response vehicles.

For example, the Equipment Services Division of the city of St. Petersburg, Florida introduced a number of changes to enable the division to better compete with the private sector. One of these changes was the introduction of a “quick lube” concept.

Before implementation of this concept, city employees had to drop their vehicle off a day or more ahead of time of the scheduled preventive maintenance. Now, these same city employees can wait for the completion of the preventive maintenance that ordinarily requires twenty (20) minutes.

The specifics of this concept as it has been implemented in St. Petersburg, Florida are described below.

- The “quick lube” service is available only on Tuesdays and Wednesdays;
- Operating departments must call ahead and schedule this type of preventive maintenance;
- This type of preventive maintenance is not available each and every time. St. Petersburg will provide the “quick lube” three times at 3,000-mile intervals. The fourth preventive maintenance is a comprehensive stem-to-stern inspection.
- The “quick lube” involves a change of oil and oil filter, checking all fluids and topping the fluids off, checking all the lights and tires, checking wiper blades, and vacuuming the interior.

St. Petersburg reports this “quick lube” concept has been well received by their customers.

**Recommendation #91: The Equipment Services Division should implement a “quick lube” concept only for light and medium equipment, excluding emergency response vehicles.**

**(4) The Equipment Services Division Should Set Objectives for Chargeable Hours by Its Technicians and Hold them Accountable for Meeting Those Objectives.**

The technicians in the Division do not consistently meet benchmarks for hours charged to work orders. This results in an increase in overhead costs and an increase in the hourly labor rate charged by the Division to recover its costs.

The Division should set benchmarks for chargeable hours per technician of 125 hours a month.

The time charged to work orders by the technicians of the Division in fiscal year 2007 – 08 is summarized below and presented in more detail in the exhibit following this page.

- The Coliseum construction shop technicians meet or exceed this target with two exceptions.
- Two of the technicians at the Construction Night Shift technicians meet or exceed this target, while two technician do not.
- Only one technician in the Coliseum Truck Shop meets this target.
- Two technicians at the Edgewater Auto Shop meet this target.
- None of the technicians in the Body / Paint Shop meet the target.
- The technician assigned to the Machine shop does not meet this target.
- Only one technician in the Edgewater Small Equipment shop meets this target.
- None of the staff assigned to the Hall of Justice to maintain police vehicles approach this target, each charging less than 5 hours in the twelve months to repair orders.

## Exhibit 10 (1)

Labor Hours Charged to Repair  
Orders in FY 2007-08

	Total Labor Hours Charged to Repair Orders	Average Labor Hours Charged to Repair Orders Per Month	% of Objective
<b>Coliseum Construction Shop</b>			
Technician #1	1,792	149.3	119%
Technician #2	2,010	167.5	134%
Technician #3	1,551	129.3	103%
Technician #4	1,758	146.5	117%
Technician #5	1,146	95.5	76%
Technician #6	1,557	129.8	104%
Technician #7	883	73.6	59%
<b>Construction Night Shift Shop</b>			
Technician #1	1,298	108.2	87%
Technician #2	1,809	150.8	121%
Technician #3	1,459	121.6	97%
Technician #4	1,668	139.0	111%
<b>Coliseum Truck Shop</b>			
Technician #1	1,451	120.9	97%
Technician #2	704	58.7	47%
Technician #3	865	72.1	58%
Technician #4	1,320	110.0	88%
Technician #5	85	7.1	6%
Technician #6	868	72.3	58%
Technician #8	1,292	107.7	86%
<b>Edgewater Auto Shop</b>			
Technician #1	925	77.1	62%
Technician #2	1,533	127.8	102%
Technician #3	1,234	102.8	82%
Technician #4	882	73.5	59%
Technician #5	81	6.8	5%
Technician #6	1,453	121.1	97%
<b>Edgewater Body / Paint Shop</b>			
Technician #1	1,339	111.6	89%
Technician #2	859	71.6	57%
Technician #3	1,176	98.0	78%
<b>Edgewater Machine Shop</b>			
Technician #1	1,110	92.5	74%
<b>Edgewater Small Equipment Shop</b>			
Technician #1	589	49.1	39%
Technician #2	1,050	87.5	70%
Technician #3	1,446	120.5	96%
Technician #4	1,117	93.1	74%
Technician #5	1,359	113.3	91%

**Exhibit 10 (2)**

	<b>Total Labor Hours Charged to Repair Orders</b>	<b>Average Labor Hours Charged to Repair Orders Per Month</b>	<b>% of Objective</b>
<b>Hall of Justice</b>			
Technician #1	46	3.8	3%
Technician #2	16	1.3	1%
Technician #3	43	3.6	3%
<b>Median</b>			<b>80%</b>
<b>25th Percentile</b>			<b>58%</b>
<b>75th Percentile</b>			<b>97%</b>

Overall, an average of 100 hours was charged to work orders per technician per month or 80% of the benchmark.

The Division should establish a policy regarding labor reconciliation that requires the Fleet Supervisors to review the monthly direct-billed hours report to ensure accountability for all technicians. This same policy should also require the Fleet Supervisors to monitor adherence to these goals and report monthly to the Equipment Services Superintendent and the Equipment Services Manager.

Fleet Focus FA includes a report designed specifically to address this issue. This report will provide the number of direct hours versus indirect hours per technician for any time frame selected.

**Recommendation #92: The Equipment Services Division should set an objective of an average of 125 working hours charged to repair orders per month per technician.**

**Recommendation #93: The Fleet Supervisors should review the monthly direct-billed hours report to ensure accountability for all employees, and report actual adherence to this objective to the Equipment Services Superintendent and Equipment Services Manager on a monthly basis.**

**(5) The Equipment Services Division Should Develop and Implement a Quality Control Policy.**

The Equipment Services Division should develop quality control processes for the repairs performed by the Section. The policy regarding quality assurance should specify that each Fleet Supervisor will take, at random, a vehicle that has been reported as complete in terms of repairs and road test the vehicle, complete a "Quality Assurance Test Report" and review the outcome with the appropriate technician. The Section should set a minimum target of two vehicles a week per supervisor.

**Recommendation #94: The Equipment Services Division should develop and implement a Quality Control policy.**

**(6) The Role Of The Equipment Services Division Staff Assigned to the Hall of Justice Should Be Modified.**

A Police Transportation Supervisor is responsible for the minor repair of police patrol sedans and other police equipment. The Equipment Supervisor supervises four (4) Automotive Equipment Service Workers. This staff is based at the Hall of Justice. The staff check fluids in Police Department vehicles based at the Hall of Justice and perform a myriad of minor maintenance and repairs to minimize equipment downtime such as repairing flat tires, replacing light bulbs, batteries, fan belts, etc. This staff does not perform preventive maintenance of this equipment. Other maintenance and repair requires the transportation of these vehicles to the Equipment Services Section facility at 7101 Edgewater Drive. This staff is assigned day, swing and night shifts, seven days per week.

The five (5) staff are significantly underutilized at the present time. The role of these staff should be modified to perform a higher proportion of maintenance and repair at the Hall of Justice, to reduce the extent of transport of these vehicles to 7101 Edgewater Drive for these services, and further reduce downtime. These staff should not be utilized for checking fluid levels in Police Department vehicles. The staff of the Police Department should be checking fluids themselves as part of their pre-trip inspection of the vehicle they have been assigned.

These staff should not work day, swing and night shifts, seven days per week. These staff should work a day and swing shift Monday through Friday.

The provision of a higher level of maintenance and repair service at the Hall of Justice - will require a maintenance facility to be constructed at this site to enable the provision of this higher level of service. Key elements to consider in the design of this facility are presented below.

- A metal, butler-type building should be utilized for this facility.
- Three repair bays will be necessary. These bays will need to be 16 feet by 30 feet in size or a total of 480 square feet each bay. The three bays would need to comprise a total of 1,440 square feet.
- To determine the building envelope, the repair bay square footage should be doubled. This would result in a 2,880 square foot building envelope.
- The building must be functional and meet codes. This would include:
  - Building and fire codes local interpretations/adaptations;
  - Aisles in shop to meet exiting requirement;
  - Plumbing fixture counts;
  - Ventilation air changes;
  - Electrical outlets - quantity and height;
  - High ceilings to accommodate lifts;
  - Full spectrum light with metal halide fixtures;
  - Handwash facilities;
  - Storage for portable equipment / tool boxes;
  - An open office workstation for processing repair orders, meeting with customers, etc.;
  - Used oil / antifreeze handling system;
  - A compressed air system;
  - An overhead fluid distribution system (oil, water, etc.);



- Drainage/flat floors; and
- A battery room.

The estimated construction cost for the facility would approximate \$400,000, assuming a construction cost of \$140 per square foot.

At the same time, the mix of staffing assigned to this facility should be altered. At the present time, the staff consists of four Auto Equipment Service Workers, and an Equipment Supervisor. This mix should be altered to two Lead Automotive Mechanics and two Auto Equipment Service Workers, with a Lead Automotive Mechanic for each shift: day and swing. The Equipment Supervisor should be shifted to the 7101 Edgewater Drive facility to reduce the spans of control for the other two Equipment Supervisors assigned to that facility.

The cost impact of the recommendations is presented in the table below.

Recommendation	One-Time Cost Increase
Establish two Lead Automotive Mechanics and promote two mechanics to these positions.	\$24,000
Construct an equipment maintenance and repair facility at the Hall of Justice	\$400,000 (One-Time)

**Recommendation #95:** The role of Equipment Services Division staff assigned to the Hall of Justice should be modified to perform a higher proportion of maintenance and repair at the Hall of Justice, reduce the need to transport these vehicles to 7101 Edgewater Drive for these services, and reduce downtime.

**Recommendation #96** The staff of the Police Department should check fluid levels in Police Department vehicles themselves as part of their pre-trip inspection of the vehicle they have been assigned.

**Recommendation #97:** Establish two Lead Automotive Mechanics and promote two mechanics to these positions. Assign these two Lead Automotive Mechanics to the Division's facility at the Hall of Justice.

**Recommendation #98: Construct an equipment maintenance and repair facility at the Hall of Justice.**

**Recommendation #99: The Equipment Services Division staff assigned to the Hall of Justice should not work day, swing and night shifts, seven days per week. These staff should work a day and swing shift Monday through Friday.**

**Recommendation #100: The Equipment Supervisor assigned to the Hall of Justice should be shifted to the 7101 Edgewater Drive facility to reduce the spans of control for the other two Equipment Supervisors assigned to that facility.**

**(7) The City Should Initiate Measures To Increase The Number of Technicians With EVT And ASE Certification.**

Over the next several years, the City should work towards assisting its Mechanics acquiring Emergency Vehicle Technician certification or Automotive Service Excellence (ASE) certification.

The National Fire Protection Association (NFPA) has promulgated a standard – NFPA 1071 – regarding Emergency Vehicle Technician Professional Qualifications. This standard establishes minimum job performance requirements for a person qualified as an emergency vehicle technician who is engaged in the inspection, diagnosis, maintenance, repair, and testing of an fire emergency response vehicle.

NFPA has a long history of promulgating standards for firefighters and fire officers. A great deal of emphasis is placed on maintaining the condition of the apparatus and equipment used by these personnel. NFPA has now promulgated standards for the level of training for the Auto Mechanics that must keep a sophisticated piece of machinery in proper operating order.

At present, none of the Mechanics have obtained EVT certification including those assigned to the maintenance and repair of fire apparatus.

A number of local governments in California have equipment services divisions that have obtained the ASE Blue Seal of Excellence. This requires that not less than 75% of the technicians performing diagnosis and repairs must be ASE certified and that at least one technician must be ASE certified in each area of service offered. Those local governments that have obtained the ASE Blue Seal of Excellence includes, but is not limited to, the following:

- City of San Diego;
- City of Fresno;
- City of Milpitas;
- City of Long Beach;
- City of Santa Clara;
- City of Modesto; and
- City of Roseville.

Some (16%) of the Equipment Services Division staff has obtained Automotive Seal of Excellence certification. These are portrayed in the table below.

<b>Title</b>	<b>Current ASE Certificate</b>
Auto Equipment Supervisor	<b>ASE Truck Master Technician</b> (all ASE certifications), A6 (Electrical/Electronic Systems), A8 (Engine Performance), L1 (Advanced Engine Performance)
Auto Equipment Mechanic	<b>ASE Automobile Master Technician</b> (all ASE certifications)
Auto Equipment Mechanic	A1 (Engine Repair), A4 (Steering and Suspension), A5 (Brakes), A6 (Electrical/Electronic Systems), A7 (Heating/Air Conditioning), A8 (Engine Performance), L1 (Advanced)

Title	Current ASE Certificate
Auto Equipment Mechanic	<b>ASE Automobile Master Technician</b> (all ASE certifications)
Auto Equipment Service Worker	A5 (Brakes), A6 (Electrical/Electronic Systems), A8 (Engine Performance), L1 (Advanced Engine Performance)
Auto Equipment Service Worker	A5 (Brakes), A7 (Heating/Air Conditioning)
Auto Equipment Mechanic	A-5 Electrical/Electronic Systems, A-7 Engine Performance, T-2 Diesel Engine, T-4 Brakes, T-6 Electrical/Electronic Systems, T-7 Heating, Ventilation And AC.
Heavy Equipment Mechanic	T-7 Heating, Ventilation and AC

The City should develop an ongoing training program to increase the level of ASE certifications.

ASE credentials must be recertified every five years. Typically, technicians must renew prior to the expiration date to maintain the incentive pay. Some fleet operations, but not all, reimburse mechanics for the expense of ASE certification.

The City should initiate measures to increase the number of EVT-certified technicians and the ASE-certified technicians in the Equipment Services Division. These measures should include the following:

- The City should be proactive in providing training to its technicians to obtain such certification. The management and supervisory staff should develop a formal training plan for the Mechanics to assure the necessary training in light of continued technological advances in vehicles, equipment, and diagnostic equipment.
- In developing a training plan, the management and supervisory staff should link the skill development of the technicians to an assessment of their strengths and weaknesses.
- The proposed classification of Lead Mechanic should require ASE certification (or obtaining the certification within two years of appointment). The supervisory positions within the Equipment Services Division should require ASE certification (or obtaining the certification within two years of appointment).

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- The City should consider providing financial incentives for EVT and ASE certification. It is unlikely that significant increases in certification can be obtained without some form of financial incentive.

The training process involves identifying the need for training, and selecting and attending appropriate courses. Due to continual and accelerating changes in automotive technology, a rigorous, proactive training program is essential for maintaining the viability of in-house fleet maintenance programs and the credibility of these programs with their customers.

**Recommendation #101: The Equipment Services Division should initiate training and training plans to increase the number of technicians with EVT and ASE certification.**

**Recommendation #102: The proposed classification of Lead Mechanic should require ASE certification (or obtaining the certification within two years of appointment). The supervisory positions within the Equipment Services Division should require ASE certification (or obtaining the certification within two years of appointment).**

**Recommendation #103: The City should consider providing financial incentives for EVT and ASE certification.**

**(8) The Equipment Services Division Should Utilize a Fuel Cooperative to Procure Fuel for the City.**

While fuel prices have declined significantly, the long-term trend in fuel prices is on an upward trend. In the past ten years, the weekly west coast regular conventional retail gasoline prices (cents per gallon) have more than doubled.<sup>23</sup> There is no indication that this trend will not continue going forward. This is significant for the City: the cost of motor vehicle fuel approximates \$3.7 million annually.

The Equipment Services Division should explore participation in a fuel procurement cooperative to reduce the unit costs for fuel. A number of local governments have

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<sup>23</sup> Energy Information Administration, Department of Energy

developed or participated in fuel procurement cooperatives to enable better unit prices through bulk procurement of fuel. Minnesota governments comprising more than 30 metro-area cities, counties, school districts and state agencies have banded together in one such cooperative to purchase more than 5 million gallons of fuel in 2009 in a move that will lock in lower prices and reduce their fuel bills by hundreds of thousands of dollars. Locally, the County of Santa Clara and the cities of San Jose, Santa Cruz and Sunnyvale have purchased fuel cooperatively since 2003-04.

The Equipment Services Division should explore the cost ramifications of participating in the cooperative purchase with the County of Santa Clara and the cities of San Jose, Santa Cruz and Sunnyvale to determine whether it would reduce their unit prices. Sunnyvale is procuring fuel at a unit price that is bid at 0.13% below Oil Price Information Service (OPIS) San Jose average. OPIS is the world's most comprehensive source for petroleum pricing and provides spot price assessments for all refined products. OPIS' refinery prices are considered a preferred benchmark by many United States and international traders.

**Recommendation #104: The Equipment Services Division should explore the cost ramifications of participating in the fuel cooperative purchase with the County of Santa Clara and the cities of San Jose, Santa Cruz and Sunnyvale to determine whether it would reduce their unit prices for fuel.**

**(9) Establish A Fleet Advisory Board For The Equipment Services Division.**

A Fleet Advisory Board is intended to serve as a customer council for the Equipment Services Division. The specific purposes of the Fleet Advisory Board are as follows:

- To consider and recommend policies and strategies for the operation of the Equipment Services Division;

- To consider and recommend the annual rates to be charged customers for maintenance and repair as well as for replacement;
- Establish a means of regular communication between customers and the Equipment Services Division;
- Create a better understanding of the Equipment Services Division through business meetings;
- Provide information to customers necessary to make the most effective and efficient use of the services provided by the Equipment Services Division; and
- Review trends and areas of complaints to deal with the root cause.

This Fleet Advisory Board should be comprised of seven to nine members, representing the small and large customers of the Equipment Services Division and should meet at least quarterly.

**Recommendation #105: The Agency should establish a Fleet Advisory Board to serve as a customer council for the Equipment Services Division.**

**(10) The Equipment Services Division Should Develop And Adopt Service Level Agreements With Its Major Customers.**

Good customer service management stems from an acute sensitivity to the needs and concerns of fleet users, and manifests itself in a set of communication, decision-making, reporting, and feedback processes which encourage fleet users to actively participate in the management, and not simply the use, of vehicles and equipment.

A clear understanding of the needs and concerns of customers is also critical to effectively running a fleet management organization. The understanding by the Equipment Services Division of its customers' needs should not be based solely on informal communication. The lack of a formal customer communication infrastructure can limit its ability to quickly revise its service practices to keep pace with changes in its customers' service needs. Relevant information may be lost or misinterpreted if

communicated only through informal channels. In addition, the lack of a formal communication process can prevent the Equipment Services Division from gathering consistent information with which to evaluate customer satisfaction with its services.

One way to improve customer communication and relations is through the development of detailed service agreements. These agreements should include a description of service procedures, prices and billing procedures, repair priorities, repair authorization limits, performance standards, contact persons, and customer responsibilities. The agreements provide customers with a better understanding of the range of services offered by the fleet services organization and how to access these services. They also establish a clear understanding of how the fleet organization's performance should be judged.

**Recommendation #106: The Equipment Services Division should develop and adopt service level agreements with the major operating departments that it serves.**

**(11) The Equipment Services Division Should Adopt Warranties For Maintenance And Repair Work Performed By The Division.**

The objectives adopted by the Equipment Services Division need consequences to achieve real power with customers. These objectives will help managers and employees understand what is expected, and will provide urgency to the task of changing the way the Equipment Services Division does business with its customers.

To achieve those consequences, the Equipment Services Division should warranty its work. For example, the warranty provided by the Fleet Services Department (FSD) of the City of Winston-Salem in its service level agreement with the Sanitation Division is as follows:



*Repair Warranties. FSD will provide the following repair warranties:*

- General repair work will be warranted for 90 days or 4,000 miles for defective parts or workmanship.
- Parts that have warranty coverage for longer periods will be recouped for the customer.
- Vendor repairs that fail within their warranty period will be recouped for the customer.
- Manufacturer warranties will be recouped for the customer.

The Equipment Services Division should develop such warranties in consultation with the Fleet Advisory Board.

**Recommendation #107: The Equipment Services Division should warranty its maintenance and repair work.**

**(12) The Equipment Services Division Should Provide Cost of Service Statements to Departments on a Monthly Basis.**

Accurate, timely, and detailed data from the Fleet Focus FA information system is critical to the issuance of customer bills. Accurate, timely, and detailed data are important not only for recovering all fleet costs from customers, but also for recovering them properly. Billing customers only for the costs of the goods and services they actually consume is important from the standpoint of treating them fairly and equitably, and complying with generally accepted accounting principles (GAAP).

Customer charges that are based on inaccurate data can send the message to customers that:

- The fleet organization is not concerned about the accuracy of its bills;
- Raise questions in customers' minds as to why a charge-back system is used in the first place; and
- Suggest that the fleet organization's systems and procedures for capturing and

ensuring the quality of data are lax, implying that the organization's work is slipshod in general.

Customer billing is a key point of contact between service provider and customer. If these contacts are tainted by bad information, customer relations are not going to be good. Indeed, in many cases, customer dissatisfaction with the in-house organization that manages and maintains its vehicles stems from either a lack of understanding as to how charge-back rates and billing amounts are derived, or downright suspicion that rates and charges are intentionally manipulated by the fleet organization to hide inefficiencies and stave off calls to outsource certain activities.

The Equipment Services Division should demonstrate its ability to provide accurate, timely, and detailed cost information based upon the data contained in Fleet Focus FA to its customers for the services that it provides. This demonstration should take the avenues presented below.

- The Division should provide each of its customers – General Fund, special revenue fund, or enterprise fund – with point of sale receipts.
- These point of sale receipts should provide detailed information regarding each transaction, the data of the transaction, the nature of the transaction, the labor hours, commercial charges, parts, etc. involved in the transaction, and the costs of those transactions.
- The point of sale receipts should be summarized in monthly reports provided to each department. The information should be provided in electronic form, preferably in an Excel spreadsheet, so that the department can analyze the information.
- The Equipment Services Manager should meet monthly with each department to review the monthly reports and discuss the basis and nature of the costs.

The primary purpose of a charge-back system is not to shuffle money from one fund or account to another, but to promote the cost-effective provision and use of the City's fleet

and Equipment Services Division services.

**Recommendation #108: The Equipment Services Division should provide point of sale receipts for each transaction. The point of sale receipts should be summarized in monthly reports provided to each department.**

**Recommendation #109: The Equipment Services Manager should meet monthly with each department to review the monthly reports and discuss the basis and nature of the costs.**

**(13) Major Customers Should be Provided With Access to Fleet Focus F / A.**

Fleet Focus F / A is the maintenance management software utilized by the Equipment Services Division. Fleet Focus F / A should be established as a web page on the Division's website. Fleet Focus F / A should be utilized to allow users to view Fleet Focus F / A information from any personal computer with access to the website. The customer should be able to view equipment one piece of equipment at a time. The customer should be able to inquire by equipment number or license number, review equipment information, check meter readings, review open work orders, the last preventive maintenance performed, and the preventive maintenance schedule.

Fleet Focus F / A should be utilized to allow the customer to communicate directly with the Division. Any Fleet Focus F / A user should be able to send a service request. The Division can then process this request.

**Recommendation #110: Major Customers should be provided with access to Fleet Focus F / A.**

**5. THE SANITARY SEWER MAINTENANCE SECTION SHOULD IMPROVE ITS MAINTENANCE MANAGEMENT PRACTICES.**

This section of the chapter presents an analysis of the maintenance management practices of the Sanitary Sewer Maintenance Section including whether these staff should conduct sewer tap inspections, the adequacy of preventive maintenance of the

sanitary sewer system, the efficiency with which the crews are being deployed, the extent of sanitary sewer overflows, etc.

**(1) The Requirements for the Sewer Maintenance Leader Classification Should Be Modified To Require A Grade II Collection System Maintenance Certificate Issued by the California Water Environment Association Technical Certification Program.**

The Sewer Maintenance Leader classification is the classification whose incumbents “act in a lead capacity over field crews. Incumbents perform and instruct a crew in more difficult tasks requiring greater skill and knowledge.” The only license presently required is a Class B California Driver’s License.

The class specification should be modified to require a Grade II Collection System Maintenance Certificate issued by the California Water Environment Association Technical Certification Program. A Collection System Maintenance Grade II Certification is designed to demonstrate competency at the skilled or journey level. More specifically, Grade II certification implies competence in the knowledge, skills, and abilities required to perform the essential duties of a skilled Collection System Maintenance Technologist.

Individuals certified as Grade II Collection System Maintenance Technologists are expected to possess acceptable competency when performing the tasks that are necessary for skilled or journey level. These tasks or duties are portrayed below.

- Performs, trains and directs the duties listed for Collection System Maintenance Grade I.
- Inspects, troubleshoots and maintains proper collection system operation using advanced techniques and instruments.
- Conducts confined space entries.
- Performs maintenance and repair of wastewater collection system.

- Provides information and reports on activities as required.
- Provides assistance to individuals, agencies and private organizations with underground service alert (USA) markings, utilities and manholes.
- Plans routine traffic safety at worksites and performs non-routine traffic control under general supervision.
- Resolves routine complaints in an efficient and timely manner.
- Monitors crew performance to ensure adherence to safe work practices and compliance with all applicable regulations, policies and procedures.
- Participates in the development and promotion of safe work practices and procedures.

The requirement for a Collection System Maintenance Certificate issued by the California Water Environment Association Technical Certification Program is a common practice in California.

**Recommendation #111: The Sewer Maintenance Leader classification description should be modified to require a Grade II Collection System Maintenance Certificate issued by the California Water Environment Association Technical Certification Program.**

**(2) The Crew Sizes Used For A Number of Work Activities in the Sanitary Sewer Section Should Be Reduced.**

MCG prepared an analysis of a sample of work orders completed by the Sanitary Sewer Maintenance Section for four weeks in 2007. The analysis indicates that the crew sizes used for a number of work activities in the Section are larger than appropriate. The maintenance management system utilized by the Agency in the 1980's included performance standards. The crew sizes being utilized by the Sanitary Sewer Section exceed these performance standards in many instances, and the experience of the MCG in other local governments. Examples are presented below.

- **Three or four person crew are used to respond to service calls and flush mains, power rod sewer mains, replace manhole covers, etc.** Crews #185, #186, #187, #189, and #195 were using a three or four person crews to respond to service calls and flush mains, power rod sewer mains, replace manhole covers, etc. These crews are using hand rodding equipment. This is obsolete for any work completed in the City's streets. A two-person crew should be utilized. This will require the replacement of the existing equipment utilized by the service crews. These crews use service trucks and hand rodders. The crews should be allocated hydro flusher trucks.
- **A three-person crew is being used for power rodding.** Crew #188, and #192 were using a three-person crew for power rodding. A two-person crew should be utilized. This will require a different type of equipment than used at the present time. One sewer rodder vendor provides a "hands free" rodder that performs the function of cleaning the main with a pre-set pressure, lessening rod breakage in the main, with no buttons to push or levers to move to continue the cleaning once initiated. These power rodders have largely reached the end of their useful life. Their replacement with modern equipment would enable the use of a two-person crew.
- **A six-person crew is being used for construction and repair of sanitary sewer mains.** Crew #191 was using a six-person crew as a construction crew for raising a manhole to grade, repairing and replacing sewer mains, etc. The performance standards developed by the City of Oakland in 1982 indicated that a four-person crew should be utilized, supplemented by a backhoe operator when required. A four-person crew should be utilized supplemented by a backhoe operator when required.

The impact of using larger crew sizes than appropriate is significant. During the four weeks in which work orders were analyzed by the MCG, an additional four or five crews could have been deployed each day with the use of proper crew sizes. With smaller crew sizes, more crews can be deployed to provide high velocity cleaning of sanitary sewer mains without an increase in the total number of staff. The impact of reducing a crew size will only marginally impact the daily productivity of a crew given the lost productivity resulting from travel time. Since only one member of the crew can operate the power rodder, the other crew member of the power rodding crew, for example, is at

that downstream manhole to observe the rodding operation and wait for the rodding cutter.

The cost impact of these recommendations regarding equipment is presented later in this chapter in a discussion regarding sewer equipment replacement and additions.

**Recommendation #112: The crew size used for service calls and power rodding should be reduced to two persons, and the crew size used for construction and repair should be reduced to four persons supplemented by a backhoe operator when required.**

**(3) The Sanitary Sewer Section Should Not Conduct Sewer Tap Inspections; These Inspections Should Be Conducted By the Construction Inspectors in the Department of Engineering and Construction.**

The Sanitary Sewer Section is utilizing its own staff to conduct sewer tap inspections. It is diverting two or three person crews from service calls and preventive maintenance of the sanitary sewer system to conduct these inspections. In some instances, sewer tap inspections was the only work activity for a crew for an entire workday.

This is a highly unusual work practice. In every other instance encountered by the MCG in other local governments, Construction Inspectors in the Department of Engineering and Construction would conduct these construction inspections.

Given the competing demands of the Sanitary Sewer Section, this work practice should cease. The Construction Inspectors in the Department of Engineering and Construction should conduct sewer tap inspections.

**Recommendation #113: The Sanitary Sewer Section should not conduct sewer tap inspections; the construction inspectors in the Department of Engineering and Construction should conduct these inspections.**

**(4) The Sanitary Sewer Collection Maintenance Section Should Develop and Implement A Plan To Reduce the Extent of Sanitary Sewer Overflows.**

In calendar year 2008, the City experienced 205 sanitary sewer overflows. The total volume of sanitary sewage released as a consequence of these overflows was estimated at 62,005, gallons. The causes of these sanitary sewer overflows in 2008 are presented in the table below.

<b>Cause of SSO Blockage:</b>	<b>Number</b>	<b>Percent of Total</b>
Roots	88	42.93%
Grease	42	20.49%
Debris	13	6.34%
Debris from Laterals	0	0.00%
Vandalism	0	0.00%
Animal Carcass	0	0.00%
Construction Debris	0	0.00%
Multiple Causes	40	19.51%
Subtotal for Blockage	183	89.27%
Infrastructure Failure	2	0.98%
Inflow & Infiltration	2	0.98%
Electrical Power Failure	0	0.00%
Flow Capacity Deficiency	0	0.00%
Natural Disaster	0	0.00%
Bypass	0	0.00%
Cause Unknown	18	8.78%
<b>Total</b>	<b>205</b>	<b>100.00%</b>

The number of sanitary sewer overflows exceeds – slightly - that for the City of Los Angeles although the sanitary sewer collection system in Los Angeles is six times as large as that of Oakland.

Most sanitary sewer overflows tend to occur in flat areas close to commercial food establishments due to Fats, Oils and Grease (FOG) and in the Oakland hills areas due to root infiltration. During 2005, the City submitted 61 grease related blockage reports to East Bay Municipal Utility District. During 2006, the City submitted 72 grease related blockage reports to East Bay Municipal Utility District. During 2007, the City submitted 62 grease related blockage reports to East Bay Municipal Utility District. During 2008,



the City submitted 42 grease related blockage reports to the East Bay Municipal Utility District.

The extent of problems with sanitary sewer overflows caused by roots is worse. To address tree root sanitary sewer overflows in the Oakland hills area, the City has contracted for treatment of root chemical control. In 2005, 6,891 linear feet of sewer mains were treated with root chemical control. In 2006, 69,235 linear feet of sanitary sewer mains were treated with root chemical control. In 2007, 54,079 linear feet of sanitary sewer mains were treated with root chemical control.

The City of Oakland experiences a higher than normal number of sanitary sewer overflows per 100 miles of main. The total number of sanitary sewer overflows in calendar year 2007 amounted to 19.8 / 100 miles of mains. This is a little more than five times higher for overflows per 100 miles of mains than forty-one (41) other cities with a population of 100,000 to 500,000 that participated in an American Water Works Association benchmarking survey.<sup>24</sup> In fact, the City's rate of sanitary sewer overflows per 100 miles of main exceeds the 75<sup>th</sup> percentile of these other cities by 400%.

There is increasing recognition of the role played by roots, grease and debris in contributing to overflows. A Water Environment Research Foundation (WERF) study of effective operations and maintenance practices reported that collection system operators ranked sewer main cleaning as the most important maintenance tool utilized.<sup>25</sup> CCTV inspections, lift station inspection, manhole inspection, and root

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<sup>24</sup> American Water Works Association, Benchmarking: Performance Indicators for Water and Wastewater Utilities – Survey Data and Analysis Report, 2005

<sup>25</sup> Water Environment Research Foundation (2003) "Project 01-CTS-20T: Effective Practices for Sanitary

removal, including chemical root control, was also highly valued. A similar survey, conducted as a part of an American Society of Civil Engineers *Optimization of Collection System Maintenance Frequencies and System Performance* study, requested agencies to report an “activity weighting factor as an indicator of the importance of that activity in maintaining their collection system.”<sup>26</sup> The combined “cleaning” activities weights resemble the WERF results (see the table below).

<b>Cleaning - All Types</b>	
Cleaning	17.7%
Root Removal	8.4%
<b>Collection System Rehabilitation</b>	
Mainline	12.6%
Manholes	5.6%
Private Sector I/I Removal	6.1%
Pump Station Service	14.1%
CCTV	10.5%
Flow Monitoring	7.0%
Manhole Inspection	6.4%
Relief Sewer Construction	6.3%
Smoke Testing	3.3%
Private Sector Inspections	2.0%
<b>TOTAL</b>	<b>100.0%</b>

Effective proactive cleaning of the wastewater collection system is one of the central tenets of a successful “Maintenance” component of a Capacity, Management, Operations, and Maintenance (CMOM) program. Utilizing the staff and equipment on an every day basis in a proactive cleaning program preempts pipeline conditions before they can culminate in a stoppage leading to an overflow.

The Infrastructure and Operations Department should develop a formal written plan to address the extent of sanitary sewer overflows. Since most of the sanitary sewer overflows are the result of roots and grease, the plan should stress measures to reduce

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Sewer and Collection System Operations and Maintenance Toolkit”

<sup>26</sup> ASCE (1999), “Optimization of Collection System Maintenance Frequencies and System Performance”

these types of overflows. The elements that this plan should include are presented below.

- **Increase the proportion of the collection system that is treated for roots.** The Sanitary Sewer Section applied root foam to 0.1% of its mains in 2005, 1.3% in 2006, and 1% in 2007. Root intrusion into the sanitary sewer system often leads to the collection of grease and debris. This in turn leads to blockages of sewerage and often sewer overflows. As trees grow, roots seek water sources and can penetrate loose-fitting joints of older, clay sewer mains and brick manholes. Chemical control of root intrusion is a widely accepted industry practice that utilizes herbicide-based chemicals to kill the roots in the pipe and pipe zone.

The section should enhance the effectiveness of its chemical root control program. This should include enhanced television monitoring to determining the condition of the pipe, severity of the root problem, best application of chemicals, and results after the process. A CCTV crew should evaluate the pipe and assign a severity rating for root infestation so that pipes can be prioritized for chemical application. The prioritization should also be based upon those sewer basins that have had the greatest number of sanitary sewer overflows caused by roots. Any sewer pipes that have overflowed because of roots should be placed in the root control program with a twenty-four (24) month root treatment schedule.

Overall, the proportion of the sanitary sewer system that receives ongoing root chemical control will likely need to increase beyond the 1% of the system to approximately 5% of the system. This will likely be necessary to deliver a twenty-four month schedule of root chemical control.

This is a more cost-effective approach than having power rodder crews cleaning mains on a three-month cycle. The analysis of work orders for a one month period in 2007 found a power rodder crew cleaning mains on a three month routine on seven workdays or parts of those seven workdays. This should be unnecessary with an effective chemical root control program.

The specific process that should be utilized to enhance the chemical root control program should be as follows:

- Pre-clean the sewer pipes with a power rodder;
- Apply the root treatment chemical two (2) months after the cleaning;
- Post-clean the sewer pipe with a power rodder 6 months after the chemical application;

- Re-clean the sewer pipes with a power rodder 18 months after the chemical application; and
- Repeat the cycle 24 months after initial chemical application.

The estimated cost impact of the higher level of chemical root control is presented in the table below.

Recommendation	Annual Cost Reduction	Recommendation	Annual Cost Increase
N.A.	\$0	Increase the proportion of sanitary sewer mains receiving a chemical root control treatment to 5% annually.	\$220,000

**Recommendation #114: The Sanitary Sewer Section should increase the proportion of the sanitary sewer system receiving chemical root control from 1% to 5% annually.**

**Recommendation #115: The Sanitary Sewer Section should adopt a process for chemical root control that includes power rodding the pipes before the chemical root control, power rodding the pipes 6 months after the chemical root control, and power rodding the pipes again 18 months after the chemical root control.**

- **Increase the effectiveness of the fats, oils, and grease program.** The City of Oakland has approximately 1,200 food service establishments that generate fats, oils and grease. The Sanitary Sewer Section contracts with the East Bay Municipal Utility District (EBMUD) for administration of the fats, oils, and grease program. This is not unusual in the East Bay; other local governments contract with EBMUD for the administration of their program as well including Alameda, Albany, Berkeley, Emeryville, Oakland, and the Stege Sanitary District. The program consists of permitting, inspections, and multiple language outreach to food service establishments (FSE's) in the City. Permits are issued by EBMUD to all FSE's; the permit requires the installation of grease interceptors under certain circumstances, maintenance of all installed grease removal devices at facilities, and recordkeeping of maintenance activities. However, it is clear that the current approach to controlling the discharge of fats, oils, and grease into the sanitary sewer system is not adequate. During 2005, the City submitted 72 grease-related blockage reports to East Bay Municipal Utility District. During 2006, the City submitted 127 grease-related blockage reports to East Bay Municipal Utility District. During 2007, the City submitted 206 grease-related blockage reports to East Bay Municipal Utility District. There is a clear increase in the trend of grease related blockages: these types of blockages have nearly tripled since 2005.

The Sanitary Sewer Section should take a number of steps to increase the effectiveness of enforcement of the Fats, Oils, and Grease program. These steps should include the steps noted below.

- **The Section should require that EBMUD inspect food service establishments on an annual basis, and conduct follow-up establishments of those establishments with deficiencies.** Food service establishments should be inspected annually for compliance with the City's requirements for disposal of fats, oils, and grease, and to assure the proper operation of grease removal devices. Follow-up inspections should be performed of any food service establishment with deficiencies. EBMUD should issue notices of violation for food service establishments that are not in compliance.
- **The Section should require that EBMUD conduct inspections of food service establishments within 1,000 feet of a sanitary sewer overflows, when fats, oils, or grease have been determined to be the cause of the sanitary sewer overflow.** This inspection should be focused on determining whether these food service establishments caused the sanitary sewer overflow, to issue notices of violation for observed violations.
- **Management of the Sanitary Sewer Section should actively monitor the effectiveness of the EBMUD fats, oils, and grease program.** The responsibility for addressing FSE's with repetitive discharge of fats, oils, and grease into the sanitary sewer system cannot be delegated to EBMUD. While EBMUD may be responsibility for administering the program, the managers of the section are responsible for assuring that this program is effective in reducing spills.
- **The Sanitary Sewer Section should audit the enforcement approaches utilized by EBMUD.** EBMUD indicated that an escalating (progressive) enforcement structure is utilized for food service establishments. The section should request information from EBMUD regarding the specific businesses in Oakland for which this escalating structure is being utilized. The section should track the enforcement approach utilized by EBMUD, the extent to which FSEs are fined for fats, oils, and grease discharges or assessed clean-up fees (based on SSO evidence or CCTV records). This approach should be typically used in conjunction with education, or an incentive-based program. EBMUD enforcement actions are implemented when an FSE has refused or failed to participate in the educational programs or has violated compliance requirements. The Sanitary Sewer Section should develop a formal, written enforcement response plan defining an escalating response strategy to violations; that plan should be provided to the Sanitary Sewer Section.

- **The Sanitary Sewer Section should request that EBMUD provide information regarding the FSE's that it has required to install grease removal equipment in the three years from 2005 through 2007.** EBMUD has indicated that it requires the installation of grease interceptors for FSE's that cause or contribute to sanitary sewer overflows or blockages. The section should request information from EBMUD regarding the number and FSE locations of grease interceptors that it has required to be installed in Oakland in the past three calendar years: 2005 through 2007.
- **The Sanitary Sewer Section should compile a list of those FSE's that are most frequently causing or contributing to sanitary sewer overflows or blockages and request additional monitoring by EBMUD.** All FSE's should be inspected annually. Those FSE's that cause or contribute to sanitary sewer overflows or blockages should receive additional monitoring by EBMUD. This monitoring by EBMUD should include the following elements:
  - Grease interceptor inspections – measurement of grease / water / solids;
  - Determination of compliance with Permit requirements;
  - Video inspections of laterals;
  - Video inspections of main lines; and
  - Distribution of educational materials.

Follow-up tasks by EBMUD should be done as a result of these inspections, including possible requirements to install a grease interceptor, increase the frequency of grease interceptor pumping, and EBMUD verification that required grease interceptor repairs have been made.

- **The Sanitary Sewer Section should increase the high velocity cleaning frequency of "hot spots."** An analysis of work orders for a one-month period in 2007 found only one day in which a high velocity hydroflusher was cleaning sanitary sewers for preventive maintenance – heavy grease. In another instance, two crews in two other workdays dumped "bug" bags for grease into a manhole. The high velocity cleaning of "hot spots" should be allocated a higher priority; when a sanitary sewer overflow is caused or contributed to by fats, oils, or grease, the Section should add that pipe reach to its "hot spot" list. These "hot spots" should be cleaned on a one to a three-month schedule depending on the severity of the problem. The Section should maintain an inventory in a Microsoft Access database of these "hot spots" that is linked to Azteca Cityworks.

**Recommendation #116:** The Sanitary Sewer Section should require that EBMUD inspect food service establishments on an annual basis, and conduct follow-up inspections of those establishments with deficiencies.

**Recommendation #117:** The Sanitary Sewer Section should require that EBMUD conduct inspections of food service establishments within 1,000 feet of a sanitary sewer overflow when fats, oils, or grease have been determined to be the cause of the sanitary sewer overflow.

**Recommendation #118:** The Sanitary Sewer Section should actively monitor the effectiveness of the EBMUD fats, oils, and grease program.

**Recommendation #119:** The Sanitary Sewer Section should audit the enforcement approaches utilized by EBMUD.

**Recommendation #120:** The Sanitary Sewer Section should request that EBMUD provide information regarding the food service establishments that it has required to install grease removal equipment in the three years from 2005 through 2007 (excluding new construction).

**Recommendation #121:** The Sanitary Sewer Section should compile a list of those food service establishments that are most frequently causing or contributing to sanitary sewer overflows or blockages and request additional monitoring by EBMUD.

**Recommendation #122:** The Sanitary Sewer Section should increase the high velocity cleaning frequency of “hot spots.”

**Recommendation #123:** When a sanitary sewer overflow is caused or contributed to by fats, oils, or grease, the Sanitary Sewer Section should add that pipe reach to its “hot spot” list. These “hot spots” should be cleaned on a one to a three-month schedule depending on the severity of the problem.

**Recommendation #124:** The Sanitary Sewer Section should maintain an inventory in a Microsoft Access database of these “hot spots” that is linked to Azteca Cityworks.

**(5) The Sanitary Sewer Section Should Enhance the Preventive Maintenance of The Sanitary Sewer Collection System.**

There are a number of aspects of the services provided by the Sanitary Sewer Section that do not meet benchmarks regarding the preventive maintenance of the sanitary sewer collection system. These aspects are presented below.

- A total of 2.6% of the sewer system was CCTV'd in FY 2006-07. This is 35% of the benchmark.
- Sanitary Sewer Collection reported that a total of 113 miles of sewer mains were power rodded and 105 miles on mains were hydro flushed in FY 2006-07. This is equivalent to 21% of the mains. This is 70% of the benchmark.

This contributes, at least in part, to a higher than normal number of sanitary sewer overflows per 100 miles of main.

The Sanitary Sewer Section should increase the level of preventive maintenance of the collection system. This increased level of preventive maintenance is presented in the exhibit following this page. Important points to note concerning the proposed annual work program for preventive maintenance are presented below.

- Three two-person crews should be dedicated to high velocity cleaning of the sanitary sewer collection system. This will need to be supplemented a third crew for 50% of the fiscal year to meet benchmarks. It should be noted that the MCG recommended a higher level of service than suggested by benchmarks given the City's problems with sanitary sewer overflows. The MCG proposes that the City's sanitary sewer system be cleaned on a two-year cycle with high velocity cleaning equipment.
- One two-person crew should be dedicated to power rodding the sanitary sewer collection system.
- One three-person crew should be dedicated to CCTV inspection of the sanitary sewer collection system. This will need to be supplemented a second crew for 40% of the fiscal year to meet benchmarks.

This enhanced preventive maintenance of the sanitary sewer collection system would require eleven (11) staff. There is sufficient staff authorized within the Section to provide this enhanced preventive maintenance.

**Recommendation #125: The Sanitary Sewer Section should enhance the level of preventive maintenance for the sanitary sewer collection system.**



## Exhibit 11

## Preventive Maintenance Annual Work Program For the Sanitary Sewer Section

Activity Name	Inventory Measure	Units	Level of Service	Annual Work Quantity	Avg. Daily Prod.	Annual Crew Days	Crew Size	Annual Staff Days
Sewer Main Cleaning -Hydroflusher	Miles	1,034	0.5	517.0	0.65	795.4	2	1,590.8
Sewer Main Cleaning - Rodder	Miles	1,034	0.1	103.4	0.46	224.8	2	449.6
Sewer Main CCTV	Miles	1,034	0.08	82.7	0.26	318.2	3	954.5

**Avg. Daily Prod. = Average Daily Productivity**

**(6) The City's Sanitary Sewer Collection System Should be Divided Into Zones With a Specific Hydroflusher and / or a Rodding Crew Assigned to Each Zone for Purposes of Preventive Maintenance.**

The Sanitary Sewer Section should enhance the preventive maintenance of the sanitary sewer system by using appropriate crew sizes to increase to number of crews and using these additional crews to increase the number of staff. However, it is important to maximize the productive time of the crews assigned to preventive maintenance. Effective spatial scheduling of the daily locations of the sewers to be cleaned and selection of equipment that minimizes the travel and on-site setup time will significantly impact the efficiency of the high velocity hydroflusher and the power rodder crews. Between 25% and 50% of a day is spent in travel among the jobsites. Another 25% to 33% is invested in the jobsite set-up. In total, approximately 50% to 75% of the effort involves operations preparatory to the actual cleaning. The scheduling advantage is maximized when performing proactive maintenance, not reactive emergency cleaning, which can minimize travel between jobsites and the jobsite set-up.

On average, local governments that clean sewer mains by area have production levels 25% higher than those that clean by line segment due to the reduced number of crew / equipment setups and reduced travel time.

To facilitate the productivity of these crews, the City's sanitary sewer collection system should be divided into zones. A crew or crews should be assigned to the cleaning of all of the sanitary sewers in each zone; these should typically by high velocity hydroflusher crews with power rodder crews being used in conjunction with the chemical root control program. Each zone should require approximately five crew weeks to clean.

**Recommendation #126: The City's sanitary sewer collection system should be divided into zones with a specific hydroflusher assigned to each zone.**

**Recommendation #127: High velocity hydroflusher crews should be assigned to the preventive maintenance cleaning of all of the City's sanitary sewers in each zone.**

**(7) Seven Pieces of Equipment Assigned to the Sanitary Sewer Section Should Be Replaced and Three Additional Pieces of Equipment Acquired.**

The table below presents the fleet assigned to the Sanitary Sewer Section.

Maintenance Class	Vehicle Number	Year	Class
6776	4120	2001	Power Rodder
6775	4168	2001	Sewer Flusher Combo
6775	4169	2000	Sewer Flusher Combo
6775	4165	2000	Sewer Flusher Combo
6775	4796	1997	Sewer Flusher Combo
6775	4797	1997	Sewer Flusher Combo
6776	4117	2001	Power Rodder
6776	4118	2001	Power Rodder
6776	4119	2001	Power Rodder
4424	4069	2001	CCTV Van
4424	4070	2001	CCTV Van
2423	4071	2001	CCTV Van
2423	4914	1999	CCTV Van

Five of the equipment exceed reasonable replacement guidelines and should be replaced. This includes four sewer flusher combo's (#4169, #4165, #4796, and #4797) and one of the CCTV trucks (#4914) will exceed its replacement schedule. The five pieces of equipment should be replaced immediately. The estimated capital outlay cost of the replacement of this equipment is presented in the table below.

Recommendation	One-Time Capital Outlay
Replace four (4) sewer flusher combos (jet vectors).	\$800,000
Acquire three (3) additional sewer flusher combos (jet vectors)	\$600,000
Replace two (2) power rodders	\$120,000
Replace one (1) CCTV Truck	\$166,000

**Recommendation #128:** The Equipment Services Division should replace four (4) sewer flusher combo's (#4169, #4165, #4796, and #4797) and one of the CCTV trucks (#4914) assigned to the Sanitary Sewer Section.

**Recommendation #129:** The Equipment Services Division should replace two power rodders with "hands free" rodders that perform the function of cleaning the main with a pre-set pressure with no buttons to push or levers to move to continue the cleaning once initiated.

**Recommendation #130:** The Sanitary Sewer Section should acquire three (3) additional sewer flusher combo's.

**(8) The Sanitary Sewer Section Should Acquire a Self-Propelled Easement Power Rodder.**

At the present time, the Sanitary Sewer Section is using sectional hand rodding equipment to clean sewer mains located in easements. This is both dangerous and hinders the productivity of the staff in cleaning these sewer mains.

The sanitary Sewer Section should acquire a self-propelled easement power rodder. This equipment holds 600 feet of standard hose, has a 360 degree turning radius, has power steering, 4-wheel drive, 20 horsepower engine, and outrigging stabilizers. The cost impact of the acquisition of this equipment is presented in the table below.

Recommendation	One-Time Capital Outlay
Replace four (4) sewer flusher combos (jet vactors).	\$25,000

**Recommendation #131:** The Sanitary Sewer Section should acquire a self-propelled easement power rodder.

**(9) The Sanitary Sewer Section Should Implement A Quality Control Program for Sewer Main Cleaning.**

The quality control program should be designed to assure that the hydroflusher and power rodding crews meet acceptable levels of quality when these crews clean sewer mains. The program should be structured as presented below.

- Every pay period, the Sanitary Sewer Public Works Supervisor II should select two crew leaders. Note the Public Works Supervisor II should select different crew leaders each pay period, so that all personnel are reviewed periodically.
- Select a total of fifty (50) sewer reaches (manhole to manhole) every pay period for two (2) crew leaders (twenty five (25) reaches for each crew leader) for CCTV-inspection by the Sections own CCTV trucks.
- The CCTV crews video the reaches and the CCTV videos are submitted to the Public Works Supervisor II.
- The Public Works Supervisor II assigns a score of Pass or Fail for every sewer reach. The scores/ratings are forwarded to the crews and discussed with the crews.
- The Public Works Supervisor II prepares a quality control report. The report and a copy of the relevant videos are provided to the Infrastructure Maintenance Manager.
- The Infrastructure Maintenance Manager completes the review of the report and the videos as appropriate.

A passing grade should be conditioned on 95% of the y pipes' original capacity as measured by pipe diameter.

**Recommendation #132: The Sanitary Sewer Section should develop and deploy a quality control program for the cleaning of sewer mains.**

## **6. THE DRAINAGE MAINTENANCE SECTION SHOULD IMPROVE ITS MAINTENANCE MANAGEMENT PRACTICES.**

This section of the chapter presents an analysis of the maintenance management practices of the Drainage Maintenance Section including the adequacy of preventive maintenance of the stormwater sewer system, and the efficiency with which the crews are being deployed.

### **(1) The Crew Sizes Utilized By the Drainage Maintenance Section For Cleaning Watercourses Should Be Reduced.**

The MCG analyzed work orders completed of the Section. This indicated that the Drainage Section was typically using a four-person crew or a larger crew to clean

watercourses. The maintenance management system utilized by the Agency in the 1980's included performance standards. The performance standard that was developed for watercourses was three-persons.

**Recommendation #133: The crew size used for cleaning of watercourses should be reduced to three persons supplemented by the use of inmate labor.**

**(2) The Productivity of the Staff Assigned To the Drainage Maintenance Section Should Be Improved.**

The MCG analyzed work orders completed by the Drainage Maintenance Section. On average, the crew or crews assigned to cleaning drain inlets inspected and cleaned an average of 15 to 16 inlets per crew day. This data is presented in the table below.

Date in 2007	Number of Drain Inlets Cleaned by Crew #1	Number of Drain Inlets Cleaned by Crew #2
10-Nov	12	N/A*
14-Nov	10	N/A
15-Nov	11	N/A
16-Nov	15	N/A
17-Nov	20	N/A
19-Nov	21	N/A
20-Nov	20	N/A
30-Nov	15	N/A
1-Dec	10	N/A
2-Dec	12	N/A
3-Dec	11	N/A
6-Dec	N/A*	16
7-Dec	N/A	17
9-Dec	18	N/A
10-Dec	18	N/A
11-Dec	21	18
12-Dec	N/A	21
13-Dec	16	17
17-Dec	23	10
18-Dec	21	N/A
19-Dec	11	N/A
26-Dec	15	N/A
27-Dec	10	N/A
<b>Daily Average</b>	<b>15.2</b>	<b>16.5</b>

\* In the table above, N/A refers to workdays in which the crew or crews were not cleaning drain inlets.

A crew should be able to clean and inspect 20 drain inlets per crew day. This is the same average daily productivity that the MCG has utilized elsewhere in instances in

which a jet vactor was being utilized to clean drain inlets, a slower process than using a scoop shovel or clam in instances in which the drain inlet does not contain much debris.

**Recommendation #134: The managers and supervisors of the Drainage Section should manage the work output of the staff to bring the productivity levels within the appropriate range of 20 drain inlets per crew day.**

## **7. THE STREETS AND SIDEWALKS MAINTENANCE SECTION SHOULD IMPROVE ITS MAINTENANCE MANAGEMENT PRACTICES.**

This section of the chapter presents an analysis of the maintenance management practices of the Streets and Sidewalks Maintenance Section including the adequacy of preventive maintenance of the street system, and the efficiency with which the crews are being deployed.

### **(1) The Crew Sizes Used For A Number of Work Activities in the Streets and Sidewalks Section Should Be Reduced.**

The MCG analyzed work orders for the Section for a four-week period. Based on this analysis, the crew sizes used for a number of work activities in the Section are larger than appropriate. The maintenance management system utilized by the Agency in the 1980's included performance standards. The crew sizes being utilized by the Streets and Sidewalks Section exceed these performance standards in many instances, and the experience of the MCG in other local governments. Examples are presented below.

- The crew size used for patching potholes ranged from as low as three-persons to as high as eight persons, but was four-persons at the median. The crew size that should be utilized is two-persons.
- The crew size used for major paving ranged from a low of seven-persons to a high of fourteen persons, but was ten-persons at the median. The crew size that should be utilized is five persons for asphalt grinding and seven persons for asphalt overlay. This presumes that a contractor would be utilized to haul the grindings from the job site and bring the asphalt to the job site given the heavy equipment required that is not available to the City (i.e., super dump trucks, semi-trailer bottom dump truck or end dump truck, etc.).

- 
- The crew size used for concrete pours ranged from a low of four-persons to a high of five persons. The crew size that should be utilized is three-persons.
  - The crew size used for constructing forms for concrete sidewalk pours was five-persons. The crew size that should be utilized for installing the base and constructing forms for concrete is two-persons.
  - The crew size used for sidewalk grinding was four-persons. The crew size that should be utilized is one-person.

**Recommendation #135: The crew size used for pothole patching should be reduced to two persons, the crew size used for major paving should be reduced to five persons for grinding and seven persons for asphalt overlay, the crew size used for concrete pouring should be reduced to three-persons, the crew size used for constructing forms for concrete sidewalks should be reduced to two-persons, and the crew size used for sidewalk grinding should be reduced to one-person.**

**(2) The City Should Utilize Spray Injection Patching Trucks For Patching Potholes**

There are varying methods for repair of a pothole. These methods include:

- Throw and roll -- the hole is filled with a hot mix material and compacted using the tires of the maintenance truck;
- Edge seal -- the hot mix throw-and-roll patch is sealed around the edges with an asphalt based sealant material; and
- Semi-permanent -- the pothole is properly milled to square edges and is patched with hot mix. It is compacted using a steel drum or rubber tired roller.

Even with a properly constructed hot mix patch, a pothole is likely to fail before the pavement is resurfaced or rehabilitated. Further exacerbating the problem, is limited staffing availability in the Streets and Sidewalks Section to do the patching and the impacts to the traveling public when the streets are partially closed for pothole patching. To maintain an acceptable pavement ride quality, ensure motorist safety and to minimize vehicle damage, potholes must be filled more efficiently and effectively.



Alternate methods are available to quickly, safely and permanently patch potholes. A successful method used in many other cities is spray injection. Spray injection is a process where using specialized equipment, aggregate is simultaneously pre-mixed with a heated asphalt emulsion and sprayed through a hose and nozzle into the pothole. Specifically, the steps taken to fill the pothole when using this equipment include:

- Blowing water and debris from the pothole;
- Applying a tack coat of asphalt emulsion on the sides and bottom of the pothole;
- Spraying the emulsion and aggregate mixture into the pothole;
- Covering the repaired area with a thin layer of uncoated aggregate; and
- Opening the repair to traffic as soon as workers and equipment are clear.

A one-person crew is utilized for this operation; the staff never leaves the cab of the truck.

The City of San Jose, California is using this equipment. The City noted *“this new method is called spray injection. This method of fixing potholes requires one person, does not use a roller and works in a wet hole. The spray injection truck uses type RS-2 emulsion heated to a temperature of 70 to 140 degrees mixed with ¼ inch aggregate. This truck holds 5 to 6 yards of aggregate and 10 tons of emulsion with a compressor injecting the material through a boom that is located in front of the truck. The damaged area is blown out with the boom arm. The emulsion and aggregate are mixed in the nozzle and pressure blown into the pothole itself. Then a dry coat of aggregate is added so traffic can travel on it immediately. This produces a neater and smoother repair that blends in better with the surrounding asphalt. All of this is a one-person operation done*

*from the inside of the cab. The vehicle is equipped with an arrow board and 3 beacon lights which make it safer to operate and work on heavy traffic roads."*

One of the limitations of spray injection patching is that the machinery requires frequent maintenance since the crushed aggregate and emulsified asphalt cement tend to clog. Clogging is less frequent if the machinery is used daily.

The use of spray injection methodology for patching potholes has been found to be effective. The *Strategic Highway Research Program* (SHRP) conducted in the late 1980s and early 1990s analyzed the most effective and economical pothole patching methods. In 1993, SHRP published *Innovative Materials Development and Testing*. Part of this study was devoted to pothole repair. A total of 1,250 pothole patches were placed at eight test sites in the United States and Canada using different proprietary, state-specified, and local cold-mix patching materials. Several installation techniques were used to determine an optimum combination of materials and procedures for improving the cost-effectiveness of patching operations.

The findings of the SHRP research project were that the spray injection patch method was the least expensive and the patch service life was much better than with the other patching methods tested in the study.

Additional research supports this conclusion. In 1996, a truck-mounted spray injection patcher was demonstrated to Virginia Department of Transportation (VDOT). After the demonstrations, a telephone survey was made to several states that were using the spray injection patching method. It was the consensus of the states contacted that the

spray injection patching method was superior to any other patching methods, with a life expectancy of four to five years.

In 1997, VDOT leased spray injection patch truck for two months and used it in the Lynchburg and Salem districts. During that period, cold-mix patches were also placed for comparison purposes. The patches were monitored by a team of evaluators from each VDOT district for one year, and it was concluded that the spray injection patches lasted longer and were more economical.

The estimated cost for a spray injection patch truck is presented below..

Recommendation	One-Time Capital Outlay
Acquire a spray injection patch truck.	\$150,000

**Recommendation #136: The Agency should “pilot” test the use of spray injection pothole patching.**

**Recommendation #137: If the “pilot” test is successful, the Agency should utilize spray injection methodology for patching potholes, and acquire a spray injection pothole patching truck.**

**(3) The Productivity of the Major Paving Crew Should Be Enhanced and the Budget for Asphalt Increased.**

The exhibit following page presents the work activity of the major paving crew in March 2008 and for two weeks in June 2008. Important points to note regarding the data and observations regarding the major paving crew are presented below.

- **The major paving crew is underutilized as the staff assigned to the crew are not frequently utilized for major paving.** This is clear based upon the work activity of the major paving crew in March 2008 and for two weeks in June 2008. Specific examples are provided below.

- 17% of the work hours of the major paving crew were allocated to mechanical gutter cleaning. This represents removal of dirt and debris from streets without curbs and gutters.
- Ten (10) and eight (8) person crews were utilized for mechanical gutter cleaning. In the performance standards developed by the Agency in 1982, the crew size defined for mechanical gutter cleaning was eight (8) persons.
- The major paving crew was utilized for pothole patching including perma patch. A total of 9% of the work hours of the major paving crew were utilized for pothole patching. Pothole patching crews should be available in sufficient numbers so that the major paving crew is not diverted to pothole patching.
- The major paving crew was utilized for base repair. A total of 33% of the work hours of the major paving crew were utilized for base repair. The crew size utilized for base repair ranged between 8 and to 14 staff. The crew size used for base repair should be four persons.

Overall, during this six-week period, almost 60% of the labor hours of the major paving crew were allocated to work activities other than major paving.

- **The major paving crew is utilizing three-axle dump trucks to remove asphalt grinding material and deliver hot mix asphalt for street overlays, which results in labor inefficiencies.** Different types of trucks should be utilized to enhance the productivity of the Major Paving Crew. Using a grinder, as does the Streets and Sidewalks Maintenance Section, to mill asphalt is much more efficient than breaking up the pavement and loading it in large chunks. However, because the grinder is more efficient, it fills the streets crew's existing 10 to 12-yard dump trucks much faster, necessitating many more trips to the dump site. The transfer dump, with its 30-yard capacity, will accommodate nearly three times the amount of material, which will significantly reduce the number of trips to the dump site. This will increase labor efficiency, reduce fuel consumption, and lower carbon emissions. The Agency should, initially, contract for the hauling of asphalt grindings with construction companies equipped with super dump trucks, transfer dump trucks, or semi-trailer end dump trucks. This is the approach utilized by the City of Modesto. The contract for hauling approximates \$90 / hour per truck including the equipment operator. The purchase price for a transfer dump truck with 15-yard transfer dump body and trailer should approximate \$221,000. That was the recent price obtained by the City of Palo Alto for use with its own asphalt grinding program. The price for a transfer dump truck and trailer is not much more than what the City of Oakland paid for 2003 model year 4-yard CNG dump trucks: \$156,000. Modesto indicated that it contracts for two transfer dump trucks when it is grinding or overlaying City streets with its own staff. The City should initially contract for transfer dump trucks, but should acquire two of

these trucks after it has sufficient experience in the use and application of this equipment, including the evaluation of the approaches utilized by Modesto and Palo Alto. The incremental cost of this equipment could readily be offset by the elimination of underutilized equipment assigned to the Streets and Sidewalks Maintenance Section, as recommended elsewhere in this report.

**Exhibit 12****Work Activities of the  
Major Paving Crew**

<b>Date</b>	<b>Crew size</b>	<b>Work Activity</b>	<b>Total Hours</b>
3-Mar-08	10	Mechanical Gutter Cleaning; hauled 5 loads	80
4-Mar-08	8	Mechanical Gutter Cleaning; hauled 6 loads	64
5-Mar-08	7	Curt Flood Field Cleaning (asphalt grindings)	56
6-Mar-08	6	Curt Flood Field Cleaning asphalt grindings)	48
7-Mar-08	7	Curt Flood Field Cleaning asphalt grindings)	56
10-Mar-08	5	Curt Flood Cleaning asphalt grindings)	40
11-Mar-08	9	Mechanical Gutter Cleaning; hauled 3 loads	72
12-Mar-08	7	Mechanical Gutter Cleaning; hauled 1 load, and misc. adjusting of assignments	56
14-Mar-08	4	Manual Gutter Cleaning	32
17-Mar-08	4	Pothole Blitz (10)	32
18-Mar-08	7	Grinding Crew	56
19-Mar-08	4	Pothole Blitz (23)	32
20-Mar-08	4	Pothole Blitz/Grinding Crew, assisted another crew (Powell)	32
21-Mar-08	3	Pothole Blitz, assisted another crew (Johnson)	24
31-Mar-08	9	Base Repair (Mira Vista Ave.)	72
1-Apr-08	8	Curt Flood Field (3 loads removed), removal of postings and cones	64
2-Apr-08	8	Perma Patch (24 potholes)	64
3-Apr-08	12	Base Repair (16 tons asphalt)	96
4-Apr-08	11	Base Repair (15 tons asphalt)	88
9-Jun-08	10	Removed dirt & Asphalt (80 tons), hauled 6 loads. Put 28 tons grindings	80
10-Jun-08	9	Base repair, Peach St. (23 tons)	72
11-Jun-08	8	Removed asphalt (42 ft x 32 ft x 5 in)	64
12-Jun-08	12	Removed mud, clay, Asphalt (120 tons), hauled 10 loads, supervisory duties	96
13-Jun-08	11	Removed & hauled 9 loads (100 tons) material to Curt Flood Field, hauled 2 loads from CFF to dump.	88
16-Jun-08	14	Base Repair (2100 blk of Baxter)	112
18-Jun-08	7	Vehicle Maintenance, dirt & asphalt to Davis Street, hauled 16 loads out of Curt Flood Field	56
19-Jun-08	9	Base Repair (7101 Edgewater - 17 tons) Work delayed by performance evaluations & late contractor	72
20-Jun-08	8	Base Repair (7101 Edgewater - 17 tons). Placed barricades.	64

- **The Streets and Sidewalks Section has an annual asphalt budget of \$400,000, which is insufficient to fully utilize the major paving crew.** Approximately \$150,000 is utilized for speed bumps, and approximately \$90,000 for pothole patching. This results in only \$160,000 available for the Major Paving Crew. At an estimated cost of \$75 / ton, and a productivity rate of 150 tons per day, the crew would expend this asphalt budget in a little less than three weeks. This crew should be capable of paving streets for eight to nine months annually. The major paving crew should be capable of grinding and paving approximately one 2-lane mile each month. This will require a number of actions as noted below:
  - Transportation Services / Engineering and Construction Department / CEDA should be responsible for speed bumps. These projects should be handled as a capital project and accomplished contractually. This was the manner that paving of speed bumps was handled until a few years ago. The \$150,000 that the Streets and Sidewalks Section allocated to speed bumps should be reallocated to the major paving crew for major paving such as base repair and paving of streets.
  - The asphalt budget should be increased by \$400,000 annually to enable the major paving crew to pave streets for eight months each year. The total asphalt budget for the paving crew should approximate \$800,000 annually. This is predicated upon the efficient deployment of the Major Paving Crew.

The Major Paving Crew represents an important resource for the City to address the significant pavement condition problems in the City. The crew is underutilized at the present time. The cost impact of these recommendations is presented in the table below.

Recommendation	Annual Cost Increase	Recommendation	One-Time Capital Outlay
Increase the annual asphalt budget for the major paving crew	\$400,000	Acquire two 15-yard transfer dump bodies and trailers	\$440,000
Contract for hauling of asphalt grinding and delivery of hot mix asphalt for street overlays.	\$115,000		

**Recommendation #138: The Agency should enhance the effective deployment of the Major Paving Crew for street overlay and asphalt grinding, and not divert the staff resources to other work activities.**

**Recommendation #139:** The City should initially contract for hauling of asphalt grinding and delivery of hot mix asphalt for street overlays, but should acquire two 15-yard transfer dump bodies and trailers in the next three fiscal years.

**Recommendation #140:** The Streets and Sidewalks Section should acquire two 15-yard transfer dump bodies and trailers to haul asphalt grindings and not use three-axle dump trucks.

**Recommendation #141:** Transportation Services / Engineering and Construction Department / CEDA should be responsible for speed bumps. These projects should be handled as a capital project and accomplished contractually.

**Recommendation #142:** The asphalt budget should be increased by \$400,000 annually to enable the major paving crew to pave streets for eight months each year. The total asphalt budget for the paving crew should be \$800,000 annually.

## **8. THE ELECTRICAL SERVICES AND TRAFFIC MAINTENANCE DIVISION SHOULD IMPROVE ITS MAINTENANCE MANAGEMENT PRACTICES.**

This section of the chapter presents an analysis of the maintenance management practices of the Electrical Services and Traffic Maintenance Division including the adequacy of preventive maintenance of the traffic signal, signs, roadway striping, crosswalks, stop bars, and pavement messages systems.

### **(1) The Electrical Services and Traffic Maintenance Division Should Preventively Maintain the City's Traffic Signals.**

Traffic signal systems are complex, integrated amalgamations of hardware, technologies, and processes for performing an array of functions, including data acquisition, command and control, computing, and communications. The list of equipment maintained as part of a traffic signal includes electronic components located within the controller cabinet, the information contained in the controller itself, underground conduit and wiring, signal hardware such as posts, mast arms and signal heads, internally illuminated street name signs, and emergency preemption. In addition, the timing plans in the controllers must also be maintained and updated periodically.



Disruptions or failures in the performance of these functions can impact traffic safety, reduce system capacity, and ultimately lead the traveling public to lose faith in the transportation network. System failures also have the potential to cause measurable economic loss and increase congestion, fuel consumption, pollutants, and traffic crashes. The problem is further complicated by the fact that today's systems, subsystems, and components often are highly interdependent, meaning that a single malfunction can critically impact the ability of the overall systems to perform their intended functions.

Preventive maintenance of signalized intersections refers to a series of methodical, ongoing activities designed to minimize the occurrence of systemic failures and to mitigate their impacts when failures do occur. These activities include replacing worn components, installing updated hardware and software, tuning the systems, and anticipating and correcting potential problems and deficiencies.

The Electrical Services and Traffic Maintenance Division does not consistently preventively maintain the City's traffic signals.

The City has an estimated 671 signalized intersections. The Electrical Services and Traffic Maintenance Division should be performing a number of work activities to preventively maintain the City's traffic signals. These activities, and the frequency with which these activities should be performed, are presented in the table below.

Work Activity	Activity Description	Frequency of Performance
Signal Controller Cabinet Preventive Maintenance	Test conflict monitor, clean cabinet, check controller timing, check operation of loop detectors, test pedestrian pushbuttons, etc.	Once a year
Traffic Signal Inspection	Paint signal poles, mast arms, visors, backplates, clean lamps, clean lens and reflectors, and clean faces of LED indications; check height, visibility, and alignment of signal heads; inspect traffic signal wiring, and re-lamping about every 8 years of all Red, Green, Don't Walk, left/through arrow, and countdown timers, which are LED (Light Emitting Diodes) type lamps	Once a year

The installation of a traffic signal preventive maintenance program can significantly reduce signal malfunctions. For example, a County with 715 traffic signals found the signal malfunctions were reduced by 36% in the first year the preventive maintenance program was installed. The County also experienced an increase in loop repairs / replacements resulting from signal technicians identifying loop problems before these problems became emergency maintenance calls. The City of Austin Texas found that instead of spending money responding to problems calls or complaints, by spending money upfront by proactively checking every traffic signal on a regular preventive maintenance schedule, maintenance calls were reduced from 5,000 to 2,500 in one year.

**Recommendation #143: The Electrical Services and Traffic Maintenance Division should develop and install a preventive maintenance program for the City's signalized intersections. The traffic signals should be preventively maintained not less than once annually.**

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**(2) The Electrical Services and Traffic Maintenance Division Should Install A Preventive Maintenance Program for Signs, Roadway Striping, Crosswalks, Stop Bars, and Pavement Messages.**

Once signs and markings are installed, jurisdictions accept a duty to maintain those traffic control signs, striping, and pavement markings.

The Electrical Services and Traffic Maintenance Division does not preventively maintain traffic control signs, striping, and pavement markings. In the six months ending 2008, the Section provided the following services:

- Replaced 3,700 regulatory signs, 318 warning signs, 1,166 street name signs, and 106 miscellaneous signs (e.g., neighborhood watch);
- Painted roadway striping, pavement legends, and crosswalks in the amounts of 1,596 gallons of white, 333 gallons of yellow, 1,431 gallons of red, 73 gallons of blue, 36 gallons of grey, and 36 gallons of black.

The volume of signs replaced in the last six months of 2008 would indicate that the Division is replacing signs on approximately a 19-year schedule. This approximately twice as long a schedule as should be utilized.

The City lacks an inventory of traffic control signs, striping, and pavement markings.

The MCG estimates that the City has approximately 200,000 signs, 3,600 lane miles of roadway striping, 400,000 linear feet of crosswalks and stop bars, and 6,000 pavement messages. This is a significant inventory; the maintenance is largely self-scheduled by the Sign Maintenance Workers and Traffic Painters, but is not preventive in nature.

There is little preventive maintenance as noted below.

- **Signs are not inspected annually for retroreflectivity in accordance with Manual on Uniform Traffic Control Devices.** In order to minimize the risk to an agency of being found negligent in meeting the requirements for minimum traffic sign retroreflectivity, a sign maintenance program must be provided in order to ensure the nighttime visibility of signs. This approach has been effective in

related tort claims against agencies. Conducting and maintaining an inventory of devices, replacing devices at the end of their effective lives, knowing the laws relating to traffic control devices, and applying State traffic control device specifications and standards are four basic principles suggested by the Institute of Transportation Engineers Traffic Sign Handbook to "significantly reduce tort liability lawsuits involving traffic control devices."<sup>27</sup> It follows that sign maintenance methods need to be developed and implemented to provide protection from tort liability.

- **Roadway striping is not all restriped on an annual basis, and crosswalks, stop bars, and pavement messages are not all painted annually.** When used for guidance and regulation of traffic, painted or taped pavement surfaces are traffic control devices. This includes (1) the yellow lines used for medians, passing zones and traffic flow separation in opposite directions; and (2) the white lines used for the delineation of shoulders / edge of pavement marking / channelizing islands where traffic passes on both sides in the same direction and (3) pavement messages, crosswalks, and stop bars. Sight distance, alignment and placement of any roadway or pavement marking must be in accordance with general traffic engineering practices and in compliance with the Manual on Uniform Traffic Control Devices.

The Electrical Services and Traffic Maintenance Division should be performing a number of work activities to preventively maintain the City's signs, roadway striping, crosswalks, stop bars, and pavement messages. These activities, and the frequency with which these activities should be performed, are presented in the table below.

Work Activity	Activity Description	Frequency of Performance
Sign Inspection	Nighttime visual check of traffic and street name signs. Signs are checked at night for conspicuity, reflectivity and alignment. Sign deficiencies are logged on maintenance work order forms for assignment to appropriate personnel.	Once every three years
Roadway restriping	Painting of roadway stripes on city owned streets as required by routine maintenance scheduling, and following pavement resurfacing projects.	Once a year

<sup>27</sup> *Traffic Control Device Handbook*. Institute of Transportation Engineers, Washington, D.C., 1999.

Work Activity	Activity Description	Frequency of Performance
Pavement Messages	Painting of traffic messages on city owned streets and parking lots as required by routine maintenance, overlays, preventive seals and Traffic Engineering requests.	Once a year
Crosswalks and Stop Bars	Marking of crosswalks and stop bars on city owned streets and parking lots as required by routine maintenance, overlays, preventive seals and Traffic Engineering requests.	Once a year

As noted previously, the work performed by the Sign Maintenance Workers and Traffic Painters is largely self-scheduled.

**Recommendation #144: The Traffic Maintenance Section should develop and install a preventive maintenance program.**

**Recommendation #145: The Traffic Maintenance Section should plan and schedule the work of the Sign Maintenance Workers and Traffic Painters.**

## **9. THE PARK MAINTENANCE SECTION SHOULD IMPROVE ITS MAINTENANCE MANAGEMENT PRACTICES.**

This section of the chapter presents an analysis of the maintenance management practices of the Park Maintenance Section including the adequacy of service levels for maintenance of the parks system, the extent of quality standards, and the use and development of routing sheets for park maintenance crews.

### **(1) The Park Maintenance Section Should Improve The Level of Service for Maintenance of the City's Parks.**

The quality of park maintenance has an important and positive impact on the City. There is a significant amount of research that demonstrates this value. Two examples are provided below.

- **An analysis completed in 2005 for the Illinois Association of Park Districts found positive impacts on real estate values depending on the proximity of homes to parks.** Neighborhood parks can provide up to a 20% increase in

housing values for those homes facing the park. Benefits from a neighborhood park can extend to approximately 600 feet, with houses nearer to the park receiving the majority of the benefit. Community parks may provide benefits up to 33% of the residential real estate value. Homes within 1,000 feet of a large community park may receive a 9% increase in home value. Positive externalities of a community park may extend up to 2,000 feet. Homes in close proximity to greenbelts generate a premium of 11% in value over the average price.<sup>28</sup>

- **American Chief Executive Officers have identified quality of life for employees as the third most important factor in locating a business.** Only access to domestic markets and availability of skilled labor are more important. Parks and open space are increasingly recognized as vital to the quality of life that fuels economic health.<sup>29</sup>
- **Parks were found to add value in Oakland.** In Oakland, California, a 3-mile greenbelt around Lake Merritt, located near the city center, was found to add \$41 million to surrounding property values.<sup>30</sup>
- **City parks can also have negative impacts.** For example, poorly maintained parks may decrease the value of surrounding properties. Therefore, any balanced assessment of the economic benefits of parks must address the net overall effect, by addressing both the positive and negative externalities.<sup>31</sup>

The Park Maintenance Section, however, is not providing an adequate level of service in the maintenance of the City's parks. A comparison of the existing level of service and the recommended level of service is provided in the exhibit on the following pages. The Park Maintenance Section should adjust its service levels to assure the adequacy of the maintenance of the City's parks. The recommended adjustments are presented below.

- Playgrounds in parks should be inspected using a formal written checklist on a monthly basis by the crews assigned responsibility for the maintenance of that park. At present, this formal written inspection occurs less frequently than once a year, which results in some measure of liability exposure for the City.

<sup>28</sup> Economic Research Associates, Real Estate Impact Review of Parks and Recreation, March 2005

<sup>29</sup> The Economic Benefits of Parks and Open Space, Trust for Public Land, 1999.

<sup>30</sup> Weber – Thompson, Greenbacks in the Greenery, April 2002

<sup>31</sup> Karen Marie Edwards, Do Parks Make Cents, May 2007

**Exhibit 13 (1)****Park Maintenance Service Levels**

<b>Work Activity</b>	<b>Activity Description</b>	<b>Existing Level of Service</b>	<b>Recommended Level of Service</b>
Inspect playground equipment	Check the operation and stability of the equipment, especially for wear (e.g. bearings, moving joints, splinters, rust and other wear). It identifies records and highlights for action any aspect that may cause harm	The existing frequency of formal written inspections is longer than one year for each playground structure. Informal inspections are provided two to three times a week.	Formal written inspection of playground structures is accomplished on a monthly basis. Informal inspection is to be conducted five times a week.
Mowing	Mowed turf to maintain grass height according to species and variety of grass	Mowing grass once every one and one-half weeks during the growing season.	Mowed once a week during growing season, and once every two weeks during the non-growing season
Edging of turf	Edging of turf to maintain a clean appearance and pedestrian safety along pathways	Turf is not routinely edged	All lawns, nature areas, low-growing ground cover areas, paved areas, curbs, and header boards, are edged bi-monthly, except for the non-growing season, during which time, edging is performed as needed.
Removal of grass and other debris from hard surface areas	Grass and other debris is removed from sidewalks, picnic table pads, and all other hard surface areas immediately after mowing and edging to maintain a clean appearance and pedestrian safety along pathways	Grass and other debris is not removed from sidewalks, picnic table pads, and all other hard surface areas	Grass and other debris is removed from sidewalks, picnic table pads, and all other hard surface areas once a week during growing season, and once every two weeks during the non-growing season
Edging of fences, light standards, and structures, and tree wells	All fences, light standards, and structures, shall be free of any plant growth to a minimum border of six (6) inches. Tree wells to be maintained at a 18" radius greater than the tree trunk.	Fences, light standards, and structures, and tree wells are not edged	Fences, light standards, and structures, and tree wells are edged bi-monthly, except for the non-growing season, during which time, edging is performed as needed
Aeration of turf	Turf is aerated to alleviate soil compaction and improve infiltration of water and penetration of plant nutrients.	Turf is not aerated	Turf is aerated once a year

**Exhibit 13 (2)**

<b>Work Activity</b>	<b>Activity Description</b>	<b>Existing Level of Service</b>	<b>Recommended Level of Service</b>
Fertilization of turf	Turf is fertilized to provide adequate nutrients and optimum growth.	Turf is not fertilized	All turf areas and shrub beds shall be fertilized at least once per year, in <u>April</u> , with a balanced product
Sprinkler system inspection	Checking of all sprinklers and controllers for proper operation. Necessary adjustments shall be the responsibility of the Contractor. All sprinkler heads are to be adjusted as necessary for unimpeded coverage and to minimize over-spray and water waste.	Sprinklers and controllers are not checked for proper operation.	Sprinklers and controllers are checked weekly for proper operation.
Litter control	Policing and removal of litter from turf, shrub, groundcover areas, pathways and parking lots.	Litter control is provided two to three times a week	Litter control should be provided three to five times a week depending on the traffic / visitation of the parks.
Emptying of trash containers	Emptying of trash receptacles so that receptacles are capable of holding all trash generated between servicing without typically overflowing	Trash containers are typically emptied two to three times a week.	All trash containers (garbage cans and 30-gallon drums) at each designated location shall be emptied at least four (4) times each week during the growing season and three (3) times a week during the non-growing season
Restrooms	Restrooms shall be cleaned so that they will be clean for users including scrubbing, stocking dispensers, emptying trash receptacles, and removal of graffiti.	Restrooms are cleaned daily	Restrooms are cleaned daily
Weeding	Weeding of planted areas include all planters, entrances, medians, raised planter areas, and shrub beds to keep weeds controlled within, and not to exceed, a 5% population.	Planted areas are not weeded.	Weeding of planted areas should be performed on a quarterly basis



**Exhibit 13 (3)**

<b>Work Activity</b>	<b>Activity Description</b>	<b>Existing Level of Service</b>	<b>Recommended Level of Service</b>
Organic weed control	Organic herbicides are utilized to control weeds in turf.	Organic herbicides are not utilized	Organic herbicides should be utilized annually in those turf areas in which weeds comprise more than 20% of the lawn area.
Planted Area fertilization	Planted areas are fertilized to provide adequate nutrients and optimum growth.	Planted areas are not fertilized	Planted areas shall be fertilized once a year
Tree and shrub pruning	Trees and shrubs shall be thinned out and shaped when necessary to insure proper growth and prevent wind and storm damage	Trees and shrubs are not routinely pruned	Trees and shrubs are pruned once a year
Tennis courts / Basketball courts cleaning	Courts are cleaned to remove all litter, including broken glass or other such debris	Courts are not cleaned routinely.	Courts are cleaned weekly
Picnic table and barbecue cleaning	Picnic tables are to be washed down as needed to provide clean, sanitary surfaces. This may result in weekly cleaning in high-use areas. Barbecues are to be cleaned as needed to remove ashes and baked on food residue. A wire brush will work for cleaning grills. Park benches are to be kept clean and sanitary. This may require washing off debris and spilled material.	Picnic tables and barbecues are not cleaned routinely. Bleachers and benches are not cleaned routinely.	Picnic tables and barbecues are cleaned monthly. Bleachers and benches are cleaned weekly.

- Turf should be mowed weekly during the growing season, and once every two weeks during the non-growing season. At the time this audit was conducted, mowing was occurring every week and one-half during the growing season. This practice is considered the most fundamental aspect of turf maintenance and at the same time the least understood and appreciated. Mowing affects all the components of turfgrass quality; density, texture, color, and uniformity. The turf should be mowed frequently enough so that more than 1/3 of the grass blade is never removed at one mowing. Mowing on a ten calendar day cycle will result in more than 1/3 of the grass blade being removed at one mowing.
- Lawns and ground cover areas should be edged once every two weeks during the growing season, and as needed during the non-growing season. At the present time, edging of lawns and ground cover areas is not routinely provided.
- Turf should be mowed weekly during the growing season, and once every two weeks during the non-growing season. At the time this audit was conducted, mowing was occurring every week and one-half during the growing season. This practice is considered the most fundamental aspect of turf maintenance and at the same time the least understood and appreciated. Mowing affects all the components of turf quality; density, texture, color, and uniformity. The turf should be mowed frequently enough so that more than 1/3 of the grass blade is never removed at one mowing. Mowing on a ten calendar day cycle will result in more than 1/3 of the grass blade being removed at one mowing.
- Lawns and ground cover areas should be edged once every two weeks during the growing season, and as needed during the non-growing season. At the present time, edging of lawns and ground cover areas is not routinely provided.
- Turf should be aerated and fertilized annually. Neither is a practice at present. Both practices are focused on improving the health of the turf.
- Irrigation controllers and sprinklers should be checked monthly for proper operation. This is not a routine practice at the present time.
- Planted areas, such as groundcover and shrub beds, should be weeded three times annually. This is not a routine practice at the present time.
- Turf areas in which weeds comprise more than 20% of the lawn area should have organic herbicides applied once annually. This is not a practice at the present time.
- Planted areas, such as groundcover and shrub beds, should be fertilized with an organic fertilizer once a year. This is not a routine practice at the present time.

- Trees and shrubs should be thinned out and shaped for proper growth on an annual basis. This is not a routine practice at the present time.
- Tennis courts and basketball courts should be cleaned with a blower weekly to remove debris. This is not a routine practice at the present time.
- Picnic tables, barbecue pits, and benches should be cleaned weekly. This is not a routine practice at the present time.

The level of service provided by the Park Maintenance Section does not compare favorably with standards for the profession and with other cities in which members of the MCG have previously analyzed park maintenance. This includes such cities and counties as Los Angeles, Los Angeles County, Pasadena, Orange, Santa Monica, Corona, Mountain View, and Beverly Hills, California; Reno, Nevada; and Salt Lake City, Utah. The members of the MCG team have also compared service levels to other cities previously including Anaheim, Long Beach, Riverside, San Bernardino, and Santa Ana.

The enhancement of the level of service for mowing by the Park Maintenance Section will require additional equipment. This would include two trimmer mowers, two larger mowers, two pickup trucks capable of towing 12' trailers, and two 12' trailers (up to 9,999 GVW). The Section has sufficient staff authorized at present to enhance the level of service if the equipment was available. The cost impact of this recommendation is presented below.

Recommendation	One-Time Cost Increase	Recommendation	Annual Cost Increase
The level of service for mowing of turf in parks should be enhanced. Additional equipment should include two trimmer mowers, two larger mowers, two pickup trucks capable of towing 12' trailers, and two 12' trailers (up to 9,999 GVW).	\$250,000	Ongoing maintenance and repair costs for the additional mowing equipment.	\$15,000

**Recommendation #146: The levels of service delivered by the Park Maintenance Section should be adjusted to provide effective turf management, tree / landscape management, irrigation management, and playground management.**

**Recommendation #147: Additional equipment should be acquired to enhance the level of service for mowing of turf.**

**(2) The Park Maintenance Section Should Develop Route Sheets For Each Park Maintenance Crew.**

The Park Maintenance Section lacks formal, written task schedules for park maintenance staff to assure a consistent level of service delivery in the maintenance of parks and landscaped areas by all staff of the section, and consistent work output by these staff.

Park maintenance route sheets should be developed to clearly define the work schedule and daily assignments of each budgeted position within the Park Maintenance Section.

These route sheets should define the routine ongoing maintenance work that is done periodically according to a pre-determined schedule (i.e., daily, weekly, monthly, etc.). Examples of this kind of work are cleaning restrooms, mowing grass, litter control, etc. The routine nature of this work allows the Section to program the normal maintenance work at each facility in the most efficient sequence and to provide the specific level of service desired for that facility.

Development of these route sheets starts with the determination of the “what must be done” and “where it must be done.” This determination is made by making a complete physical inventory of each facility – the information gathering element. Based upon the types of infrastructure at each park (i.e., turf, shrubs, restrooms, barbecues, drinking

fountains, etc.), task lists are developed for the facility and the time required to perform each task is identified.

After the inventory has been made, the task list and task times developed, the route sheet can be developed for each facility. This route sheet lists in tabular form the following information:

- The tasks required for the specific facility;
- The time required to perform that task at the specific facility;
- The frequency for performance of that task at that facility; and
- The total time for performance of all of the tasks at that facility.

The route sheets should cover routine maintenance work for a specific employee on a specific route for a two-week period. Each route sheet lists all of the tasks to be performed in the order in which the tasks should be performed, and the day or days on which they should be performed. Also on the route sheet is the specific location in the facility where the work is to be performed.

The route sheet, which covers routine maintenance work, is used in conjunction with demand work that is not necessarily performed routinely such as weed control.

Each employee working under the routine maintenance system should be provided a copy of the route sheet for his or her reference every two weeks. During the two-week period, the Gardener II would perform the work listed and initial the route sheet in the space provided for each task that the Gardener II performed, and indicate any non-routine tasks performed. At the end of the two-week period, the Park Supervisor should

collect the completed route sheets, review them, and then sign each one. This process could be automated using Azteca Cityworks.

An example of a route sheet is presented in the exhibit following this page.

**Recommendation #148: The Park Maintenance Section should prepare route sheets for each maintenance route defining the routine maintenance work performed by the staff assigned to each route.**

**(3) Adopt Varying Service Level Standards for the Maintenance of the Varying Types of Parks in the City's Park System.**

Formally defining the park maintenance levels of service in writing accomplishes several objectives including the following:

- Section-wide agreement on levels of service;
- Improved communications throughout the section regarding agreed upon service level standards;
- Enhanced control of actual expenditures since the levels of service must match available funding;
- Improved quality control for field operations; and
- Increased customer satisfaction.

However, wide latitude is possible on the level of service for different types of parks and facilities based upon the higher field versus no baseball field and the levels of utilization of a park would require higher levels of maintenance. Levels of park maintenance will vary depending on the type of facility, intensity of use, and on local standards.

## Exhibit 14

## Sample Park Maintenance Route Sheet

Task	Location	Su	M	T	W	Th	F	S	Su	M	T	W	Th	F	S
Job preparations			M	T	W	Th	F			M	T	W	Th	F	
Remove litter. Dump and line and full trash cans, and inspect park for hazards.	South Section		M	T	W	Th	F			M	T	W	Th	F	
Prepare baseball diamonds (water, hand level, home plate, bases, pitching mound), Clean dugout floors.	Ball diamonds 3 & 4		M	T	W	Th	F			M	T	W	Th	F	
<b>Break 1 – 9:00 AM to 9:15 AM</b>															
Wash hardscapes, bleachers, benches, drinking fountains, bleacher pads	Ball diamonds 3 & 4			T		Th					T		Th		
Clean picnic area tables, BBQ units and surrounding DG area	South picnic area		M		W		F			M		W		F	
Clean parking lot (sweeping and weed control)	Lincoln parking lot					Th							Th		
Rake / level fence lines and infield perimeter. Service base anchors.	Ball diamonds 3 & 4		M				F			M				F	
Clean service entry road	South Section				W							W			
Irrigation repairs (minor). Level valves	South Section					Th							Th		
<b>Lunch 11:30 AM to 12:00 PM</b>															
Weed, cultivate planters, tree basins, backflow prevention device	Pool building				W							W			
Clean / wash hardscape	Pool building, Lincoln sidewalk		M				F			M				F	
Edge turf and groundcover areas	South Section						F								
<b>Break 2 – 1:00 Pm to 1:15 PM</b>															
Clean restrooms (2)	Pool building		M	T	W	Th	F			M	T	W	Th	F	
Wrap up unfinished work, cleanup equipment, and finish paperwork (time sheet, route sheet)			M	T	W	Th	F			M	T	W	Th	F	

For example, parks that are widely used for a variety of leisure activities (e.g., Lake Merritt) generally will require a higher level of maintenance than passive neighborhood parks or greenbelts. This means that different levels of service should prevail throughout the City's park system.

Service levels are not fixed levels of maintenance for all facilities, but rather variable levels to be applied to individual facilities. The Park Maintenance Section should define alternative levels of service to be provided in the maintenance of its park system. Possible alternative levels of service for consideration of the Section are presented below.<sup>32</sup> Important points to note about this alternative are presented in the points below:

- **Mode A** is state-of-the-art maintenance applied to a high quality, diverse landscape usually associated with City-owned buildings or parks with high levels of visitation. Mode A facilities have the following characteristics.
  - The turf is lush, dark green in appearance, of high quality and free from weeds, insects, fungus, or any foreign grasses.
  - The turf is cut to a precise level, and groomed weekly.
  - Plants and trees are pruned, trimmed, and shaped to ornamental beauty and are free from insects or fungus.
  - Planter beds are well raked and cultivated weekly and are free of weeds, grass, or any foreign matter.
  - Irrigation systems are constantly maintained and tested weekly.
  - Litter and/or other debris is removed daily.
  - Reseeding and sodding are done whenever bare spots are present.
- **Mode B** is a high level of maintenance associated with well-developed park areas with reasonably high visitation. Mode B level of service is similar to Mode A level of service, with a major difference being the degree of plant and turf

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<sup>32</sup> Operational Guidelines for Grounds Management, National Recreation and Park Association, 2001



- grooming. The turf has a lush green appearance and is relatively free from weeds and foreign grasses (<5%). Precise cutting and mowing, however, is not practiced. Plants and trees are trimmed, pruned, and shaped to ornamental beauty, but not with the same frequency. Planter beds are relatively free from weeds, debris, or grasses, but flowerbeds are not as extensive.
- **Mode C** is a moderate level of maintenance associated with locations of moderate to low levels of development and moderate to low levels of visitation. Mode C facilities have the following characteristics.
    - Turf management such as mowing, reseeding and sodding, weed control and fertilization are practiced to ensure lush, green and healthy grass. However, it is applied less frequently than higher maintenance levels since turf area is generally not used for a variety of organized sports and leisure activities (e.g., soccer).
    - Weeds and mixed grasses are tolerated in the turf but do not become major problems since turf conditioning is practiced on a scheduled basis.
    - Turf edging is performed monthly conducive to a generally neat appearance most of the time.
    - Litter and/or other debris is removed weekly.
    - Plants and trees are trimmed and pruned annually to ensure proper growth and a generally attractive appearance.
    - Planter bed areas are weeded and cultivated at four-month intervals so wild weeds or grasses may be present for short periods of time prior to scheduled maintenance. They are tolerated at this level as long as they are small in size and the area covered is minimal.
  - **Mode D** level of service is for areas in which maintenance is reduced to a minimum. Such areas do not have developed turf or irrigation systems. These areas are maintained only to the extent necessary to control growth to reduce fire hazards, and keep native vegetation alive and healthy during the growing season and to eliminate unsafe facilities. However, these facilities will need variations in the level of service defined based upon the type of open space.

The Agency has already initiated this effort by defining different and lower levels of service for medians and mini-parks in a LLAD reduction proposal submitted to the City Council in October 2008. The Park Maintenance Section needs to expand this effort to encompass the entire park and landscape system entrusted to its care.

**Recommendation #149: The Park Maintenance Section should develop formal, written service level standards for each of the different types of parks maintained by the Section.**

**(4) Develop Quality Standards for the Maintenance of the City's Park System.**

Quality standards are designed to express the results expected in the maintenance of the City's park system. The standards are stated as "end products" (e.g., turf to be mowed to a height of two inches). This standard is intended to generate a consistent level of service and quality in all of the facilities, focusing on why, when, and how well a task is to be accomplished. Examples are presented in the table below.

<b>Work Activity</b>	<b>Quality Standard</b>
<b>Mowing</b>	Turf area to be mowed weekly during dry season – grass height 2".
<b>Trimming &amp; Edging</b>	<p>All driveways, sidewalks and edging strips shall be edged every two weeks during the "on" season.</p> <p>Grass and weeds around trees, tree wells, header boards, fences, backstops, etc., shall be trimmed monthly or more frequently to maintain appearance. In no case shall grass or weeds exceed 6".</p> <p>Grass clippings and trimmings in walks shall be swept or blown off walks and removed if required.</p>
<b>Fertilization</b>	<p>Fertilization of the turf area should be completed with a balanced fertilizer such as 16-6-8 annually once during the summer.</p> <p>Turf should be tested if the recommended fertilizer does not produce desired results.</p>
<b>Aeration</b>	Turf aeration should be completed during the spring while the grounds are still soft from winter moisture.
<b>Irrigation System</b>	<p>The irrigation system should be set to apply enough water to wet the soil to a depth of 4" to 6". The automatic timing system should be set to avoid interference with sports and other uses.</p> <p>Automatic controllers and sprinkler systems should be checked at least once a week for any abnormalities; failure to do so could result in loss of turf area, the waste of water or the interference with usage.</p>
<b>Litter Control</b>	<p>Park areas shall be maintained constantly and kept in a litter-free condition.</p> <p>Trash pick-up shall be on a regular and frequent schedule to prevent over-accumulation of trash and development of unsanitary conditions. Trash pick-up schedules shall be developed to meet the changing conditions of park usage.</p>
<b>Play Area</b>	Swings and play equipment shall be inspected on a weekly basis and serviced if required.

These quality standards are a key aspect in holding the staff of the Park Maintenance Section accountable for their work.

**Recommendation #150: The Park Maintenance Section should develop quality standards for the maintenance of the parks.**

**(5) Park and Landscape Condition Assessments Should Be Conducted Every Six Months.**

The Park Maintenance Section is not conducting formal, written condition assessments of the park and landscaped areas that it maintains.

Condition assessments are necessary for planning preventive and corrective maintenance. Park Supervisors should conduct a visual inspection of parks and landscaped areas on a quarterly basis. The inspections provide data that can be used for assigning priorities and estimating costs for maintenance, and evaluating the performance of the staff of section. Such a program ensures that unmet maintenance needs are documented and provides data for setting priorities and evaluating the performance of maintenance activities.

Work orders in Azteca Cityworks should be generated by the Park Supervisors to correct problems identified during the assessment of the parks and landscaped areas. This should be done on a formal basis through the issuance of the work orders and by producing a monthly report identifying maintenance and quality problems as well as the resolution and status. The monthly report should include the problem, the location of the problem, the date the work order was issued to correct the problem, the resolution or current status of the problem, and any necessary follow-up.

**Recommendation #151: Park Supervisors should conduct formal written condition assessments of all park and landscaped areas on a six-month basis.**

**(6) The Park Maintenance Section Should Enhance Its Working Relationship With Volunteers.**

The Park Maintenance Section should enhance its collaborative relationship with volunteers to encourage, develop, and honor volunteer contributions as vital to the success of the Section's efforts to maintain parks.

These volunteer opportunities should derive largely from work plans prepared by Park Supervisor I's. Park Supervisor I's should develop these work plans to identify daily, weekly, and seasonal landscape maintenance requirements and then allocate volunteers to accomplish these tasks. Additionally, these work plans should include a section wherein the Park Supervisor I, park maintenance staff, and volunteers can work collaboratively on landscape improvement projects and / or small capital improvement projects for a park. The volunteer efforts should comprise two different opportunities as noted below.

- Volunteer work parties. These should be large scale one-time events or regularly scheduled monthly work days with established volunteer groups that can accommodate many volunteers organized to accomplish one-day objectives at specific park properties. Such work parties should be led by Park Maintenance Section staff in a ratio of one gardener to fifteen volunteers.
- Recurring volunteer work assignment. Volunteers should also be able to select to accomplish recurring park maintenance tasks as part of the work plan for a specific park. Working under the direction of Park Maintenance Section staff, such volunteers would undertake recurring work plan tasks that match their skill level.

**Recommendation #152: The Park Maintenance Section should enhance its working relationship with volunteers, and expand the use of and the involvement of volunteers in the maintenance and repair of the City's parks.**

**(7) The Park Maintenance Section Should Develop A Horticultural Training Program for Gardener Crew Leaders and Gardener II's.**

The Park Maintenance Section should provide horticultural maintenance training for its Gardener II's and gardener Crew Leaders. This should be hands-on training, conducted in the fall or winter to minimize the impact on workload. The training should focus on basic horticultural concepts such as the following:

- Planting and care of roses;
- Turf care and establishment;
- Tree and shrub pruning;
- Irrigation system maintenance and troubleshooting;
- Fertilization, development of a plant nutrition plan, and promoting plant health;
- Soil care;
- Controlling weeds, plant pests, and diseases;
- Inspection of children's play apparatus; and
- Plant, insect, and disease identification.

The Park Maintenance Section should work with the Peralta Community College to develop this program and provide ongoing instruction to the Section's employees.

**Recommendation #153: The Park Maintenance Section should develop a horticultural training program for its Gardener II's and Gardener Crew Leaders.**

**Recommendation #154: The Park Maintenance Section should work with the Peralta Community College to develop the horticultural training program and provide ongoing instruction to the Section's employees.**

**(8) The Park Maintenance Section Should Develop Landscape Standards.**

One of the challenges facing the Park Maintenance Section is inheriting newly constructed park and landscape facilities that are difficult to maintain or are built using different standards. The Section should resolve this problem by working with the Engineering Design and Construction Department and with Building Services / CEDA in the development of landscape standards. The City of San Jose, for example, has developed standards for streetscape projects that addresses irrigation requirements, root and moisture barriers, selection of plant materials, sight visibility at intersections, etc. The City of Irvine has developed similar landscape standards. The Park Maintenance Section should adapt these standards for use and application in Oakland.

**Recommendation #155: The Park Maintenance Section should develop a written landscape standards manual for the use and application in the City's park and landscape capital projects and developer-financed park and landscape projects. This should be accomplished with the cooperation of the Engineering Design and Construction Department and with Building Services / CEDA.**

**10. THE KEEP OAKLAND CLEAN AND BEAUTIFUL DIVISION SHOULD MODIFY ITS MAINTENANCE MANAGEMENT PRACTICES.**

This section of the chapter presents an analysis of the maintenance management practices of the Keep Oakland Clean and Beautiful Division including the productivity of street sweeping service delivery, the methodology for delivery of street sweeping services, the methodology for delivery of services for public waste container maintenance and cleaning of the downtown business district.

**(1) The Productivity of the Street Sweeping Services Should Be Significantly Increased.**

The MCG requested information regarding street sweeping services that is derived from the global positioning system. This information included a sweeper identification

number, the work activity (broom down sweeping, driving, parked), the time the work activity began and ended, and the start and ending distance. This data was utilized to develop a sample of the street sweepers for that week and to document the proportion of each shift allocated to street sweeping (versus driving or parked). The results of this sample are presented in the table below.

Sweeper Identification Number	Proportion (%) of Shift Spent Street Sweeping By Day						
	6-Jul	7-Jul	8-Jul	9-Jul	10-Jul	11-Jul	12-Jul
7135	31.2%		41.1%	16.7%	14.5%	19.6%	38.9%
7137			52.3%	29.3%	25.5%		44.3%
7138		55.6%		41.8%			
7139		60.1%	34.9%	76.1%	34.3%	36.8%	
7140	52.2%	78.6%				65.0%	50.8%
7141			37.0%		35.3%	58.3%	
7142	47.7%	43.1%			50.6%		29.4%
7143		17.1%	20.7%	23.3%	21.5%	38.0%	
7150				61.4%			
7151		20.7%	70.3%		69.7%		
7152		29.2%	53.8%	21.2%	44.4%	37.2%	
7154		59.3%	51.6%	31.3%		53.1%	
7156	30.4%	53.3%	45.1%	27.9%	20.3%	28.0%	66.4%
7157	29.5%		57.6%	29.0%	32.2%	46.3%	58.4%
7158		52.0%	40.0%	64.2%	43.3%	21.9%	
7159		52.6%	50.5%	36.4%	48.9%	41.8%	
7186		11.6%		7.4%	11.8%		
7188	0.0%			25.3%	75.9%	21.0%	

Important points to note regarding the data contained in the table are presented below.

- For all street sweepers, the global positioning system was not functioning from the perspective of determining when the broom was down and the sweeper was sweeping. As a consequence, MCG made the assumption that if the sweeper was being driven less than 15 miles per hour, the broom was down and the sweeper was sweeping. This is a higher speed than should be utilized for street sweeping.
- The data for one sweeper operator was discarded for the entire week. The data indicated that the sweeper operator spent almost no time sweeping that week; the MCG discarded the data as a result.
- Overall, the street sweeper operators spent 40% of their shift sweeping streets. The balance of their shift – 60% - was spent driving or parked. This means that for three hours out of a seven and one-half hour shift, the street sweeper

operator was sweeping. The remaining four and one-half hours was spent parked or driving.

- While these work output problems existed, the staff assigned to street cleaning earned 5,433 hours of overtime in fiscal year 2007-08.

The street sweeper operators had problems with their work output and productivity. At the median, the street sweeper operators were sweeping 24.75 curb miles for each seven and one-half hour shift. Overall, the street sweeper operators should be sweeping approximately 28 to 32 curb miles per shift or 21% more than the median.

The Keep Oakland Clean and Beautiful needs to address this problem with productivity by taking the following steps.

- **The global positioning system units in the street sweepers should be repaired so that the units can report broom down.** The proportion of broom down is an important measure of the productivity of street sweeper operators. The global positioning system, when that feature is operable, is an important tool for supervisors and managers to monitor productivity.
- **Each street sweeper operator should be required to report the total hours worked, the total hours parked, the total hours spent driving, the total hours spent street sweeping, and the total curb miles swept.** This data is readily generated from effective global positioning system software interfaces, and the self-reporting will make the results more obvious to the street sweeper operators and their supervisors and managers.
- **The Keep Oakland Clean and Beautiful Division should set an objective for each street sweeper operator to sweep 32 curb miles per full seven and one-half hour shift.** The street sweeper operators should be held accountable for consistently meeting that objective.
- **The street sweeper routes should be developed into a GIS layer, and each route adjusted so that the curb miles in each route represents a full shift's work.** The street sweeper route maps date from 1994. The curb miles in each route are unknown. The Keep Oakland Clean and Beautiful Division should develop a street sweeper route layer in GIS, and update the routes so that each route represents a full shift's work.

Many of the participants in the community focus groups facilitated by the MCG discussed the street sweeping services including excessive speed for sweeping streets,



the productivity of the street sweepers, and the effectiveness of street sweepers. For many residents and businesses, the street sweeper operator is the most visible and frequent symbol of the City of Oakland. It is essential that the symbol be an effective representative of the City.

**Recommendation #156: The global positioning system units in street sweepers should be repaired so that the units can report broom down.**

**Recommendation #157: Each street sweeper operator should be required to report the total hours worked, the total hours parked, the total hours spent driving, the total hours spent street sweeping, and the total curb miles swept.**

**Recommendation #158: The Keep Oakland Clean and Beautiful Division should set an objective for each street sweeper operator to sweep 32 curb miles per full seven and one-half hour shift.**

**Recommendation #159: The street sweeper routes should be developed into a GIS layer, and each route adjusted so that the curb miles in each route represents a full shift's work.**

**(2) The Keep Oakland Clean and Beautiful Division Should Develop A Street Sweeping Cleanliness Scorecard System.**

The scorecard should be designed to measure the cleanliness of streets after the street sweeper operator has swept a route. The scorecard should be based upon cleanliness measures and on rigorous photographic standards of cleanliness for streets. The standard should range from a "clean street - no litter" to "filthy – litter is very highly concentrated", "there are no gaps in the piles of litter", "the litter is in a straight line and over the curb". A quarterly schedule should be developed for the collection of this data and the evaluation of these routes. The rating should be based upon the collection of a fixed number of streets in each route with the sample being statistically and geographically representative of each route.

The Public Works Supervisor I's that are responsible for supervising the street sweeper operators should conduct the rating. The Public Works Supervisor I's should undergo training, and continual quality assurance checks and retraining, if necessary, by their Public Works Supervisor II.

The Public Works Operations Manager for the Keep Oakland Clean and Beautiful Division should develop the scorecard system and procedures in consultation with the street sweeper operators, and the Public Works Supervisors.

**Recommendation #160: The Keep Oakland Clean and Beautiful Division should develop a street sweeping cleanliness scorecard system.**

**Recommendation #161: The Keep Oakland Clean and Beautiful Division should conduct a rating of street cleanliness.**

**(3) At the End of Their Useful Life, the City Should Replace the Mechanical Broom Sweepers With Regenerative Air Sweepers.**

The Keep Oakland Clean and Beautiful Division uses mechanical broom sweepers for street sweeping. This type of street sweeper has advantages and disadvantages. A significant percentage of the sweepers used in the United States are traditional mechanical broom sweepers.

With some variations, the mechanical broom sweeper process removes debris by sweeping material with gutter brooms rearward into the path of a pick-up broom. The pick-up broom sweeps the material moving it upward with a conveyor system into a hopper. Most new mechanical sweepers have been certified to clean to the PM10 standard. The PM10 standard was established by the EPA and focuses on smaller particles that are likely responsible for adverse health effects because of their ability to reach the lower regions of the respiratory tract.

The mechanical broom sweeper has advantages and disadvantages as noted below.<sup>33</sup>

- Advantages: Ability to pick-up gross pollutants (trash, road debris, vegetation). Good for picking up wet vegetation, gravel and coarse sand. Some models can conduct dry sweeping operations. These units are very good in roadways with heavy loads of materials, such as seal coating operations.
- Disadvantages: Mechanical broom sweepers are generally used for gross pollutant pick-up, not chemicals (soluble) adsorbed onto fine sands and silt particles. Because the sweeping action removes coarse materials, fine sands and silts become exposed for easy wash-off into storm sewers. The performance of these units may diminish substantially on poor pavement with cracks and uneven sections. Mechanical broom sweepers also have more moving parts than other types of sweepers and are more expensive to maintain.

Other cities have increasingly relied on regenerative air sweepers. While the California air quality situation requiring PM10 controls and sweeper certification resulted in industry equipment changes, mechanical sweepers were slowly being replaced or augmented by regenerative-air technology. Regenerative-air technology attempts to increase the removal of both coarse and fine materials on typical pavement with cracks or uneven sections where sediment would become lodged. To capture sediments, these sweepers are equipped with gutter brooms and a pick-up head. The gutter brooms direct materials towards the pick-up head. The regenerative-air process blows air into one end of the horizontal pick-up head and onto the pavement dislodging materials entrained within cracks and uneven pavement. The other end of the pick-up head has a suction hose that immediately vacuums out the materials within the pick-up head into a hopper. The advantages and disadvantages of a regenerative air sweeper are presented below.<sup>34</sup>

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<sup>33</sup> Street Sweeping Report No. 1-State of the Practice, Ramsey-Washington Metro Watershed District, 2005

<sup>34</sup> Street Sweeping Report No. 1-State of the Practice, Ramsey-Washington Metro Watershed District, 2005

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- Advantages: Ability to pick-up most gross pollutants (trash, road debris, vegetation) and especially coarse as well as some fine grained materials entrained within cracks and uneven pavement sections that mechanical brooms cannot reach. Significantly greater pick-up of soluble pollutants and fine road surface materials than mechanical sweepers and some units can operate in a dry mode.
  - Disadvantages: In general, these units have difficulty in picking up wet vegetation and large road debris. Models are certified to clean to the PM10 standard and are used for more intense sweeping operations. The sweeping action of the gutter brooms and the pick-up head may still expose fine silts for easy wash-off into storm sewers. Particles that may not get picked-up are spread across the street surface under the pick-up head, sometimes making the street look dirty or streaked

The City of Inglewood, when it converted to regenerative air sweepers, noted that the regenerative air sweepers “increase street sweeping effectiveness by about 50%. The sweepers - compared to our current ones - are of the regenerative air style, (vacuum) compared to a mechanical broom. With less moving parts (less break downs) and the ability to assist in the removal of standing water, debris from cracks and crevasses and a near 100 percent removal of tree leaves.” The City further noted that the regenerative air sweepers “far exceeds our expectations in performance. Not only can our operators increase the amount of street sweeping debris recovered, this sweeper will also save our City money in the reduction of support crew needed to perform their task.”

**Recommendation #162: When the existing mechanical broom sweepers reach the end of their useful life, the Keep Oakland Clean and Beautiful Division should replace them with regenerative air sweepers.**

**(4) The Keep Oakland Clean and Beautiful Division Should Enhance Its Practices For Illegal Dumping Enforcement.**

In the past six years from 2002 to 2007, the approach utilized for litter enforcement has changed. Litter enforcement has transitioned from a forensic focus to a multi-faceted

system of addressing illegal dumping. This is apparent in the data presented in the table below.

	2002	2003	2004	2005	2006	2007
<b>Number of Cases</b>	638	635	312	291	408	272
<b>Cases Dismissed</b>	129	113	77	34	36	18
<b>% Cases Dismissed</b>	20.2%	17.8%	24.7%	11.7%	8.8%	6.6%
<b>Value of Cases Billed</b>	\$615,208	\$810,927	\$280,316	\$209,127	\$252,893	\$221,758
<b>Value of Cases Dismissed</b>	\$152,994	\$134,018	\$91,322	\$40,324	\$42,696	\$14,400
<b>% of \$ Dismissed</b>	24.9%	16.5%	32.6%	19.3%	16.9%	6.5%
<b>Amount Billed by the PWA</b>	\$462,214	\$676,909	\$188,994	\$168,803	\$210,197	\$207,358
<b>Amount Collected by PWA</b>	\$54,559	\$68,007	\$23,385	\$28,114	\$34,441	\$20,417
<b>% Collected</b>	11.8%	10.0%	12.4%	16.7%	16.4%	9.8%
<b>Number of LEO's</b>	8	8	4	6	6	6
<b>Number of Cases / LEO</b>	79.8	79.4	78.0	48.5	68.0	45.3
<b>Illegal Dumping Tonnage</b>	4,006	3,826	4,100	3,726	3,791	2,608

Important points to note regarding the table are presented below.

- The number of illegal dumping cases generated by the Litter Enforcement Officers has declined by 56% from 638 in 2002 to 272 in 2007. This is the result of a conscious effort by the Division to utilize these staff for outreach and education, and not merely enforcement. This amounts to approximately five cases a week over a year's period of time.
- The number of illegal dumping cases generated by the Litter Enforcement Officers has declined by 43% per Officer from 79.8 in 2002 to 45.3 in 2007.
- The amount billed for illegal dumping by the Agency has declined by 55% from \$462,214 in 2002 to \$207,358 in 2007.
- The amount of revenue collected by the Agency has declined by 63% from \$54,559 in 2002 to \$20,417 in 2007.
- Overall, the Agency collected 12 cents on the dollar in 2002 and collected 10 cents on the dollar in 2007.
- The total tonnage collected has decreased by 35% from 4,006 tons in 2002 to 2,608 tons in 2007.

A total of 77% of the illegal dumping cases are tied to Oakland addresses, and the balance to other jurisdictions and other outside sources.

The Agency estimated that the Litter Enforcement Officers are able to investigate and tie to the source about 3% to 5% of the total tonnage collected. The cost of collecting illegal dumping material is significant; it approximates \$5.1 million. A total of 41 staff members are dedicated to illegal dumping removal and disposal.

The results of the litter enforcement for illegal dumping strongly suggest the need to develop a proactive approach that increases the risk to offenders of illegal dumping. The recommended approaches to enhance the prevention and detection of illegal dumping are presented below.

- **The Division should expand the use of surveillance cameras.** The State / Local Illegal Dumping Enforcement Task Force submitted a number of recommendations in January 2007 to the California Integrated Waste Management Board to address illegal dumping in a systematic manner, and not piecemeal. One of the recommendations made by the Task Force was in regards to the use and application of surveillance cameras. The Task Force noted “surveillance equipment, including motion-activated digital cameras, continuous recording or motion-activated video cameras, and sound recording machines are useful enforcement tools in the enforcement of illegal dumping statutes and ordinances. The sophistication and reliability of surveillance equipment has increased to the level that one piece of equipment can now record pictures simultaneously of vehicle drivers, vehicle license plates, and actual illegal dumping, and the information can either be immediately sent through telemetry to a central location or it can be recorded on an internal or external computer and downloaded at the operator’s convenience. The purchase costs of surveillance equipment starts around \$4,000 per monitor, with multi-functional equipment priced higher.”

The Division has acquired two surveillance cameras that are located in West Oakland and East Oakland. The cameras can be monitored daily from a Litter Enforcement Officer’s desk, and the cameras have the capability to view day and night footage and zoom in from as far as one block away, allowing clear views of the license plate and general descriptions of individuals. These cameras are expensive; the two cameras purchased in July 2007 cost \$19,000 each.

There are, however, almost 80 “hot spots” that are frequent locations of illegal dumping. The two cameras only provide the opportunity to observe 5% of these “hot spots.”

The Division should utilize more cost effective approaches to the acquisition and use of cameras. This should include the following:

- Internet-based (Wifi) HDTV systems (e.g., IQeye) that cost about \$3,000. The Massachusetts Department of Environmental Protection started with standard CCTV equipment, but ran into limitations in terms of power and image resolution. Most locations attractive for illegal dumping were dark, out of the way places, without ready access to power. The Massachusetts Department of Environmental Protection over time has developed a number of successful set-ups using IQeye megapixel cameras on solar or marine battery power with day/night capabilities, so the camera can effectively record the dumping and also capture the license plate information to send out fines and/or aid in prosecution. The emerging “model” for successful covert surveillance involved IQeye megapixel cameras, power from flexible solar panels, and cameras housed in generic, gray electrical boxes mounted to poles. The Massachusetts Department of Environmental Protection wanted the system of cameras to run efficiently, but also to be nimble, so that the cameras can be moved easily to other locations with illegal dumping. With Wifi technology, staff can sit in their cars and download video without disturbing the cameras and drawing attention to the on-going surveillance. Other examples of the effective deployment of these cameras are presented below.
  - The City of Louisville, Kentucky uses wireless-based cameras to deter illegal trash dumping. To reduce and deter the illegal dumping problem, the city installed a wireless-based camera system for two-three weeks at a chronic dumping location, followed by a look-a-like dummy unit. Then the wireless-based camera is moved to a different location. Code Enforcement noted that neighborhoods want wireless-based cameras for their alley or street. Public acceptance of the wireless-based cameras program was excellent. The city has set up a code enforcement board and is now issuing \$500 citations to offenders getting caught by the cameras illegally dumping.
  - Houston Police Department has made it a priority to clamp down on graffiti, illegal trash dumping and other anti-social behaviors. Dozens of wireless-based cameras are used to deter illegal trash dumping. The wireless-based cameras are installed in trouble spots around the city where tires, couches, mattresses, and other household items were being dumped. The illegal dumping has been

reported to have declined dramatically since the wireless-based cameras have been deployed. The tactics utilized include installing a surveillance system and a warning sign.

- The city of Pittsburg, CA won The National League of Cities Municipal Excellence award for their illegal trash dumping program. Pittsburg's anti-dumping program involves signage, school programs, Code Enforcement, and the use of wireless-based cameras. For example, in one trouble spot--a remote cul de sac--trucks and dumpsters were required weekly to clean up illegally dumped items. A wireless-based camera was installed and the dumping stopped. As a result of this program, the city has reported a major decline in illegal dumping, graffiti, litter and blight in the community. One measure of success: the city has reassigned two employees to other tasks.
- Remote 12-battery volt systems such as Digital Guardian 2000 that cost approximately \$10,000.
- The experience of the Massachusetts Department of Environmental Protection is that small day / night bullet cameras are best, with SuperHAD or Exview CCD chips – 1/3 inch being the most common. Two cameras are needed: one for wideview and one for license plate capture. At least 480 lines of resolution are needed for color and 500 or more lines for black and white cameras. Black and white cameras are better at night. The cameras need 0.01 lux or less to effectively see in the dark. Near infrared night illuminators can help.
- Recorders are necessary. These should consist of 250 GB hard disk at 10 frames per second to provide the capacity for six days on endless loop. A personal computer can also be used with PCI capture card, or a compact flashcard recorder for remote sites on a 12-volt battery.
- Alarm triggers are required to tell the recorder to activate to record just the action. Wireless is better e.g., Reporter or Dakota Alert PIR's.
- At installation, the staff should check the view using a test car and license plate, and the camera should be camouflaged or placed in an electrical box.

The Division should be more aggressive in the use and application of cameras focusing on the use of Internet-based HDTV systems (e.g., IQeye).

**Recommendation #163: The Keep Oakland Clean and Beautiful Division should acquire twenty (20) additional illegal dumping surveillance cameras.**



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**Recommendation #164: The Keep Oakland Clean and Beautiful Division should acquire Internet-based (Wifi) HDTV systems or wireless IP cameras in a fixed wireless network.**

- **The Keep Oakland Clean and Beautiful Division should engage the neighborhood associations in Oakland to clean up and to prevent illegal dumping.** There are numerous neighborhood associations in Oakland. The Division should engage these associations to actively work on illegal dumping. This could include the provision of mini-grants to involve the community in combating illegal dumping and community clean-up days in which the Division could provide dumpsters at no cost to the association for collection and disposal of bulk waste.

**Recommendation #165: The Keep Oakland Clean and Beautiful Division should engage the neighborhood associations in Oakland to assist in the clean up and prevention of illegal dumping.**

- (5) The Keep Oakland Clean And Beautiful Division Should “Pilot Test” The Use Of Surveillance Cameras For Detection and Apprehension of Graffiti Taggers.**

At present, the Division dedicates four full-time staff to graffiti abatement. Each operates as a 1-person crew. Each of these four staff is assigned a vehicle with a spray rig – two with pickup trucks and two with vans. Each is assigned a geographical area that they are responsible for covering – east, west, central, and north. The staff responds proactively to “hot spots” and to complaints. There are an average of 15 graffiti complaints each day.

A number of cities are now implementing surveillance cameras to detect and to prevent graffiti. These include such cities as Los Angeles, Denver, Pittsburgh, etc., are beginning to use surveillance cameras such as FlashCAM-880's to catch graffiti taggers. One Southern California city – Redondo Beach - using these surveillance cameras reported a conviction rate of 100%. The high-resolution pictures from the FlashCAM-880 are used to ID suspects.

The State has two recent laws that help in the prosecution of graffiti offenders. First was a change in State law in the amount of damage that is classified as felony from \$5,000 to \$400. Most multiple tags can reach the \$400 level due to the cost of clean up. The second important law is the “Gang Enhancement” law, 186.22 (a) that adds two years for any crime that enhances the gang. For example, gang tagging or marking a territory falls under this law, so a six months sentence would automatically become two years and six months.

**Recommendation #166: The Keep Oakland Clean and Beautiful Division should “pilot test” the use of a surveillance camera for the detection and apprehension of graffiti taggers in cooperation with the Police Department.**

**(6) The Keep Oakland Clean And Beautiful Division Should Use Herbicides To Control Weeds Along Pathways, In Sidewalks, Gutters, and Medians.**

At the present time, the Division dedicates twelve (12) staff to the cutting of weeds and vegetation along pathways, in sidewalks and gutters, in medians, in vacant City lots, etc. The cost to the City, in salaries at top step and fringe benefits, for this service, approximates \$855,100 annually.

This staff combats weeds and vegetation entirely with hand tools such as weedeaters, chainsaws, loppers, backpack blowers, brooms, shovels, and rakes. Pre-emergent and post-emergent chemicals have not been utilized to control these weeds.

The Division should effectively utilize pre-emergent and post-emergent chemicals to prevent the occurrence of weeds. The Division should utilize herbicides in accordance with the City’s integrated pest management resolution. The resolution, adopted on

December 16, 1997, provided exceptions to use of herbicides on public streets and rights-of-way maintained by the Agency.

**Recommendation #167: The Keep Oakland Clean and Beautiful Division should develop and deploy alternatives to the use of labor-intensive hand tools to control weeds and the control of weeds and vegetation on a complaint basis. This should include the use of pre-emergent and post-emergent herbicides to control the growth of weeds in medians, sidewalks / gutters, alleys, and the edges of streets / gutters.**

**(7) The Graffiti Abatement Unit Should Not Remove Graffiti on Private Property, But Should Refer These Complaints to CEDA / Code Enforcement.**

The Agency's Call Center receives 2,400 service requests annually regarding graffiti abatement. The distribution of these graffiti abatement service requests by type is presented in the table below.

Type of Request	# of Requests	% of Total
Graffiti	970	39.8
Graffiti on bus bench (not part of a shelter)	5	0.2
Graffiti on bus shelters	5	0.2
Graffiti on light poles	66	2.7
Graffiti on Parks and Buildings	237	9.7
Graffiti on private property	509	20.9
Graffiti in public Right of Way	245	10.1
Graffiti on retaining walls	398	16.3
<b>TOTAL</b>	<b>2,435</b>	<b>100%</b>

As the table indicates, almost 21% of the graffiti abatement service requests concerned graffiti on private property. The Graffiti Abatement Unit will remove graffiti from private property once without charging the property owner. Thereafter, the property owner is responsible for removal of the graffiti.

The Agency should instead notify CEDA / Code Enforcement regarding the graffiti. CEDA / Code Enforcement should be responsible for working with the property owner to abate the graffiti using procedures already established.

**Recommendation #168: The process for abatement of graffiti on private property should be modified to place the burden for removal of graffiti on the private property owner.**

**11. THE FACILITIES MANAGEMENT DIVISION SHOULD ENHANCE ITS MAINTENANCE MANAGEMENT PRACTICES.**

In evaluating the approach that the Agency utilized for managing its facilities, the MCG evaluated not only the approach utilized by the Facilities Management Division, but also that of the Parks and Building Division. The recommendations in this section of the chapter apply to the management of the entire facility portfolio, not just that of one division or another.

**(1) A Comprehensive Preventive Maintenance Program Should Be Developed and Deployed for All of the City's Buildings**

Many building-industry and facility-management groups, including the American Public Works Association, the Building Owners and Managers Association (BOMA) International, the Association of Physical Plant Administrators (now named the Association of Higher Education Facilities Officers), and the Association of School Business Officers agree on the benefits of well-planned preventive maintenance.

These professional associations cite preventive maintenance for its effects on improving equipment's operating efficiency, preventing premature replacement of components, and avoiding interruptions for building occupants. Preventive maintenance is widely thought to reduce long-term costs by maximizing the operating capacities of equipment, minimizing downtime, and avoiding breakdowns that would otherwise lead to higher repair costs later. Although the project team found no studies that quantified specific costs and benefits of a comprehensive preventive maintenance program for buildings, some studies demonstrate efficiencies of planned maintenance and others show the relationship between building maintenance and reducing building deterioration. Studies within individual companies show savings in energy costs and repair costs, as well as

reductions in equipment breakdowns, due to preventive maintenance. For instance:

- The preventive maintenance tasks of cleaning coils and replacing dirty filters in a heating, ventilation, and air-conditioning (HVAC) system have shown reduced energy costs for running an HVAC of 8% – 10%.
- In one company that adopted preventive maintenance, equipment breakdowns went from being a common occurrence to constituting approximately one percent of scheduled operating time over a ten-year period.
- Further, maintenance efficiencies allowed the company to reduce its maintenance workforce from 15 to 8 employees during that time.
- In another instance, by training maintenance workers in preventive maintenance, nine community colleges in California improved the efficiency of HVAC operations and saved an estimated 6% to 19% of their total annual energy bills, or \$0.09 to \$0.26 per square foot per year.

The Agency is not preventively maintaining the heating, ventilating, and air conditioning, electrical and plumbing components for all of the City's buildings, although the Facilities Management Division is preventively maintaining these components in the Civic Center, the Hall of Justice, and the Eastmont substation.

The Agency should establish and implement a comprehensive preventive maintenance program. The elements of this preventive maintenance program are presented below.

- **Establish levels of service necessary to preventively maintain the facilities.** In establishing levels of service, the Agency should document what maintenance activities are needed to ensure that this particular system/component meets or exceeds its life expectancy. Manufacturer's literature and the experience of Agency staff are some ways to determine both acceptable life-cycles and what preventive maintenance work would result in achieving those life expectancies in the most efficient manner.
- **Prepare an annual work program for preventive maintenance of buildings and building components.** Once the levels of service have been established, setting the tasks into a work plan is the next step. The list of tasks to be performed could be described in detail. The frequency and nature of the work could be clearly stated. The materials to be used are specified in considerable depth and the manner in which the work is to be accomplished must be expressed in simple language.

- **Develop a formal work planning and scheduling system for preventive maintenance of buildings and building components.** The heart of any preventive maintenance program is scheduling and assigning specific preventive maintenance tasks. This is almost always done using a work order system. This element of the preventive maintenance program takes the work items developed for each facility component, such as the quarterly inspection of a rooftop HVAC unit, and assigns them to Agency staff according to the established structure and schedule.
- **Report actual versus planned results of preventive maintenance.** Effective preventive maintenance programs depend on feedback from Facilities Maintenance staff using the work orders and a reporting/tracking system of costs associated with the work order. This information is used to maintain the proper balance between preventive maintenance and renewal and replacement efforts.
- **Establish a reporting system.** Through a combination of informal evaluations and formal audits, a reporting system could be established to analyze the Agency's maintenance system to assure cost-effective maintenance.

Many of these elements were identified earlier in the maintenance management chapter.

**Recommendation #169: The Facilities Management Division should develop and install a preventive maintenance program for all of the City's buildings and building components.**

**(2) Develop And Install A Reliability-Centered Program For Facility Components.**

Reliability centered maintenance employs predictive testing and inspection approaches to determine preventive maintenance requirements and frequency. Reliability centered maintenance places great emphasis on improving equipment reliability, principally through the feedback of equipment condition data using primarily non-intrusive testing techniques, visual inspection, and performance data to assess machinery condition. For example, vibration analysis of a generator might be the basis for either accelerating or deferring a scheduled major overhaul, or infrared testing of a roof might indicate the need for small repairs now and avert a major repair project in the future.

The use of predictive testing equipment should be utilized on an ongoing basis to include the techniques enumerated below.

- Vibration analysis should be used to detect, identify, and isolate specific component degradation and its causes prior to serious damage or actual failure. Vibration monitoring helps to determine the condition of rotating equipment, a system's structural stability, and sources of airborne noise.
- Oil analysis should be used to determine the condition of a given oil, fuel, or grease sample by testing for viscosity; particle, fuel, and water contaminants; acidity/alkalinity (pH); breakdown of additives; and oxidation.
- Temperature monitoring devices should be used to detect temperature variances in machines, electrical systems, heat transfer surfaces, and structures and the relative magnitude of those temperature variances. Large changes in temperature often precede equipment failure. Infrared thermography, in particular, is a reliable technique for finding roof leaks and determining the thermal efficiency of heat exchangers, boilers, building envelopes, etc.

The cost impact of this recommendation is presented in the table below.

Annual Cost Increase		Annual Cost Decrease	
Authorize funding to retain a contractor to employ predictive testing equipment on an annual basis to include oil analysis and vibration analysis.	\$15,000	NA	\$0
<b>Total Operating Cost Increase</b>	<b>\$15,000</b>	<b>Total Operating Cost Decrease</b>	<b>\$0</b>

**Recommendation #170: The Facilities Management Division should contract, initially, for the employment of this predictive testing equipment on an annual basis. In the mid-term, Facilities Maintenance should selectively acquire this equipment and train its staff in its use.**

**(3) The Facilities Management Division and the Engineering and Construction Management Department Should Develop and Implement A Commissioning Policy.**

A commissioning process is designed to ensure that all building systems are installed, functionally tested, and capable of being operated and maintained to perform in conformity with the design intent and the owner's needs.



The commissioning policy should explicitly detail the role for Facilities Management Division in the commissioning process.

- The Engineering and Construction Department project manager should prepare a detailed Commissioning Plan at the earliest possible point in the development process as projects are being specified and design bid documents are being prepared. The commissioning plan should be reviewed and agreed to by the owner's representative, the Facilities Management Division, the design contractor and construction contractor. The plan should specifically detail the roles for the commissioning participants, their task assignments and schedules. Should independent balancing or system adjustment be required when construction is complete, the Engineering and Construction Department project manager should make appropriate contractual arrangements to insure availability and scheduling of the corrective services.
- Design documents, prepared by the Engineering and Construction Department or its Architecture and Engineering consultants should include planning for commissioning. The Facilities Management Division should be provided an opportunity to completely review and present written comments on all design documents prior to their approval.
- The Engineering and Construction Department should schedule regular weekly meetings with the building's owner, the Facilities Management Division during the commissioning process to verify plan progress, identify problems and resolve issues.
- Facilities Management Division staff should be part of the project inspection process. They should attend the initial start-up of a project and perform periodic inspections of all projects. The Facilities Management Division should complete written reports on all of its inspection activities and convey these reports to the Engineering and Construction Department project manager for review and discussion.
- Upon substantial completion of construction, Facilities Management Division staff should inspect the building and convey observed deficiencies to the Engineering and Construction Department project manager. The Engineering and Construction Department project manager should review the Facilities Management Division deficiency report, seek corrections or reconciled prior to certifying physical completion of the building.
- The Engineering and Construction Department should make arrangements during the commissioning process for the training of the Facilities Management Division staff in the operation and maintenance of the building and the hand-over of all documentation pertinent to the operation of the building and its equipment.

The commissioning policy is essential to effective “hand-offs” of new buildings from the City staff that designs these buildings (or manage the design) to the staff that maintain these buildings.

**Recommendation #171: The Engineering and Construction Department and the Facilities Management Division should develop and implement a facility commissioning policy.**

**(4) The Engineering and Construction Department and the Facilities Management Division Should Develop An Equipment Standardization Policy.**

Equipment standardization has been demonstrated to improve on-going reliability of buildings through its direct impact on reliability. Effective equipment standardization programs have been shown to reduce the frequency and number of functional failures that could be attributed to human errors such as improper lubrication, improper maintenance due to training or procedural inadequacies, or the installation of improper parts, just to name a few. Experience has shown that equipment standardization is an often-overlooked topic when it comes to most reliability improvement projects and initiatives. Equipment standardization can provide the Agency with several key benefits:

- Reduction in spare parts inventory and associated space and carrying costs;
- Reduction in training needs due to consolidation of equipment types and models;
- Reduction in need for specialty tooling;
- Less need for rigorous, multiple maintenance procedures;
- Increase in operating efficiency; and
- Reduction in the amount of maintenance errors, costs, and downtime.

An example of a possible standardization policy is presented below.

“The City’s standard for temperature and energy management control shall be Siemens. Building temperature, humidity and energy management controls shall be

direct digital control (DDC) technology utilizing distributed microprocessor based apparatus. Each building shall be designed to operate in a "stand alone" mode but shall include the necessary features for communication with a remote operator's station. Connection to a remote operator's station must be included at the time of bid and construction. The inclusion of such shall have no bearing on the environment control system to be provided."

**Recommendation #172: The Engineering and Construction Department and the Facilities Management Division should develop an equipment standardization policy.**

**(5) Establish A Facilities Management Advisory Board For The Facilities Management Division.**

A Facilities Management Advisory Board is intended to serve as a customer council for the Facilities Management Division. The specific purposes of the Board are as follows:

- To consider and recommend policies and strategies for the operation of the Facilities Management Division;
- To consider and recommend the annual rates to be charged customers for maintenance and repair as well as for replacement;
- Establish a means of regular communication between customers and the Facilities Management Division;
- Create a better understanding of the Facilities Management Division through business meetings;
- Provide information to customers necessary to make the most effective and efficient use of the services provided by the Facilities Management Division; and
- Review trends and areas of complaints to deal with the root cause.

This Facilities Management Advisory Board should be comprised of seven to nine members, representing the small and large customers of the Division and should meet at least quarterly.

**Recommendation #173: The Agency should establish a Facilities Management Advisory Board to serve as a customer council for the Facilities Management Division.**

**(6) The Facilities Management Division Should Develop And Adopt Service Level Agreements With Its Major Customers.**

Good customer service management stems from an acute sensitivity to the needs and concerns of facilities users, and manifests itself in a set of communication, decision-making, reporting, and feedback processes which encourage facilities users to actively participate in the management, and not simply the use, of facilities.

A clear understanding of the needs and concerns of customers is also critical to effectively running a Facilities Management Division. The understanding by the Facilities Management Division of its customers' needs should not be based solely on informal communication. The lack of a formal customer communication infrastructure can limit its ability to quickly revise its service practices to keep pace with changes in its customers' service needs. Relevant information may be lost or misinterpreted if communicated only through informal channels. In addition, the lack of a formal communication process can prevent the Facilities Management Division from gathering consistent information with which to evaluate customer satisfaction with its services.

One way to improve customer communication and relations is through the development of detailed service agreements. These agreements should include a description of service procedures, prices and billing procedures, repair priorities, repair authorization limits, performance standards, contact persons, and customer responsibilities. The agreements provide customers with a better understanding of the range of services offered by the Facilities Management Division and how to access these services. They also establish a clear understanding of how the Facilities Division's performance should be judged.

**Recommendation #174: The Facilities Management Division should develop and adopt service level agreements with the major operating departments that it serves.**

**(7) The Facilities Management Division Should Adopt Warranties For Maintenance And Repair Work Performed By The Division.**

The objectives adopted by the Facilities Management Division need consequences to achieve real power with customers. These objectives will help managers and employees understand what is expected, and will provide urgency to the task of changing the way the Facilities Management Division does business with its customers.

To achieve those consequences, the Facilities Management Division should warranty its work. The Division should develop such warranties in consultation with the Facilities Advisory Board.

**Recommendation #175: The Facilities Management Division should warranty its maintenance and repair work.**

**(8) The Facilities Management Division Should Provide Cost of Service Statements to Departments on a Monthly Basis.**

Accurate, timely, and detailed data from the Azteca Cityworks information system is critical to the issuance of customer bills. Accurate, timely, and detailed data are important, not only for recovering all facilities maintenance and repair costs from customers, but also for recovering them properly. Billing customers only for the costs of the goods and services they actually consume is important from the standpoint of treating them fairly and equitably, and complying with generally accepted accounting principles (GAAP).

Customer charges that are based on inaccurate data can send the message to customers that:

- The facilities management organization is not concerned about the accuracy of

its bills;

- Raise questions in customers' minds as to why a charge-back system is used in the first place; and
- Suggest that the facilities management organization's systems and procedures for capturing and ensuring the quality of data are lax, implying that the organization's work is slipshod in general.

Customer billing is a key point of contact between service provider and customer. If these contacts are tainted by bad information, customer relations are not going to be good. Indeed, in many cases, customer dissatisfaction with the in-house organization that manages and maintains its facilities stems from either a lack of understanding as to how charge-back rates and billing amounts are derived, or downright suspicion that rates and charges are intentionally manipulated by the facilities management organization to hide inefficiencies and stave off calls to outsource certain activities.

The Division should demonstrate its ability to provide accurate, timely, and detailed cost information based upon the data contained in Azteca Cityworks to its customers for the services that it provides. This demonstration should take the avenues presented below.

- The Division should provide each of its customers – General Fund, special revenue fund, or enterprise fund – with point of sale receipts for work orders.
- These point of sale receipts should provide detailed information regarding each transaction, the data of the transaction, the nature of the transaction, the labor hours, commercial charges, parts, etc. involved in the transaction, and the costs of those transactions.
- The point of sale receipts should be summarized in monthly reports provided to each department. The information should be provided in electronic form, preferably in an Excel spreadsheet, so that the department can analyze the information.
- The division manager for the Facilities Management Division should meet monthly with each department to review the monthly reports and discuss the basis and nature of the costs.

The primary purpose of a charge-back system is not to shuffle money from one fund or account to another, but to promote the cost-effective provision and use of the City's facility management services.

**Recommendation #176: The Facilities Management Division should provide point of sale receipts for each transaction. The point of sale receipts should be summarized in monthly reports provided to each department.**

**Recommendation #177: The Division Manager for the Facilities Management Division should meet monthly with each department to review the monthly reports and discuss the basis and nature of the costs.**

## **12. THE ENVIRONMENTAL SERVICES DIVISION SHOULD DEVELOP A SUSTAINABILITY CITY REPORT CARD.**

The Environmental Services Division is the leading business practice in the Agency. The City of Oakland has won a number of awards for its environmental practices. *SustainLane Government* ranked as the top city in the United States for the use of renewable energy. *SustainLane Government* ranked Oakland 9<sup>th</sup> overall in the country in terms of sustainability; only San Francisco was ranked higher in California. There is little that the Division can directly influence to improve the City's environmental practices above and beyond its current practices. In fact, some practices that benefit the environment are beyond the ability of the Division to directly impact and modify such as tap water quality, air quality, water supply, metro street and freeway congestion, metro transit ridership, and natural disaster risk.

However, the Division should develop and publish on an annual basis an environmental report card for the City. This report card should not only document existing practices, but also recommend further improvements to the City's environmental practices. The environmental report card should include such aspects as the following:

- Resource conservation (e.g., use of renewable resources, solid waste diversion, etc.);
- The environment and public health (e.g., elimination or minimization of hazardous and toxic materials)
- Transportation (e.g., reduction of traffic and pollution associated with traffic);
- Housing (e.g., affordable housing);
- Open space (e.g., mixed use urban villages, creation and maintenance of a diverse open space system etc.);
- Sustainable economic development (e.g., the creation of a diverse, stable, local economy, increase in sustainable business practices, etc.);
- Civic participation (e.g., development of sustainable lifestyles, volunteer efforts for the greening of Oakland, community participation, etc.); and
- Human dignity (e.g., meeting basic needs for shelter, health care, employment, and public safety).

**Recommendation #178: The Environmental Services Division should develop an annual report regarding the City's sustainable practices including recommendations to enhance those practices.**

### **13. THE AGENCY SHOULD IMPROVE THE MANAGEMENT OF SERVICE REQUESTS RECEIVED BY ITS CALL CENTER.**

Overall, in calendar year 2007, the Agency received 27,843 service requests or an average of 2,320 a month. The call Center handles over 4,700 direct phone calls each month and 250 emails, or nearly 5000 incidents.

However, as of June 3, 2008, 4,272 service requests or 15% were still open. The service requests that were still open as of June 3, 2008 by type of service request are presented in the table below.

Type of Service Request	Number of Service Requests	% of Total Service Requests
Bus Shelter Maintenance	1	0.02%
Code Enforcement	2	0.05%
EBMUD	1	0.02%
Electrical	1	0.02%



Type of Service Request	Number of Service Requests	% of Total Service Requests
Inspections	653	15.29%
Litter	262	6.13%
Parks and Buildings	143	3.35%
Street Cleaning	101	2.36%
Sewers	62	1.45%
Storm Drains	60	1.40%
Streets & Sidewalks	823	19.26%
Traffic Maintenance	706	16.53%
Tree Maintenance	1,457	34.11%
<b>TOTAL</b>	<b>4,272</b>	<b>100.00%</b>

Important points to note concerning the table are presented below.

- 34% of the open service requests were tree maintenance service requests. In fact, 66% of the tree maintenance service requests received in 2007 were still open in June 2008.
- 19% of the open service requests were streets and sidewalks service requests. Almost 60% of these open service requests were related to potholes. In fact, 62% of the service requests received in 2007 regarding streets and sidewalks were still open in June 2008.
- 17% of the open service requests were traffic maintenance service requests (i.e., signs, traffic safety, etc.). In fact, 82% of the service requests received in 2007 regarding traffic maintenance were still open in June 2008.
- 15% of the open service requests were inspection service requests (i.e., sidewalks, unsafe conditions, etc.). In fact, 82% of the service requests received in 2007 regarding inspections were still open in June 2008.

While the proportion of total service requests received in 2007 that were still open in June 2008 was relatively small, 85% of the open service requests were concentrated in these four areas. Of more concern, tree maintenance, streets and sidewalks, traffic maintenance, and inspections had closed a small proportion of the requests received in 2007 by June 2008: anywhere from 62% to 82% of the service requests received in 2007 were still open in these four areas in June 2008.

Most other local governments with a centralized call center have developed and deployed tracking mechanisms for calls received from residents and businesses. The

International City / County Management Association, in an analysis of call centers entitled *Call 311: Connecting Citizens to Local Government*, found that only 23% of the reporting cities with a population between 100,000 to 499,999 had a centralized customer service system.<sup>35</sup> Over 60% of the responding local governments reported that reports were generated regarding the amount of time taken to complete service requests, the volume of repeat requests, the neighborhood / geographic area, and the type of service request.

The Agency should develop a service request aging management reporting system for the Call Center. This reporting system should sort the service requests by their age based upon the date the service request was received and include the following features:

- The name of the person that made the service request;
- The nature and type of service request;
- The date the service request was received; and
- The supervisor to whom the service request was assigned.

The Agency should adopt an objective for closing service requests. Managers and supervisors should be held accountable for meeting this objective. The reporting system should be utilized as a tool to report the success in meeting this objective, and as a tool to hold these managers and supervisors accountable.

**Recommendation #179: The Agency should develop a service request aging management reporting system for the Call Center.**

**Recommendation #180: The Agency should adopt an objective for closing service requests.**

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<sup>35</sup> Call 311 Connecting Citizens to Local Government, International City / County Management Association, 2008

**Recommendation #181: Managers and supervisors within the Agency should be held accountable for meeting the objective.**

**14. THE CITY SHOULD ADOPT A POLICY THAT REQUIRES OPERATIONS AND MAINTENANCE FUNDING BE PROVIDED IN THE OPERATING BUDGET FOR THE AGENCY AS PART OF ACCEPTING NEW ASSETS THAT THE AGENCY WILL BE RESPONSIBLE FOR MAINTAINING.**

The Agency faces the need for significant investments to renew and rehabilitate streets, sidewalks, sewers, parks, facilities, and other assets. Continuing to defer those expenditures only increases the magnitude of future costs. This problem is compounded with the addition of parks, medians, and buildings by the City without the additional staff and supplies needed by the Agency to maintain and repair these assets. This will result in the degradation of the level of service provided by the Agency and the need for the premature replacement of these assets.

The Agency should work with the City Administrators Office and the City Council to develop and adopt a policy that requires the provision of operating and maintenance funding each time the City accepts an asset that the Agency will be responsible for maintaining. This funding should include the staffing, service and supplies costs required to maintain the asset,. The policy should be designed to clarify the inability of the Agency to continue to accept assets with staffing, service and supplies without suffering a degradation of levels of service and a shorter life span for these assets than should occur.

**Recommendation #182: The Agency should work with the City Administrator's Office and the City Council to develop and adopt a policy that requires the provision of operating and maintenance funding each time the City accepts an asset that the Agency will be responsible for maintaining.**

## **5. FINANCIAL MANAGEMENT**

The Agency receives little in the way of revenue from the City's General Fund. As a consequence, the Agency must be creative in identifying other sources of revenue that other cities are utilizing to support the maintenance, repair, and rehabilitation of the City's infrastructure.

This chapter presents alternative sources of revenue that the City has not utilized, but that other cities in California are utilizing to support the preservation of their infrastructure assets.

### **1. THE AGENCY HAS A NUMBER OF STRENGTHS AND OPPORTUNITIES FOR IMPROVEMENT IN FINANCIAL MANAGEMENT.**

The Agency has adapted to the fiscal reality in Oakland by developing sources of revenue independent of the General Fund. As noted elsewhere, the Agency receives much less General Fund support than its peers in California. That has enabled the City to utilize its General Fund revenues to support other services such as the Police Department and Fire Department.

While the Agency has been at the forefront of attempting to enhance LLAD funding for park, street tree, and streetlight maintenance, it has not been assertive in seeking the support of the Mayor and the City Council in adopting other new sources of revenue to fund asset rehabilitation and renewal.

### **2. THE CITY SHOULD ADOPT A CONSTRUCTION STREET IMPACT FEE.**

There are numerous factors contributing to the deterioration of pavement. These factors include environmental conditions (e.g., rain, extreme temperatures, etc.), tire

pressure and vehicle suspension characteristics, vehicle weight, number of axles, and frequency of use.

Research conducted by the American Association of State Highway Officials (AASHTO) indicates that wear and deterioration of pavement increases geometrically with increases in axle weight. In other words, doubling the weight on an axle increases the damage and stress to the pavement 16-fold. This research also suggested that the damage caused by one fully loaded, 80,000 pound five-axle truck is the equivalent of 9,600 automobiles in terms of damage to the pavement.

Other studies, beyond those conducted by AASHTO, have also shown that truck traffic causes considerably more damage to streets than passenger vehicles and that truck traffic accounts for up to 60% of the damage to the streets. Several references and citations regarding the impact of heavy truck traffic on local roads have been found. Among these are the following:

- UC Berkeley Institute of Transportation Studies, Pavement Research Center;
- The University of California Transportation Center;
- University of California Davis Institute of Transportation Studies, Pavement Research Center in conjunction with California Department of Transportation CalTrans;
- Kansas Department of Transportation K Trans Research Program;
- Urban Renaissance Institute, Toronto, Canada; and
- Illinois Department of Transportation

The studies cite the impact and cost of heavy truck traffic on various road types. They state that, compared to passenger vehicles, truck traffic is from 29,000 to 160,000 times more damaging to roads depending on the size of the truck.

A number of local governments have chosen to charge a construction street impact fee. These include such California local governments such as Richmond, Irvine, Marin County, San Rafael, Menlo Park, Union City, Petaluma, etc. This impact fee is typically charged as a percentage of the building permit valuation.

In fiscal year 2005-06, the building permit valuation in the City of Oakland was approximately \$427.3 million. If the City charged a 1% construction street impact fee, like most other cities, it would generate approximately \$4.273 million annually in new revenue for street rehabilitation.

The adoption of this fee will require that the City conduct a nexus study. The purpose of this nexus study is to identify the connection between new development that occurs within Oakland and the need for improved facilities within the area of benefit, for which Oakland is the service provider. After establishing the nexus, the impact fees are calculated based upon the proportionate share of the total facility use for the new development. The estimated cost for the development of the nexus study is presented in the table below, and the estimated annual revenue.

One-Time Cost Increase		Annual Revenue Increase	
Retain a consulting firm to conduct a nexus study to enable the imposition of a construction street impact fee.	\$50,000	Adopt a construction road impact fee	\$4,273,000
<b>Total Operating Cost Increase</b>	<b>\$50,000</b>	<b>Total Operating Cost Decrease</b>	<b>\$4,273,000</b>

**Recommendation #183: The Administrative Services Department for the Agency should contract for a nexus study to enable the City to charge a construction street impact fee.**

**Recommendation #184: The City should adopt a construction road impact fee.**

### **3. THE CITY SHOULD ADOPT INFRASTRUCTURE IMPACT FEES.**

The City does not charge impact fees with the exception of a traffic impact fee. This is not the norm; most other cities have adopted impact fees as indicated in the paragraphs below.

- **Sanitary Sewer Impact Fees.** A survey conducted by the State of California in 1999 found that 97% of all local governmental jurisdictions in California charged a sanitary sewer collection impact fee. Sewer impact fees cover the off-site costs of expanding and upgrading existing sewer collection facilities. Almost all (97%) of the local governments in the State charge some form of a sewer fee, whether called a connection fee or some other impact fee. For these local governments, 93% used per unit fees, 4% used per bedroom fees, and 3% used other means of a fee calculation.
- **Stormwater Collection Impact Fees.** The previously mentioned survey conducted by the State of California found that 60% of all local governmental jurisdictions in California charged a stormwater drainage impact fee. Storm drainage impact fees cover the costs associated with storm drainage facilities and citywide systems. These fees include both connection fees, which cover the local costs of permitting and inspecting, and on-site facilities and connections, and impact fees, which are collected to cover the pro-rated off-site costs of expanding and upgrading existing storm drainage facilities. As with sanitary sewer facilities, the local subdivision ordinance generally require project developers to provide on-site storm drainage.<sup>36</sup> State-wide, storm drainage fees were collected in the following ways: 54% collected fees per housing unit, 30% collected fees per acre, 8% collected fees per square foot, and 8% used other methods.
- **Park Impact Fees.** The previously mentioned survey conducted by the State of California found that 87% of all local governmental jurisdictions in California charged a park impact fee. Park impact fees cover the costs of upgrading existing local parks and acquiring new parkland. Park in-lieu fees, also known as Quimby fees, are paid by project sponsors in place of required parkland and open space for projects requiring land subdivisions. Some jurisdictions call their park fees in-lieu fees, while charging on a per unit basis, disregarding the Quimby Act

<sup>36</sup> Pay to Play: Residential Development Fees in California Cities and Counties, 1999, August 2001, California Department of Housing and Community Development.

formula outlined in State legislation. Statewide, 71% of the communities charging park or in lieu fees use per unit fees, 17% use a Quimby Act-based formula for parkland dedication in-lieu fees only, 5% use both in-lieu fees and unit-based fees, 4% use per bedroom fees, and 3% use other methods of determination.

- **Community and Capital Facilities Impact Fees.** These impact fees cover the growth-related costs of upgrading existing community facilities including civic and government centers, libraries, public works maintenance centers, etc. 48% of all responding jurisdictions reported that they charge a community and capital facilities impact fee.

These revenues can provide significant assistance in upgrading and expanding the City's sewer collection, stormwater collection, park, and community facilities. For example, in fiscal year 2006-07, the City of Long Beach collected \$789,000 in park impact fees. In fiscal year 2006-07, the City of Fremont collected \$10,846,000 in development impact fees including park dedication fees, park facility fees, fire impact fees, traffic impact fees and capital facility fees. These fees are levied on all new development in the City to pay for the construction and improvement of public facilities needed as a result of growth.

Impact fees are one of the most direct ways for local governments to require new developments to pay a larger portion of the increased costs for service they impose on a City. Impact fees are charges that are assessed on new development based on a standard formula and on objective characteristics, such as the number of dwelling units constructed. The fees are one-time, up-front charges, with the payment usually made at the time of building permit issuance, although some jurisdictions allow extended payments over a period of years. Essentially, impact fees require that each developer of a new residential or commercial project pay their proportionate share of the construction and acquisition cost of new infrastructure facilities required to serve that development.



Impact fees are intended to shift the burden of paying for growth-related capital improvements from citywide revenue sources such as property and sales taxes to the new development that creates the need for the improvements.

However, State law generally allows local jurisdictions to reduce or waive fees for affordable housing. Thirty-five percent of responding jurisdictions reported that they reduce or waive fees for affordable housing projects. AB 1600, also known as the Mitigation Fee Act [California Government Code §66000-66025) Section 66001(a)], requires that any city that establishes, imposes, or increases a fee as a condition of development approval do all of the following:

- Identify the purpose of the fee;
- Identify the use to which the fee is to be put;
- Determine how there is a reasonable relationship between the fee's use and the type of development project on which the fee is imposed; and
- Determine how there is a reasonable relationship between the need for the public facility and the type of development project upon which the fee is imposed.

Section 66001(b) further requires that the city determine whether there is a reasonable relationship between the specific amount of the fee imposed and the costs of building, expanding, or upgrading public facilities. Such determinations, also known as nexus studies, are to be made in written form and must be updated whenever new fees are imposed or existing fees are increased. It must advance a legitimate government interest; (2) substantially further the same interest; and, (3) the amount of the exaction or condition of approval cannot unreasonably exceed the burden created by the project, or deprive the owner of economically viable use of their property. Taken in combination,

the second and third conditions require that there be an identifiable relationship, or nexus, between the circumstances of the fee imposition, its amount, and the burden imposed by the proposed development upon the community. This requires, as noted previously, that the City conduct a nexus study before imposing impact fees.

The Act also requires cities to segregate impact fee revenues from other municipal funds and to refund them if they are not spent within five years.

The estimated annual revenue that the City would accrue would depend upon the types of impact fees adopted by the City and the level of development activity. However, based upon the amount of impact fee revenue collected by other cities with a comparable population and development stage, the MCG estimated the annual amount of fee revenue in the table below.

One-Time Cost Increase		Annual Revenue Increase	
Retain a consulting firm to conduct a nexus study to enable the imposition of impact fees for sanitary sewer collection, stormwater collection, parks infrastructure, and community and capital facilities	\$150,000	Adopt impact fees for sanitary sewer collection, stormwater collection, parks infrastructure, and community and capital facilities	\$500,000 to \$1,000,000
<b>Total Operating Cost Increase</b>	<b>150,000</b>	<b>Total Operating Cost Decrease</b>	<b>\$500,000 to \$1000,000</b>

**Recommendation #185:** The City should adopt impact fees for sanitary sewer collection, stormwater collection, parks infrastructure, and community and capital facilities.

**Recommendation #186:** The City should reduce or waive impact fees for affordable housing projects.

**Recommendation #187:** The Administrative Services Department should contract for a nexus study prior to adoption of these impact fees to determine the specific fee amount to be charged and the connection between that fee and the cost of sanitary sewer collection, stormwater collection, parks infrastructure, and community and capital facilities.

**4. THE REDEVELOPMENT AGENCY SHOULD FUND STREET AND SIDEWALK IMPROVEMENTS IN THE REDEVELOPMENT PROJECT AREAS.**

At the present time, the Redevelopment Agency is not providing funding for street and sidewalk capital projects in Program IN04 – Streets and Sidewalks Management and Maintenance in the City’s capital improvement program. Other redevelopment agencies do provide such funding for redevelopment project areas.

In Long Beach, for example, the redevelopment agency will be funding over an eight-year period from FY 2003 to FY 2010 a total of \$29.061 million for street and alley capital projects in redevelopment project areas. The redevelopment agency primarily focuses on improving the aesthetic and safety aspects of streets, such as creating medians, bike lanes, and pedestrian walkways. However, it is also engaged in several projects involving the design, construction, and repaving of streets.

Given the fiscal challenges facing the City, the redevelopment agency should provide funding required for street and sidewalk capital improvement projects in the City’s redevelopment project areas.

**Recommendation #188: The Redevelopment Agency should provide funding required for street and sidewalk capital improvement projects in the City’s redevelopment project areas.**

**5. THE AGENCY SHOULD DEVELOP A SPONSORSHIP POLICY FOR THE CONSIDERATION OF THE CITY COUNCIL.**

Sponsorship spending by North American companies was expected to rise by 12.6% in 2008 to \$16.78 billion, according to the *IEG Sponsorship Report*, a leading authority on sponsorship. That increase marks the sixth consecutive year that the growth rate will be higher than the year before and the biggest jump since 2000, according to IEG.

Spending in 2007 was up 11.5% over 2006.

A greater proportion of the 2008 sponsorship dollars were expected to go to sports properties with that category garnering 69% or \$11.6 billion-of the total. Projected dollar amounts for the non-sports categories are entertainment tours and attractions: \$1.61 billion, up 2.9% from \$1.56 billion in 2007; arts: \$832 million, up 3.4%; festivals, fairs and annual events: \$754 million, up 7.7%; and associations and membership organizations: \$482 million, up 4.6%.

There are a number of major employers with corporate presence in Oakland including Albertson's, Ask Jeeves, CH2M Hill, Clorox, FedEx, East Bay Municipal Utilities District, Cost Plus World Market, Kaiser Permanente, Pacific Gas and Electric, Southwest Airlines, United Parcel Services, Walgreens, Waste Management, etc. Several of these corporations have their headquarters located in Oakland including Kaiser Permanente, Clorox, Dreyer's, and Cost Plus World markets.

The Agency should actively seek sponsorships from these businesses for the support of the maintenance and repair of the assets maintained by the Agency. This should be done in the context of a sponsorship policy developed by the Administrative Services Department and approved by the City Council. This policy should include the sponsorship / partnership process, the solicitation and selection process, the agreement process, the follow-up and recognition process, and the accounting, recordkeeping, and reporting procedures.

The Administrative Services Department should be assigned responsibility for solicitation and selection of sponsors in accordance with the policies adopted by the City Council.

A number of other cities have received significant contributions for corporate sponsors.

For example:

- Many cities have had varying levels of success in attracting individual, corporate, and/or non-profit foundation dollars for the purpose of creating or improving a public open space. Through an extensive media campaign led by a local corporation and with the assistance of a public-relations firm, the City of Bellevue, Washington was able to raise \$1.7 million towards the total \$30 million cost for development of a downtown park (6% of the total cost). In contrast, Mill Race Park in Columbus, Indiana was built primarily with private funds. Nearly 63% of the \$8 million total cost came from local foundations and a community fund drive.
- The City of Indianapolis, Indiana has been successful and proactive in securing ongoing funds from private donors such as the Lilly Endowment which has given Indy Parks (the City's Parks and Recreation Department) some \$12 million over the last seven years for park development and maintenance.
- In Kansas City, Missouri, the fundraising campaign, which paid for over 80% of the cost of developing a new playground that met the requirements of the Americans with Disabilities Act, was extended to start a park endowment fund for ongoing maintenance. Its success is rooted in a strategy that targeted fundraising from agencies and foundations that were positioned to benefit directly from the park, including some nearby health facilities. Companies that manufacture play equipment for children with special needs were also targeted.
- In Chicago, the Park District has created a marketing division to seek sponsorships and promotions, particularly in the very marketable lakefront parks. In the first year, 1997, these sponsorships generated about \$918,000. To ensure that excessive advertising does not detract from the community's enjoyment of its parks, the Park District's Enhancements Committee regulates the number, size, and location of any advertising in parks.
- The County of Los Angeles has developed an adopt-a-park sponsorship program that is highlighted on the department's web site. A number of cities have adopted the same approach for adopting a park.

The Agency should follow the path selected by numerous cities and counties of developing corporate sponsorships to fund services of benefit to the business community as much as the residential community. To facilitate the benefits of sponsorship, the Department should establish a foundation as a 501(c)(3) charitable organization.

**Recommendation #189: The Administrative Services Department should develop a sponsorship policy for consideration and approval of the City Council. This policy should include the sponsorship / partnership process, the solicitation and selection process, the agreement process, the follow-up and recognition process, and the accounting, recordkeeping, and reporting procedures.**

**Recommendation #190: The Administrative Services Department should be assigned responsibility for solicitation and selection of sponsors in accordance with the policies adopted by the City Council.**

**Recommendation #191: The Administrative Services Department should establish a 501(c)(3) charitable organization on behalf of the Agency.**

## **6. THE AGENCY SHOULD DEVELOP AND UTILIZE PUBLIC-PRIVATE PARTNERSHIPS.**

A public-private partnership is a contractual agreement between a public agency and a private sector entity. Through this agreement, the skills and assets of each sector (public and private) are shared in delivering a service or facility for the use of the general public. Each party shares in the risks and the rewards potential in the delivery of the service and / or facility. This definition is based upon the National Council for Public-Private Partnerships. There are several advantages of these partnerships including cost containment, the ability to adjust revenues, generate capital investments, and transfer risk. The City already has a number of such partnerships including vehicle towing and storage, solid waste collection, operation of daycare facilities, etc.

However, other cities have extended the realm of public-private partnerships. Examples of these partnerships are provided below.

- **Boston, Massachusetts.** The city implemented a “Street Furniture Program” in 1988 that involves advertising on automatic public toilets, bus shelters, city information panels, newsstands, and telephone pillars. A private contractor operates the program, which has generated \$4.9 million in revenue since 2002 from a fixed fee and advertising revenue.
- **Huntington Beach, California.** The city currently has various marketing partnerships with private firms, including a beverage agreement that gives the firm exclusive rights for: (1) vending machines on public land (approximately 50), (2) beach and park and recreation concessions, and (3) promotion at the city’s Pier Plaza for up to one weekend per month. The city’s beverage partner provides an annual fee to the city.
- **Chicago, Illinois.** In May 2006, the city of Chicago undertook a RFP process to operate four downtown parking garages and collect the parking revenues, in return for an upfront lease payment. The city awarded the 99-year operating lease to the highest bidder and received a \$563 million upfront payment. The city’s four parking garages are the largest underground parking system in the nation and have 9,000 spaces. The garages generated a net operating income of \$12.2 million in 2005, with daily parking rates ranging from \$11 to \$22. The lease does not restrict the parking rates at the facilities. Current parking rates range now range from \$14 to \$28. The city, in turn, must maintain adequate street access to the facilities, but is not limited in its ability to set parking rates on metered streets or other city-owned parking facilities. The parking concession RFP requested that firms provide evidence of their financial ability to raise the concession payment and their technical capabilities to operate the facilities. Prior to the release of the RFP, the Illinois legislature approved a change in state law to exempt the parking garages (as well as Midway Airport) from property taxes if leased to a private, for-profit company. The city intends to use the upfront payment for neighborhood improvements, increase funding for the city's pension funds, and retire about \$160 million of bonds issued to finance one of the parking facilities.

Public-private partnerships should be viewed in a continuum of increasing private sector involvement and participation in the risk/reward paradigm. There must be a consistent methodology applied in evaluating each opportunity, and benefits must accrue to the City including:

- Cost savings;

- Service efficiencies;
- Untapped market value;
- Innovation and implementation of new technology; and
- Risk transfer.

These benefits must be evaluated within the context of the specific opportunity and balanced against the issue of control.

**Recommendation #192: The Agency should develop and implement public-private partnerships.**

**7. IN FISCAL YEAR 2009-10, THE CITY SHOULD ADDRESS THE OPERATING REVENUE IMBALANCES AMONG THE DIFFERENT FUNDS WITHIN THE EQUIPMENT INTERNAL SERVICE FUND.**

In an April 2008 report, the City's Budget Office made a number of important points regarding the Equipment Fund.<sup>37</sup> These points are presented below.

- "Since the total debt service on the 2000 and 2002 Lease-Purchase Agreement dropped substantially beginning in FY 2007-08, the fund is currently balanced."
- "However, internal service charges are not budgeted according to actual usage. Some agencies / departments and funds are being over-charged and some are being under-charged. The fiscal impact per agency / department and fund is provided in the table below."

Fund No.	Fund	2008-09 Budget	2008-09 Reallocation	Over / (Under) Funded
1010	General Fund	\$8,416,648	\$8,572,935	(\$156,287)
1710	Recycling Program	\$15,984	\$15,802	\$182
1720	Comprehensive Clean-Up	\$2,198,466	\$3,104,419	(\$905,953)
1740	Hazardous Materials Inspection	\$21,366	\$4,880	\$16,486
1750	Multipurpose Reserve	\$22,629	\$16,282	\$6,347
1760	Telecommunications Reserve	\$7,846	\$5,946	\$1,900
2102	Department of Agriculture	\$24,000	\$668	\$23,332
2108	HUD-CDBG	\$21,707	\$0	\$21,707
2128	DHHS	\$50,985	\$87,468	(\$36,483)
2211	Measure B:ACTIA	\$155,728	\$35,379	\$120,349

<sup>37</sup> City of Oakland Budget Office, Action on A Report Discussing the Financial Status of the Internal Service Fund (4100) and Providing Options for Internal Service Rate Changes for User Agencies / Departments in Order to balance the Fund, April 24, 2008



Fund No.	Fund	2008-09 Budget	2008-09 Reallocation	Over / (Under) Funded
2230	State Gas Tax	\$1,217,528	\$1,246,168	(\$28,640)
2251	Measure Y	\$0	\$16,758	(\$16,758)
2310	LLAD	\$1,350,446	\$1,516,305	(\$165,859)
2415	Development Service	\$257,408	\$73,858	\$183,550
3100	Sewer Service	\$1,419,699	\$852,825	\$566,874
3200	Golf Course	\$7,387	\$587	\$6,800
4200	Radio / Telecommunications	\$44,657	\$25,689	\$18,968
4400	City Facilities	\$495,867	\$269,200	\$226,667
4500	Central Stores	\$46,935	\$100,712	(\$53,777)
7750	Grant Clearing	\$371,214	\$200,619	\$170,595
<b>TOTAL</b>		<b>\$16,146,500</b>	<b>\$16,146,500</b>	

Important points to note concerning the table are presented below.

- This table reflects the Equipment Services Division budget for FY 2008-09, with costs allocated proportionally based upon the actual costs incurred by each fund in fiscal year 2006-07.
- Seven funds are underfunded and not contributing sufficient revenue proportional to the costs incurred by the Equipment Services Division in the maintenance and repair of the vehicles assigned to the fund.
- Thirteen funds are overfunded and contributing more revenue than proportional to the costs incurred by the Equipment Services Division in the maintenance and repair of the vehicles assigned to the fund.

These imbalances should be addressed as part of the fiscal year 2009-10 budget process. It should be noted that the impact on the General Fund is minimal, and that even this minimal impact could be reduced through reduction of the fleet assigned to General Fund departments.

In addressing these imbalances, the City should budget revenues for these agencies / departments for the Equipment fund in two separate object accounts. These two proposed object accounts are presented and described below.

- **Equipment Operating and Maintenance Object Account.** This object account would be utilized to reimburse the Equipment fund for those costs associated with the maintenance and repair of equipment including personnel, supplies, contractual services and supplies, fuel, repairs and maintenance, general and administrative, rental, etc.

- **Equipment Replacement Object Account.** This object account would be utilized to reimburse the Equipment fund for those costs associated with replacement of equipment including acquisition of capital assets, the costs of the 2002 Equipment Master Lease, equipment upfitting, etc.

The report prepared by the Budget Office also noted that the Equipment internal services fund had a sizeable negative fund balance. The report recommended a goal of a ten-year repayment plan to recoup the negative fund balance using the General Fund surplus when available. The negative fund balance - \$16.3 million in April 2008 – is too sizeable to realistically address. The ten-year repayment plan should not be implemented.

**Recommendation #193:** The Equipment Services Division should develop and recommend adjustments that address operating revenue imbalances in the Equipment fund among the various funds as part of the fiscal year 2009-10 budget submittal.

**Recommendation #194:** The Equipment Services Division should develop and recommend two object accounts for the allocation of Equipment fund costs: an equipment operating and maintenance object account and an equipment replacement object account.

**Recommendation #195:** The ten-year repayment plan to recoup the negative fund balance for the Equipment fund using the General Fund surplus when available should not be implemented. The negative fund balance for the Equipment fund should be forgiven.

**8. THE CITY SHOULD ESTABLISH TWO SUB-FUNDS FOR THE EQUIPMENT FUND; ONE FOR OPERATING AND MAINTENANCE AND THE OTHER FOR REPLACEMENT.**

At present, revenue received from City departments for the operating and maintenance costs for assigned equipment and the replacement for this equipment is mixed in one fund. With this practice, it is difficult to determine the specific problems within the fund such as whether operating revenue is being used to subsidize the acquisition of new vehicles or vice versa.

Two sub-funds should be established. One sub-fund should be utilized for operating and maintenance expenses and revenues. The other sub-fund should be utilized for replacement revenues and expenses.

**Recommendation #196: The Equipment internal services fund should be modified to include two sub-funds: one for operating and maintenance revenue and expenses and the other for replacement revenue and expenses.**

**9. THE EQUIPMENT SERVICES DIVISION SHOULD USE A CHARGEBACK SYSTEM BASED UPON ACTUAL COSTS, AND THE CHARGES SHOULD BE ADJUSTED ANNUALLY.**

The Equipment Services Division does charge its customers for the services that it provides. However, these chargeback rates have not been updated annually as the cost structure for the Division changes (i.e., labor costs increase, parts costs increase, etc.). These rates have not been updated for approximately five years. In addition, the rates are charged on a flat rate per class of vehicles.

Charge-back rates should be designed to promote cost recognition and control. In general, this means that rates should be tied to the costs of providing discrete goods and services that are recognizable to the average fleet user. Rates should also differentiate among the goods and services provided insofar as the costs of their provision are significantly different. One of the best indicators of the appropriateness of a rate structure is that the rates employed are logical and intuitively acceptable.

The importance of developing charge-back rates that reflect the actual cost incurred in providing the service cannot be over emphasized. Using charge-back rates that do not accurately reflect these costs largely defeats the purpose for charging users for the resources they consume. Inaccurate rates do not encourage fleet users to consume

goods and services in the most efficient and effective manner because the true costs of their consumption remain hidden. By inhibiting such recognition, inaccurate rates also reduce fleet user scrutiny of the Division's performance, thereby weakening incentives for the Division to provide services in the most cost-effective manner possible.

Some fleet services organizations seek to avoid such scrutiny by utilizing charge-back rates which make it impossible for users to determine the derivation and, hence, the reasonableness, of in-house charges. All-inclusive fixed rates per mile or per class are examples of charge-back rates which tend to obscure the magnitude and sources of costs and make it difficult to judge the value of the services for which in-house charges are imposed.

In short, implementing a charge-back system that employs full-cost, service-based rates is not looked upon with universal enthusiasm among fleet managers. It entails a rigorous approach to fleet management -- one that invites scrutiny, fosters accountability, prevents obfuscation, and requires considerable managerial expertise and discipline. Organizations that employ such a funding process clearly belong in the front ranks of professional fleet management programs.

In addition, the Division does not charge accident or abuse costs to customers in which the customer is at fault for the accident and the costs of that accident cannot be recovered from the other party's insurance. The Division absorbs these costs. A charge-back system that reflects actual costs is preferable for two reasons: (1) a properly designed charge-back system improves the consumption and provision of fleet resources; and (2) it promotes equitable treatment of fleet users. Charging departments

for the costs of accidents in which the department's employee is at fault will cause that department to enhance the management of that cost.

**Recommendation #197: The Equipment Services Division should utilize a chargeback system that reflects the actual costs of providing services for each vehicle in the fleet, and not a flat rate per class.**

**Recommendation #198: The Equipment Services Division should charge departments for the costs of accident repair or necessary vehicle replacement resulting from accidents in which a department's employee is found at fault or in which the Division is unable to recover the costs from the other party's insurance.**

**10. THE INTERNAL SERVICE CHARGEBACK RATES UTILIZED BY THE AGENCY SHOULD PROVIDE TRANSPARENT COST BENCHMARKS FOR THE CUSTOMERS OF THESE SERVICES.**

The use of a cost charge-back system has been clearly established as a best management practice for internal service providers. Most cities in the country the size of Oakland use a comprehensive cost charge-back system for their internal service programs. A good cost charge-back system improves the quality and cost competitiveness of internal services by improving cost recognition, sending clear price signals to customer agencies, and establishing transparent cost benchmarks for the fleet services organization that can be easily compared with alternative service providers.

A properly designed charge-back system improves the consumption and provision of internal resources by (1) illustrating linkages between the behavior of internal service customers and the costs of the services they consume; and (2) encouraging internal service customers to hold internal service management organizations accountable for the quality and costs of the goods and services they provide. Such systems also promote equitable treatment of internal service customers. Since users pay only for the

resources they consume, there is no cross-subsidization of internal service costs under a properly designed and implemented charge-back system. One of the implications of this benefit is that fee-supported departments and programs pay the full cost of the internal service resources they consume and do not receive any subsidies from the General Fund.

Charge-back rates are developed in several steps, with analyses of total costs joining information gathered on operations to create a rate structure that provides insight on the total costs of specific activities. The steps used in the creation of charge-back rates should consist of:

- Identifying the costs to be recovered such as budgeted personnel costs, operating costs and supplies costs;
- Defining the services provided by the Agency;
- Allocating costs to cost pools that correspond to the services provided;
- Defining the rate structure;
- Determining billable units of service; and
- Calculating rates.

A review of the charge-back rates charged by the Equipment Services Division indicates that the rates are high in many instances. More specifically:

- The shop labor rate, as proposed, is \$137 per hour. Part of the flaw in the shop labor rate is that it is based upon the labor hours that the Division's staff have charged to work orders, which in many instances is far less than should be charged. For example, four employees assigned to the hall of Justice charged forty (40) hours or less to work orders in a twelve month period. This is less than 3% of what the four positions should be charging to work orders. This inflates the shop labor rate. Dealerships and repair shops in Oakland charge shop labor rates that range from \$88 to \$165, with a median of \$96. The Division's shop labor rate is 43% higher. With the number of authorized technicians, the Division

should be charging 69,000 labor hours annually to work orders, the Division would utilize a shop labor rate of \$108 or 21% less.

- A part markup rate of 30% is proposed. This is within benchmarks.
- A commercial markup of 40% is proposed. This is much higher than benchmarks that range from 10% to 15%.
- A fuel markup of 15% is proposed. The benchmarks typically utilized range from \$0.04 per gallon to \$0.09 per gallon.
- The charge-back rates do not include an equipment services management charge. The benchmark is typically \$5 to \$15 per month per vehicle.

Some of these same problems exist with the Facilities fund. That fund had \$2,796,951 of expenses in 2007-08 that was not charged to work orders. That amounts to almost 12% of the chargeable maintenance and repair expenses. In addition, these costs are charged by department, and are not converted to cost per square foot. If these costs were converted to cost per square foot, customers would be better able to judge the reasonable of these costs.

**Recommendation #199: The Equipment Services Division's charge-back rates should be re-calculated, including the hours that staff should be charging to work orders, based upon the cost structure of the Equipment Services Division. Upon the re-calculation of these rates, the charge-back system and proposed rates should be shared and reviewed with customers and the Fleet Advisory Board. This review should occur on an annual basis.**

**Recommendation #200: The Facilities Fund should assure that labor hours and costs are charged to work orders, and provide its costs to customers both in the total and a cost per square foot.**

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**11. IN FISCAL YEAR 2009-10, THE CITY SHOULD ADDRESS THE OPERATING REVENUE IMBALANCES AMONG THE DIFFERENT FUNDS WITHIN THE FACILITIES INTERNAL SERVICE FUND.**

In an April 2008 report, the City's Budget Office made a number of important points regarding the Facilities Internal Service Fund.<sup>38</sup> These points are presented below.

- The Facilities Fund supports 111.00 full-time equivalent positions in FY 2008-09, which is at the same level as FY 2001-02.
- During the same period, the budgeted personnel costs increased considerably from \$6.5 million in FY 2001-02 to \$11.1 million in FY 2008-09 (70%) due to negotiated salary increases as well as rising retirement and fringe benefit costs.
- Operational costs increased by 300% over the time period from FY 2001-02 to FY 2008-09. This includes the costs of supplies and materials, service expenditures, contract services, travel and education. This includes significant increases in the cost of water and outside contract services.
- Over the past ten years, the fund has gone from a negative beginning fund balance of \$(8.2) million to \$(28.9) million.

The budget versus actual expenditures by fund is presented in the table below.

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<sup>38</sup> City of Oakland Budget Office, Action on A Report Discussing the Financial Status of the Internal Service Fund (4100) and Providing Options for Internal Service Rate Changes for User Agencies / Departments in Order to balance the Fund, April 24, 2008



	2008-09 Budget	2008-09 Re- Allocation	Over/ (Under) Funded	% of Total
General Fund	\$10,963,344	\$14,446,622	\$(3,483,278)	59.5%
Mandatory Refuse	\$286,116	\$228,286	\$57,830	-1.0%
Recycling Program	\$48,527	\$79,627	\$(31,100)	0.5%
Comprehensive Cleanup	\$397,865	\$534,790	\$(136,925)	2.3%
Multi-Purpose Reserve	\$35,795	\$36,274	\$(479)	0.0%
DHS	\$0	\$32,452	\$(32,452)	0.6%
Measure B: ACTIA	\$83,215	\$84,331	\$(1,116)	0.0%
State Gas Tax	\$235,691	\$316,803	\$(81,112)	1.4%
Library Services Retention	\$432,922	\$483,102	\$(50,180)	0.9%
LLAD	\$3,234,345	\$4,575,566	\$(1,341,221)	22.9%
Traffic safety	\$14,903	\$20,032	\$(5,129)	0.1%
Sewer Service	\$340,286	\$457,396	\$(117,110)	2.0%
Equipment	\$178,980	\$240,576	\$(61,596)	1.1%
Radio / telecomm	\$56,660	\$259,299	\$(202,639)	3.5%
Reproduction	\$37,138	\$169,956	\$(132,818)	2.3%
City Facilities	\$318,478	\$428,082	\$(109,604)	1.9%
Central Stores	\$74,366	\$84,537	\$(10,171)	0.2%
Purchasing	\$31,587	\$31,587	\$0	0.0%
Grant Clearing	\$1,444,287	\$1,559,294	\$(115,007)	2.0%
<b>TOTAL</b>	<b>\$18,214,505</b>	<b>\$24,068,612</b>	<b>\$(5,854,107)</b>	<b>100.0%</b>

Overall, these funds contribute \$5.8 million less than the costs of services provided in the Facilities Fund. There are two funds that contribute substantively less to the Facilities Fund than their “fair share”: the General Fund and the LLAD fund. These two funds comprise 82% of the revenue shortfall to the facilities fund. These two funds are not in a position to correct their failure to contribute their “fair share.”

Other funds, however, should be “trued up” and contribute their “fair share” in 2009-10.

This should include the following funds:

- The Recycling Program fund should increase their contribution in 2009-10 by 64% or by approximately \$31,000 annually;
- The Comprehensive Clean-up fund should increase their contribution in 2009-10 by 34% of approximately \$137,000 annually;
- The DHS fund should increase their contribution in fiscal year 2009-10 from the current \$0 to \$32,500 annually;
- The State Gas Tax fund should increase their contribution by 34% annually or

approximately \$81,100 annually;

- The Library Services Retention fund should increase their contribution in 2009-10 by 11% or \$50,200 annually;
- The Sewer Service Fund should increase their contribution in 2009-10 by 34% or by \$117,700 annually;
- The Equipment fund should increase their contribution in 2009-10 by 34% or by \$61,600 annually;
- The Radio / Telecomm fund should increase their contribution in 2009-10 by 457% or by \$202,600 annually;
- The Reproduction fund should increase their contribution in 2009-10 by 457% or by \$132,800 annually;
- The City Facilities fund should increase their contribution in 2009-10 by 34% or by \$109,600 annually; and
- The Grant Clearing fund should increase their contribution in 2009-10 by 8% or by \$115,000 annually.

Collectively, increasing the contribution by these funds to match the costs of services incurred by the Facilities Fund would increase the revenue received by the Facilities fund by \$1.03 million annually. These adjustments will not resolve the fund imbalance. The General Fund and the LLAD fund are not in a position to absorb the cost increases necessary to pay the Facilities fund their “fair share” of the costs incurred on their behalf.

The report also presented a ten-year repayment plan to draw down the negative fund balance in the Facilities fund by further increasing charges and funds. Given the size of the negative fund balance, this repayment plan should not be implemented. Instead, the negative fund balance should be forgiven.

**Recommendation #201: The Facilities Services Division and the Parks and Building Division should develop and recommend adjustments that address**

operating revenue imbalances among the various funds as part of the fiscal year 2009-10 budget submittal.

**Recommendation #202:** The ten-year repayment plan that increases charges to departments and funds in order to recoup the negative fund balance for the Facilities Internal Service Fund should not be implemented. The negative fund balances for the Facilities Funds should be forgiven.

**12. THE CITY SHOULD USE LEASE-PURCHASING, BUT ONLY FOR REPLACEMENT OF HEAVY EQUIPMENT.**

The Equipment Services Division is making payments on the 2002 Master Lease. The payments this year amount to \$2,562,224. The payments for this Master Lease end in 2010 and 2012. It is extremely illogical to use a ten-year lease to fund the replacement of vehicles that will require replacement before the ten-year lease is fully paid. Police patrol sedans should typically be replaced every three years; general-purpose sedans and pickup trucks should typically be replaced every eight years. The ten-year lease was utilized to fund replacement of these three classes of vehicles (and other classes of vehicles as well).

The MCG recommends that the City utilize lease purchase financing, but solely for heavy equipment with long replacement cycles or with high costs per unit such as fire apparatus and street sweepers. Other cities' experience with leasing of light equipment prove that the use of lease purchase financing for light and medium equipment is **not** cost-effective.

In considering leasing, the City should consider the following factors as the basis for evaluating leasing versus outright purchase of vehicles:

- Financial Considerations. Paying cash is inherently the least expensive way to acquire assets (including vehicles) as long as all other funding sources require the payment of interest with the principal repayment. Next to cash, using funds

that have the lowest associated interest rate will be the most economical way to make purchases. Government entities (like Oakland) have the potential to secure lower cost capital funds than private sector firms due to their ability to offer tax-exempt income to investors. Governmental entities must balance the low interests rates associated with public debt against the entity's borrowing capacity and competing asset needs. Tax-exempt leasing provides a way to secure funds at low interest rates without issuing public debt.

- **Administrative Considerations.** Leasing provides a flexible way to meet vehicles needs. Leasing providers/fleet management firms are able to leverage investments in technology, communications infrastructure, linked vendor networks, streamlined business processes and functional expertise over multiple firms. Leasing providers/fleet management firms allow rapid adoption and/or expansion of technology and/or enhanced fleet management programs without lessee investments in equipment or personnel.
- **Operational Considerations.** The ability to replace a higher proportion of the fleet may justify higher-cost vehicle sourcing alternatives as a means of achieving overall fleet goals.

There are three basic types of leases enjoying significant usage in local governments:

- Tax-exempt Leases (a form of conditional sale.
- Open-End Leases (also referred to as "TRAC", "capital," or "finance" leases; and
- Closed-End Leases (also referred to as "operating," "net," or "walk-away" leases).

Analysis completed of alternatives for financing the replacement of vehicles using the financial model developed for the National Association of Fleet Administrators (NAFA) Foundation by the consulting firm, Deloitte & Touche LLP, has led to the following conclusions:

- Tax-Exempt leasing had nearly the same NPV as paying cash.
- Open-End leasing was more expensive than Tax-Exempt leasing or paying cash due to the slightly higher applicable interest rate and the management fee.
- The Closed-End lease calculation reflects the same interest rates and management fees as Open-End leasing but also reflects the need to constantly make principle and interest lease payments that are based on a more frequent replacement cycle, and the use of a short lease term to ensure that the Lessor has marketable vehicles for resale.

Based on both Total Cost and Net Present Value, the analysis completed of alternatives for financing the replacement of vehicles resulted in the ranking from least-to-most expensive as follows:

- Current (pay cash)
- Tax-exempt Lease
- Open-End Lease
- Closed-End Lease

The MCG recommends that the City utilize tax-exempt leasing for the acquisition of heavy equipment.

**Recommendation #203: The City should utilize lease financing solely for replacement of heavy equipment, particularly over the next three fiscal years.**

**Recommendation #204: The Equipment Services Division should be responsible for administering the leases for equipment within the City's fleet.**

### **13. THE SEWER SERVICE FUND REVENUES AND EXPENDITURES ARE BEING UTILIZED INAPPROPRIATELY.**

The exhibit following this page presents the fiscal year 2008-09 budget for the Sewer Service Fund and the actual expenditures as of the end of September 2008. Important points to note about the fund budget are presented below.

- Budgeted revenues for the fund amount to \$32,647,538. Estimated year-end expenditures for the fund approximate \$28,746,000.
- Estimated expenditures for the maintenance and repair of the sanitary sewer system amount to \$5,569,000 or 19% of the total budgeted expenditures for the fund.
- Budgeted expenditures for the Engineering Design and Construction Department / CEDA amount to \$6,244,000 or 12% more than the costs of the maintenance and repair of the sanitary sewer system. This excludes the transfer to the General Fund.

- Some of the costs being charged by the Engineering Design and Construction Department to the Sewer Service Fund seem significantly out of proportion to the needs of that fund. The cost of land survey services, for example, are estimated to cost the Sewer Service Fund \$584,000 in fiscal year 2009-09. The costs of Construction Management are estimated to cost \$1,350,000 in fiscal year 2008-09. These costs exceed cost of construction guidelines employed by the Matrix Consulting Group for engineering design and construction management relative to the actual construction expenditures for sanitary sewer construction in fiscal year 2006-07 and 2007-08.
- All of Right-of-Way Management is budgeted in the sanitary sewer fund, although much of the costs do not relate to the sanitary sewer system. While revenues are allocated to the fund for services provided by Right-of-Way Management, these revenues do not recover the costs of these services. Sanitary sewer ratepayers are subsidizing development provided by Right-of-Way Management; the subsidy approximates \$1.1 million annually. It is inappropriate for Right-of-Way Management to be budgeted in whole in the Sewer Service Fund; it is inappropriate for this fund to subsidize development. The Right-of-Way Management expenditures should be budgeted in a "clearing fund" and charged to other funds such as the Sewer Service Fund based upon the services provided to that fund
- All of the services being provided by the Engineering Design and Construction Department to the Sewer Service Fund should be budgeted in a "clearing fund" and charged to the Sewer Service Fund, or other funds, based upon the services provided to that fund.
- The City is charging the Sewer Service Fund \$600,000 annually for office space in addition to the transfer to the General Fund from the Sewer Service Fund in the amount of \$3.011 million. This is inappropriate since this cost should be reflected in the General Fund transfer. The General Fund transfer from the Sewer Service Fund amounts to an estimated \$2,493,000 for fiscal year 2008-09.

The fund lacks the capacity to provide funding for essential capital projects to address problems with the sanitary sewer infrastructure. This results from the use of the Sewer Service Fund as a source of operating expenditures that are excessive in proportion to need. The amount of budgeted expenditures by the Engineering Design and Construction Department / CEDA exceed immediate requirements, and immediate necessity.

There are four steps that the City should take to address this problem. These steps are enumerated below.

- The fund manager for the Sewer Service Fund should not be in the Engineering Design and Construction Department / CEDA. The fund manager should be in the Infrastructure and Operations Department / Public Works Agency.
- The Engineering Design and Construction Department / CEDA and any other department that is funded in part by the Sewer Service Fund should be required to submit a budget request to the Infrastructure and Operations Department / Public Works Agency as part of the annual budget preparation process. The Infrastructure and Operations Department / Public Works Agency should have the authority to review, comment, and critique these requests before submittal to the City's Budget Office.
- The level of budgeted expenditures by the Engineering Design and Construction Department / CEDA should be reduced to the level that can be substantiated by workload allocation, work programs, and time charges. The Agency should review and approve the workload allocation, work programs, and time charges.
- Right-of-Way Management should not be budgeted in the Sanitary Sewer Fund. Right-of-Way Management should be budgeted in the General Fund in a "clearing fund."

The inability of the Sewer Service Fund to provide financial resources for capital projects does not result from a lack of revenue. It results from an inappropriate use of existing fund financial resources. Given the significant number of sanitary sewer overflows, these problems need to be corrected promptly so that funds can be allocated to capital improvement projects.

## FY 2008-09 Sewer Service Fund Budget

**FUND 3100 SEWER SERVICE**  
**REVENUES AND EXPENDITURES**

**FY2008-09 (P08-09)**

Cash in Treasury (July 1, 2008)	(1,173,211)
Cash with Trustee (July 1, 2008)	29,064,287
<b>Beginning Fund Balance (July 1, 2007)</b>	<b>27,891,076</b>

<b>Revenue</b>	<b>Budget</b>	<b>Actual</b>
44xxx Interest	900,000	412,176
423XX PW Fee: Sewer Permits, Grading & Excavating	431,000	285,657
45113 PW Fee: Sewer Service	29,772,276	18,828,122
45114 – 19 PW Fee: Permits & Inspection	1,466,262	941,678
45122 PW Fee: Sewer Mitigation	78,000	39,800
Other	-	957
<b>Total Revenue</b>	<b>32,647,538</b>	<b>20,508,390</b>

<b>Expenditures – O&amp;M</b>	<b>Budget</b>	<b>Expended</b>	<b>Encumbered</b>	<b>Projected P12-09</b>
4111 City Attorney: Administration	51,322	26,569		39,853.50
4311 City Attorney: Advisory	89,937	46,534		69,800.25
8411 Revenue: Administration	819,740	414,792		622,187.39
20251 Fire: Communication Emerg. Dispatch	127,954	80,937		121,404.90
20321 Fire: Technical Support	127,485	86,806		130,209.65
30131 PWA: Call Center	99,535	68,471		102,705.86
30531 Infrastructure Maint: Administration	379,654	80,553		120,828.80
30532 Infrastructure Maint: Storm Drain	3,308,408	1,774,618	2,439	2,661,927.69
30533 Infrastructure Maint: Sewer System	7,658,533	3,712,467	121,061	5,568,699.96
30534 Infrastructure Maint: Street Sidewalk	551,577	124,040	1,120	186,059.45
30541 Equipment Services – Admin.	12,500	12,356	144	18,534.18
3068X Env. Services: Env. Remediation	1,229	106		156.03
88321 DEC: Administration (trf to Fund 10100)	3,006,383	1,662,203		2,493,304.22
88331 DEC: Project Delivery – Administration	125,405	57,022	906	85,533.57
88332 DEC: Construction Management	2,237,258	900,300		1,350,450.26
88335 DEC: Survey	674,241	389,621		584,432.13
88341 DEC: Engineering Design & ROW Adm	995,664	259,807	4,897	389,711.21
88342 DEC: Streets & Structures	988,730	98,107		147,160.83
88343 DEC: Right of Way Management	2,532,319	1,516,353	35,000	2,274,529.74
88344 DEC: Sanitary Sewer Design	1,776,899	619,645		929,468.13
88345 DEC: Watershed and Stormwater Programs	464,785	21,975	19,760	482,961.98
88361 DEC: Transportation Services – Admin.	303,048	-		-
88363 – Traffic Capital Project	185,303	22,502		-
33,752.31				
88364 – Traffic Safety Program	483,210	7,136		
10,703.97				
88639 CEDA: Real Estate	62,708	35,507		
53,261.10				
90321 Non-Dept: Liability Claims	275,000	288,265		432,397.68
90411 Non-Dept: Debt Service	5,397,714	1,725,817		2,588,725.86
90591 Non-Dept: City-Wide Activities	600,000	400,000		600,000.00
Miscellaneous	3,439	888	327	1,332.03

<b>Subtotal Expenditures – O &amp; M</b>	<b>33,339,979</b>	<b>14,733,397</b>	<b>185,654</b>	<b>22,100,095.64</b>
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<b>Expenditures – CIP</b>	<b>Budget</b>	<b>Expended</b>	<b>Encumbered</b>	
92232 DEC CIP: Construction Services	65,622			-
92235 DEC CIP: Surveying	360,000			-
92242 DEC CIP: Streets & Structures	3,192	-		-
92290 DEC CIP: Sewer Storm Drains	238,359	235,855	2,469	353,782.29

<b>Subtotal Expenditures – CIP</b>	<b>667,173</b>	<b>235,855</b>	<b>2,469</b>	<b>353,782.29</b>
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<b>Carryforwards</b>				
92244 DEC CIP: Sanitary Sewer	34,638,649	4,194,745	6,923,643	6,292,118.00
<b>Total Expenditures</b>	<b>68,645,801</b>	<b>19,163,997</b>	<b>7,111,766</b>	<b>28,745,996</b>
<b>Ending Fund Balance</b>	<b>(8,107,187)</b>	<b>1344,393</b>		



**Recommendation #205:** The fund manager for the Sewer Service Fund should be in the Infrastructure and Operations Department / Public Works Agency.

**Recommendation #206:** The Engineering Design and Construction Department / CEDA and any other department funded by the Sewer Service Fund should be required to submit a budget request to the Infrastructure and Operations Department / Public Works Agency as part of the annual budget preparation process. The Department should review, comment, and critique these requests before submittal to the City's Budget Office.

**Recommendation #207:** The level of budgeted expenditures by the Engineering Design and Construction Department / CEDA should be reduced significantly to that level that can be substantiated by workload allocation, work programs, and time charges. The Agency should review and approve the workload allocation, work programs, and time charges.

**Recommendation #208:** Right-of-Way Management should not be budgeted in the Sanitary Sewer Fund. Right-of-Way Management should be budgeted in the General Fund.

#### **14. A NUMBER OF ADJUSTMENTS SHOULD BE MADE IN THE AGENCY OVERHEAD ALLOCATIONS.**

There are administrative costs incurred by the Agency in the management and administration of the Departments, Divisions, and Sections of the Agency. These Agency overhead charges comprise 5.26% of the Agency budget. This is indicative of lean administrative costs for the Agency. Only 5% of the Agency's authorized workforce is allocated as Agency-wide overhead.

However, the costs of Electrical Services Administration are also being treated as Agency-wide administrative overhead and allocated to Departments, Divisions, and Sections of the Agency. This cost amounts to approximately \$902,000 annually. This is an inappropriate allocation of overhead costs. These costs should not be an indirect cost or overhead. These costs should be a direct cost and not spread across the

Agency as an overhead allocation.

**Recommendation #209: The operating costs of Electrical Services Administration should not be treated as Agency-wide overhead cost allocation, but as a direct cost.**

**15. THE CITY SHOULD SEEK VOTER APPROVAL FOR A TAX OVERRIDE FOR MAINTENANCE OF THE CITY'S PARKS AND THE CITY'S STREET TREES.**

Despite the declining economy and state fiscal crisis, voters were remarkably open to additional spending and taxes in the past election. Local ballots included proposals to add, extend or modify 95 school bonds, 10 general bonds, 45 parcel taxes, 24 Utility taxes and 34 sales-transaction tax districts as well as a variety of business license and hotel tax fees. The overwhelming majority of school funding measures were approved. The outcome of non-school related measures were mixed although more passed than failed. Voters approved 17 new sales (transactions) tax districts and rejected the drive to eliminate an existing district in National City. With those approved in November, this brought the total number of local transactions tax districts in California to 118 with 76 of those imposed by individual cities. Voters also approved 7 new parcel tax measures.

As noted in the maintenance management chapter, the amount of funding available for maintenance, repair, and renewal of the City's parks, street and park trees is substantively less than required. This problem is not likely to be resolved given the problems with General Fund revenues.

The City should develop a proposal for approval of the voters for a tax override to fund the maintenance of parks, street and park trees for a tax override. This could consist of a parcel tax override or a sales tax override.

The City of Davis has utilized this approach several times and has obtained voter approval of several override measures (several have failed as well). This was based upon a simple advisory measure for a sales tax override. In March, 2000 the City of Woodland voters approved a ½ cent sales tax override that included four advisory measures advising that the new revenue be spent on a new police station, a new community/senior center, new softball and soccer facilities, and on city road rehabilitations. The measure was to sunset in June 2006. In November 2002, the City of West Sacramento voters approved a ½ cent sales tax override that included one advisory measure advising that the new revenue be spent on a new library, road repairs, after-school programs, senior services, broader access to child care, a skateboard park, an aquatic center, and more police and fire protection. The measure is to sunset in December 2012. These funds should not be used for construction of new facilities; it should only be used for the maintenance, repair, and renewal of existing facilities.

**Recommendation #210: The City should seek voter approval of a sales tax override or a parcel tax override to fund the maintenance and repair of parks, street and park trees, and streetlights.**

**Recommendation #211: The funds generated by the sales tax override, if approved by the voters, should not be used for construction of new facilities; it should only be used for the maintenance, repair, and renewal of existing facilities.**

**16. THE PROPERTY OWNERS SHOULD BE RESPONSIBLE FOR THE COSTS OF SIDEWALK REPLACEMENT.**

The California Streets and Highway Code states that the adjoining property owners are responsible for repairing the sidewalks on their property.

The Agency should perform an annual inspection of the sidewalks in residential areas on a rotating basis to identify tripping hazards and prioritize a list of areas to be repaired Based on severity. Property owners should then be notified to make the necessary repairs. State law requires that the City send two notices giving property owners the opportunity perform the work themselves. Alternatively, property owners could choose to have the City's contractor perform the work. Before property owners are billed for the repairs, a public hearing would be held to receive any protests regarding the quality, quantity and cost of the sidewalk improvements. Property owners can then choose to pay the City or have the cost included on their County property tax bill.

As part of this program, the Agency should develop and the City should adopt an ordinance that imposes a "duty" on the property owners for injuries to third parties as a result of the owner's failure to maintain the sidewalk.

**Recommendation #212: The City should adopt an ordinance that imposes a "duty" on the property owners for injuries to third parties as a result of the owner's failure to maintain the sidewalk.**

**Recommendation #213: The Agency should perform an annual inspection of the sidewalks in residential areas on a rotating basis to identify tripping hazards and prioritize a list of areas to be repaired based on severity. Property owners should then be notified to make the necessary repairs.**

#### **17. THE DRAINAGE SECTION SHOULD BE ESTABLISHED WITH THEIR OWN SEPARATE OPERATING BUDGET.**

At present, the labor, service and supply, and annual operating budget of the Drainage Section is consolidated with the Sanitary Sewer Section. This makes it difficult for the supervisors of the Stormwater Section to manage their costs, and difficult for manages to hold those supervisors accountable.

**Recommendation #214: The Drainage Section should be provided with its own separate operating budget, separate from the Sanitary Sewer Section.**

## 6. ORGANIZATIONAL STRUCTURE AND STAFFING

This section of the report analyzes the organizational structure and the levels of staffing required by the Agency.

### 1. THE AGENCY HAS A NUMBER OF STRENGTHS AND OPPORTUNITIES FOR IMPROVEMENT IN ITS ORGANIZATIONAL STRUCTURE AND STAFFING.

In evaluating the staffing levels for the Agency, the MCG utilized asset inventory data, where available, and developed an annual work program to determine the number of staff required to maintain service levels comparable to that of modern, progressive local governments. In instances in which asset inventory data was not available, the MCG utilized benchmark data developed from comparisons with other cities or based upon the analysis of other public works departments.

Overall, the authorized level of staffing in the Agency, as it existed as a result of mid-year budget adjustments, exceeds workload and service level requirements in some instances, meets requirements in others, and is insufficient to meet these requirements in other instances.

### 2. THE STAFFING OF THE STREETS AND SIDEWALKS SECTION SHOULD BE MAINTAINED AT EXISTING LEVELS.

The Streets and Sidewalks Section is authorized fifty-seven (57) positions. This includes the following positions:

- A Public Works Supervisor II;
- Three (3) Public Works Supervisor I's;
- Fourteen (14) Street Maintenance Leaders;
- Twenty-Four (24) Public Works Maintenance Workers;

- Eight (8) Heavy Equipment Operators;
- Three (3) Concrete Finishers;
- An Administrative Assistant I and an Office Assistant II;
- A Supervisory Civil Engineer; and
- A Fleet and Safety Coordinator.

The Streets and Sidewalks Section lacks a maintenance management system to report work output and crew hours by work activity. Given that limitation, the MCG employed a benchmark regarding the number of Streets and Sidewalks staff per centerline mile of street. That benchmark is 1 position for every 15 to 20 centerline miles of paved streets. There are fifty-seven staff assigned responsibility for the maintenance and repair of 806 miles of streets. This is a ratio of 1 position for every 14 miles of streets. The staffing level for the Streets and Sidewalks Section approximates that range.

However, some staffing adjustments are recommended. These recommended staffing adjustments are noted below.

- The Fleet and Safety Coordinator should be reassigned to the Equipment Services Division, and funded within that budget.
- The Supervising Civil Engineer position should be eliminated. This position provided minor engineering support for the Infrastructure and Operations Department. These services can readily be provided, as necessary, by the Design and Construction Services Department.

The cost impact of these recommendations is presented in the table below.

Annual Cost Decrease	
Eliminate the Supervisory Civil Engineer position through attrition.	\$162,300
<b>Total Operating Cost Decrease</b>	<b>\$162,300</b>

**Recommendation #215: The Fleet and Safety Coordinator within the Streets and Sidewalks Section should be reassigned to the Equipment Services Division, and funded within that budget.**

**Recommendation #216: The Supervising Civil Engineer position in the Infrastructure and Operations Department should be eliminated through attrition.**

**Recommendation #217: After the above staffing adjustments, the level of staffing within the Streets and Sidewalks Section should not be adjusted: the level of staffing is appropriate to the size of the street network.**

### **3. THE LEVEL OF STAFFING FOR THE TREE MAINTENANCE SECTION EXCEEDS WORKLOAD AND SERVICE LEVEL REQUIREMENTS.**

The Tree Maintenance Section is authorized nineteen positions. This includes the following:

- Three (3) Tree Supervisor I's and II's;
- Fourteen (14) Tree Trimmers, Tree Worker Drivers, and Tree High Climbers;
- One (1) Arboricultural Inspector;
- One (1) Administrative Assistant I.

A 2-person crew size should be standard crew size utilized for responding to service requests involving low limb and mature tree pruning. The Tree Maintenance Section should utilize 2-person crews with proper equipment (aerial lift with chip box, chipper and all appropriate hand tools and equipment). This crew should work on clearing obstructions to traffic devices, streetlights, lower priority customer requests and low-limb work when not responding to broken or hanging limbs. For all exceptionally large fallen limbs that cannot be handled by this two-person crew, a Tree Supervisor 1 should request appropriate labor and equipment.

Given the number of service requests, the MCG recommends that two 2-person crews be deployed to respond to low limb and mature tree pruning on an every workday basis,



and a third 2-person service request crew be deployed one to two days a week. The remainder of the available week, the third crew should be assigned responsibility for block-by-block trimming (proactive trimming, and not reacting to service requests). This would require the acquisition of a third aerial tower to enable all three of these crews to be appropriately equipped with proper equipment (aerial lift with chip box, chipper and all appropriate hand tools and equipment).

This would require a total of eight (8) staff for responding to service requests for low limb and mature tree pruning allowing for leave, training, and those instances when a 3-person crew will be required. A 4-person crew would be required for tree removals and a 1-person crew would be required for tree watering and the trimming of young trees. The 4-person crew and the 1-person crew would require a total of seven (7) staff allowing for leave, training, and those instances when a larger crew size could be required. This would require Tree Supervisors to work with these crews when necessary for leaves of absence. This should not occur frequently, but since there would only be five (5) crews, the supervisors should function more as leadworkers in these situations, and work with their crews.

Altogether, a total of fifteen (15) staff would be required. This includes Tree Supervisors, Tree Trimmer High Climbers, Tree Worker Drivers, and Tree Trimmers. At present, there are a total of sixteen (16) of these types of positions authorized (excluding the Tree Supervisor II). One (1) of these positions should be eliminated, through attrition. In addition, the amount of equipment assigned to the Tree Maintenance Section should be reduced. The cost impact of these recommendations is presented in the table below.

Recommendation	Annual Cost Reduction
The staffing of the Tree maintenance Section exceeds workload by one position.	\$90,600
Eliminate two (2) cranes, two (2) tool trucks, two (2) flatbed trucks, a crew cab light dump, a brush chipper, and a compact sedan.	\$92,000
<b>Total Cost Decrease</b>	<b>\$182,600</b>

**Recommendation #218: The staffing of the Tree Maintenance Section exceeds workload by one position. One position should be eliminated through attrition.**

**Recommendation #219: The amount of vehicular equipment within the Tree Maintenance Section should be reduced by two (2) cranes, two (2) tool trucks, two (2) flatbed trucks, a crew cab light dump, a brush chipper, and a compact sedan.**

#### **4. THE NUMBER OF AUTHORIZED POSITIONS FOR THE SANITARY SEWER SECTION EXCEEDS WORKLOAD AND SERVICE LEVEL REQUIREMENTS.**

The Sanitary Sewer Section is authorized forty-nine (49) positions. This includes the following positions:

- A Public Works Supervisor II;
- Three (3) Public Works Supervisor I's;
- Seventeen (17) Sewer Maintenance Leaders; and
- Twenty-eight (28) Sewer Maintenance Workers.

This staff is responsible for the maintenance and repair of the sanitary sewer collection system by performing work activities such as the following:

- Hand rodding mains;
- Power rodding mains;
- Hydroflushing mains;
- CCTV inspection of mains;
- Responding to complaints;
- Sewer main repair.

The MCG utilizes a benchmark for operating and maintenance staffing of a sanitary sewer collection system of 25 to 40 miles of main per employee. In Oakland, this would require twenty-six (26) to forty-two (42) employees. This is less than currently authorized for the Sanitary Sewer Section. With the resolution of the problems of matching crew sizes to tasks, this should not impact work output.

A total of eight (8) positions should be eliminated through attrition. The cost impact of the elimination of these eight (8) positions is presented in the table below.

Annual Cost Decrease	
The staffing of the Sanitary Sewer Section exceeds workload by eight positions	\$658,000
<b>Total Operating Cost Decrease</b>	<b>\$658,000</b>

**Recommendation #220: The staffing of the Sanitary Sewer Section exceeds workload by eight (8) positions. Eight (8) positions should be eliminated through attrition.**

**5. THE NUMBER OF AUTHORIZED POSITIONS FOR THE DRAINAGE SECTION EXCEEDS WORKLOAD AND SERVICE LEVEL REQUIREMENTS.**

The Drainage Section is authorized twenty-three (23) positions. This includes the following positions:

- A Public Works Supervisor II;
- Two (2) Public Works Supervisor I's;
- Eight (8) Street Maintenance Leaders; and
- Twelve (12) Public Works Maintenance Workers.

This staff is responsible for the maintenance of the City's stormwater collection system by performing the following types of work activities:

- Inspect catch basins;

- Clean catch basins;
- Clean cross culverts;
- Clean weirs in storm drainage ditches; and
- Clean watercourses such as the Cairo ditch to assure proper drainage.

It should be recognized that some of these twenty-three (23) staff are not directly allocated to maintenance of the stormwater collection system. For example:

- Two staff are allocated to the swing shift responding to complaints regarding illegal dumping or the same types of complaints as the Keep Oakland Clean and Beautiful Division.
- One staff at the time of the interview in August 2008 was “on loan” to the Keep Oakland Clean and Beautiful Division as a street sweeper operator.
- One staff is allocated to “yard support” including dispensing gloves, tools, loading silt collected from catch basins and water courses into debris boxes and transporting the material to the solid waste transfer station.

The asset inventory that these twenty-three staff (23) are responsible for maintaining is presented below.<sup>39</sup>

- 402 miles of stormwater pipe;
- 7,578 catch basins;
- 3,221 stormwater manholes;
- 476 cross culverts; and
- 14 channels.

The *Storm Drainage Master Plan* identified existing best management practices in place for the maintenance of the stormwater collection system. These practices were utilized in the evaluation of staffing requirements for the Drainage Section. The recommendations regarding staffing are presented below.

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<sup>39</sup> Storm Drainage Master Plan, CH2M HILL, March 2006

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- A total of eleven (11) staff would be required on a day-to-day basis to maintain the stormwater collection system. This excludes a supervisory position.
  - Catch basin cleaning / inspection would be provided on a cycle of once annually. In other words, every catch basin would be cleaned on an annual basis. The level of productivity – 20 catch basins cleaned on a daily basis – is at the low end of the range that the MCG would expect a 2-person crew to be capable in a workday. The delivery of this service would require 956 staff days or a little more than two crews each day dedicated to this work activity.
  - Catch basin cleaning / vactor would be provided to an estimated 10% of the catch basins. This would result from the catch basin cleaning / check manual work activity in which the crew identifies catch basins that contain sufficient silt to require cleaning by a vactor. The level of productivity – 4 catch basins cleaned on a daily basis – is at the low end of the range that the MCG would expect a 2-person crew to be capable in a workday. This is largely due to the travel requirements. The delivery of this service would require 478 staff days or almost one crew each day dedicated to this work activity.
  - Cleaning cross culverts would be provided on an annual cycle. In other words, all cross culverts would be cleaned once annually. The delivery of this service would require 238 staff days or 52% of a crew dedicated to this work activity each day
  - Water-course maintenance would be provided based upon the number of staff days allocated to this work activity in the Agency in its annual work program in 1981-82. No other data was available to project the workload demand. The provision of this level of service would require 462 staff days on an annual basis or two-thirds of a crew each day dedicated to this work activity.
  - Miscellaneous stormwater collection maintenance – activities not included in the previous work activities – would require an estimated 320 crew days annually. This is based upon a total of 15% of the annual workdays of the preceding work activities.

These recommendations are based upon an annual work program developed for the Drainage Section presented in the exhibit following this page.

## Exhibit 16

## Proposed Annual Work Program For the Drainage Section

Activity Name	Inventory Measure	Units	Per Inventory	Annual Frequency	AWQ	ADP	Crew Days	Crew Size	Staff Days
Catch Basin Cleaning / Check Manual	Units	9,558	Units	1.0	9,558.0	20.0	477.9	2	955.8
Catch Basin Cleaning - Vactor	Units	9,558	Units	0.1	956.0	4.0	239.0	2	478.0
Clean Cross Culverts	Units	476	Units	1.0	476.0	4.0	119.0	2	238.0
Water Course Maintenance	Person Hours	1,232	Person Hours	1.0	1,232.0	8.0	154.0	3	462.0
Misc. Stormwater Maintenance	Person Hours	2,561	Person Hours	1.0	2,560.6	8	320.1	1	320.1

AWQ = Annual Work Quantity

ADP = Average Daily Productivity

Altogether, the maintenance of the stormwater collection system would need eleven (11) staff excluding a supervisor. This is nine (9) staff less than currently authorized. The Public Works Supervisor II position and one Public Works Supervisor I position should be eliminated through attrition. One Public Works Supervisor I is sufficient to supervise these eleven (11) staff. The Public Works Supervisor I should report to the Public Works Supervisor II for the sanitary Sewer Section.

Eleven (11) positions should be eliminated through attrition. The annual cost impact of the elimination of these eleven positions is presented in the table below.

Annual Cost Decrease	
The level of staffing within the Drainage Section exceeds workload by nine (9) positions.	\$701,300
Eliminate a Public Works Supervisor II and Public Works Supervisor I position through attrition.	\$278,600
<b>Total Operating Cost Decrease</b>	<b>\$979,900</b>

**Recommendation #221: The level of staffing within the Drainage Section exceeds workload and service level requirements by nine (9) positions. Nine (9) positions should be eliminated through attrition.**

**Recommendation #222: Eliminate a Public Works Supervisor II and Public Works Supervisor I position through attrition.**

## **6. THE EXISTING LEVEL OF EQUIPMENT SERVICE TECHNICIAN STAFFING MEETS CURRENT WORKLOAD DEMANDS.**

In May 2003, a consulting firm completed a fleet management and operations study of the Equipment Services Division. The study included an evaluation of staffing levels.

The findings and conclusions regarding the level of staffing are presented below.

- “In order to make some high-level judgments of the amount of maintenance effort required to keep a fleet in good condition, each piece of equipment is equated to the average amount of maintenance effort that is required to keep an average sedan in good repair. The amount of effort is expressed as one vehicle equivalent. Each general class of vehicles is then assigned a vehicle equivalency

that represents the service effort required to maintain a vehicle in that class as a multiple of fleet sedans. For example, the street sweeper equates to eight vehicle equivalents meaning that it takes about eight times as much maintenance effort per year to maintain the average street sweeper as it does to maintain the average fleet sedan.”

- “This approach has been in use for years in the fleet industry. Under the old Bell System, AT & T and its operating companies used a similar approach for evaluating the maintenance requirements of fleets with wide variances in composition. Most recently, the United States Air Force developed a comprehensive table of equivalents in the 1980’s for use in helping to determine the relative maintenance requirements of different Air Force bases. Some of our clients have used similar approaches to help them determine the appropriate staffing levels for their various maintenance facilities. It should be noted that many of the large commercial fleet maintenance service providers to fleets such as Oakland’s use approaches similar to what is described above. The benefit of using vehicle equivalents is its relative simplicity, and the fact that diverse types of vehicles and equipment can be compared using a common standard.”
- “We have computed the Vehicle Equivalents (VE’s) as 3,579 for the vehicles and equipment being maintained by the Equipment Services Division. We expect an average fleet technician to maintain from 90 to 110 vehicle equivalencies, so that the 3,579 VE’s represent approximately 36 technicians worth of work. Not included in this computation are the paint and body shop technicians as most fleets use commercial shops to perform paint and body work. Our count of the Equipment Services Division budgeted technician positions is 42. We have excluded the 2 part-time Parking Attendants. In our opinion, the Equipment Parts Technicians should report to one of the first-line supervisors. ”
- “In recent conversations with the Equipment Services Division representatives, we have been made aware of a reduction of authorized positions. Given this directive, our recommendation would be to reduce the number of shop technicians from 42 to 35, close the body and paint shop, which would eliminate 4 positions, eliminate the 2 part-time parking attendants, retain all 4 parts technicians, reduce the supervision to 4, and combine the functions of Fleet Specialist and the Support Services Supervisor, which would eliminate one of these positions.”

The analysis conducted by the MCG of the current staffing requirements using vehicle equivalents indicates that there are approximately 3,600 vehicle equivalents. Given the age of the City’s fleet, the number of vehicle equivalents per technician should be at the



lower end of the range of 90 to 110 equivalents per technician. This would require 40 technicians, which is the current level of staffing.

However, this presumes that all of the technicians are productively engaged in the maintenance and repair of the City's fleet. This is problematic with the Equipment Services Section since four (4) Auto Equipment Service Workers are assigned to the Hall of Justice. The staff largely check fluids and perform small repairs such as changing burned out lights.

If the age of the fleet was comparable to other fleets, a higher vehicle equivalent per technician could be utilized; this would approximate 110 equivalents per technician. The staffing with a newer fleet would approximate thirty-three (33) technicians or seven less technicians than currently authorized. This potentially represents a reduction in annual operating costs of approximately \$660,000 annually.

The Division provides a service that is typically outsourced by other local governments: body repair and painting of vehicles. A previous analysis conducted of the Equipment Services Division in 2003 recommended the outsourcing of the work completed by the Body and Paint Shop. The comparative survey conducted by MCG as part of this audit found that all of the other cities that responded to the survey outsourced their body and paint shops. None of the technicians within the Body and Paint Shop met benchmarks for the amount of hours that should be charged to work orders. The work performed by the Body and Paint Shop should be outsourced and the staff eliminated through attrition.

The cost impact of this recommendation is presented in the table below.

Annual Cost Increase		Annual Cost Decrease	
Outsource body and paint work through attrition	\$200,000	Eliminate three (3) Equipment Body Repair Worker positions and an Automotive Equipment Painter position through attrition	\$423,300
<b>Total Operating Cost Increase</b>	<b>\$200,000</b>	<b>Total Operating Cost Decrease</b>	<b>\$423,300</b>

**Recommendation #223: Reductions in the level of technician staffing assigned to the Equipment Services Division should only be made if the number of equipment and if the age of the fleet is reduced through replacement of equipment that already exceeds replacement guidelines.**

**Recommendation #224: The work performed by the Body and Paint Shop should be outsourced and the staff allocated to the Shop eliminated through attrition.**

**7. THE NUMBER OF AUTHORIZED POSITIONS ALLOCATED TO THE ELECTRICAL SERVICES AND TRAFFIC MAINTENANCE DIVISION IS LESS THAN WORKLOAD AND SERVICE LEVEL REQUIREMENTS.**

The Electrical Services and Traffic Maintenance Division is authorized forty-eight (48) positions (excluding the Student Trainee). This includes the following:

- A Manager, Electrical Services;
- Two Administrative Assistant II's;
- A Program Analyst II;
- An Electrical Construction and Maintenance Planner;
- Two Electrical Supervisors;
- Twelve Electricians;
- Two Electrical Helpers;
- A Program Analyst II;
- Two Electrical Engineer III's;
- Two Electrical Leaders;
- Five Public Works Maintenance Workers;

- A Public Works Supervisor II and a Public Works Supervisor I;
- Eight Sign Maintenance Workers;
- Two Traffic Sign Makers; and
- Five Sign Painters.

The staff are responsible for a myriad of tasks including the following:

- Maintenance and repair of 35,445 streetlights, responding to 1,800 service requests annually, repairing approximately 1,800 streetlights annually, and replacement of approximately 100 streetlight poles annually;
- Maintenance and repair of 671 signalized intersections, repairing approximately 2,220 traffic signals each year, and replacing approximately 125 traffic signal poles annually;
- Receive and respond to approximately 10 new streetlight requests annually, and manage streetlight electrical undergrounding projects; and
- Maintenance and repair of pedestrian, bicycle and vehicular traffic signs, street name signs, street striping, and pavement markings.

The staffing within the Electrical Services and Traffic Maintenance Division should be decreased in some circumstances and increased in others. The specific recommendations regarding staffing are presented below.

**(1) The Electrical Construction And Maintenance Planner Position Should Be Eliminated Through Attrition.**

This position is responsible for job planning and scheduling for the Traffic Signal and Street Light staff. This includes maintaining the stock in the shop, ordering poles and lamps, ordering materials for construction projects, assigning underground service alerts, scheduling preventive maintenance for traffic signals, scheduling the group relamping of streetlights, etc. The two Electrical Supervisors should fulfill the

responsibility with support from the Administrative Assistant II. The cost impact of the elimination of this position is presented in the table below.

Annual Cost Decrease	
Eliminate an Electrical Construction and Maintenance Planner position through attrition	\$149,500
<b>Total Cost Decrease</b>	<b>\$149,500</b>

**Recommendation #225: The Electrical Construction and Maintenance Planner position in the Electrical Section should be eliminated through attrition.**

**(2) The Public Works Supervisor II Position In Traffic Maintenance Should Be Eliminated.**

This position supervises two positions: an Administrative Assistant II and a Public Works Supervisor I. The Public Works Supervisor I supervises all of the staff assigned to sign maintenance and repair, street striping, and pavement marking maintenance. The only role for the Public Works Supervisor II is to review service requests received from the call center, residents / businesses, and other City agencies, respond to service requests assuring materials are available, respond to e-mails and material received via interoffice mail, etc. There is insufficient supervisory workload to warrant this position. It should be eliminated. The cost impact of the elimination of this position is presented in the table below.

Annual Cost Decrease	
Eliminate a Public Works Supervisor II position through attrition	\$149,500
<b>Total Cost Decrease</b>	<b>\$149,500</b>

**Recommendation #226: The Public Works Supervisor II position in Traffic Maintenance should be eliminated through attrition.**

**(3) The Administrative Assistant II Position Assigned To Support Of The Public Works Supervisor II In Traffic Maintenance Should Be Eliminated Through Attrition.**

This position maintains a work order database in Microsoft Excel, receives and prints work orders from the Transportation Services Division / CEDA, answers the phones for Traffic Maintenance, orders office supplies, processes vehicle collision reports e.g., knockdowns, and provides general office support. Much of this work is or will be unnecessary since (1) Azteca Cityworks will meet the need for a database of work orders. (2) the Agency's Call Center receives most of the calls related to traffic maintenance, and (3) other aspects of the work performed by the position, such as receiving and printing work orders from the Transportation Services Division / CEDA could be assigned to the Public Works Supervisor II. The cost impact of the elimination of this position is presented in the table below.

Annual Cost Decrease	
Eliminate an Administrative Assistant II position through attrition	\$91,000
<b>Total Cost Decrease</b>	<b>\$91,000</b>

**Recommendation #227: The Administrative Assistant II position in Traffic Maintenance assigned to support the Public Works Supervisor II should be eliminated through attrition.**

**(4) The Two Limited Duration Electrician Positions Authorized For Streetlight Group Relamping Should Be Eliminated Through Attrition.**

The MCG utilizes a benchmark of 6,500 streetlights per signal technician. The City maintains and repairs approximately 35,445 streetlights. This would require six staff to maintain and repair these streetlights. There are, in fact, nine (9) positions: an Electrician Leader, six Electricians, and two Limited Duration Electricians. Six (6) positions should be sufficient for maintenance and repair of streetlights. The two limited duration Electrician positions authorized for streetlight group relamping should be

eliminated; the prevailing practice in cities is to respond to complaints received from the public. One position – an Electrician – should be transferred to the maintenance and repair of traffic signals. The streetlight maintenance and repair staff should only be assigned to the construction / installation of new streetlights as time permits; otherwise that service should be outsourced.

Group relamping of streetlights should be discontinued. This is an unusual practice not utilized by most cities. Most cities will periodically inspect arterial and collector streets for streetlight burnouts and replace as identified; residential streetlights are replaced as identified by residents. The cost impact of the elimination of these positions is presented in the table below.

Annual Cost Decrease	
Eliminate two Limited Duration Electrician positions through attrition	\$240,600
<b>Total Cost Decrease</b>	<b>\$240,600</b>

**Recommendation #228:** The two Limited Duration Electrician positions authorized for streetlight group relamping should be eliminated through attrition.

**Recommendation #229:** One position – an Electrician – should be transferred from maintenance and repair of streetlights to traffic signals.

**Recommendation #230:** The streetlight maintenance and repair staff should only be assigned to the construction / installation of new streetlights as time permits; otherwise that service should be outsourced.

**Recommendation #231:** The City should discontinue group relamping of streetlights.

**Recommendation #232:** The Electrical Services and Traffic Maintenance Division should periodically inspect streetlights on arterials and collectors for burnouts and replace as identified. Streetlight burnouts in residential streets should be replaced as reported by residents.

**(5) The Number Of Traffic Signal Maintenance Positions Should Be Increased By Seven (7) Positions.**

There are a total of nine positions currently assigned to traffic signal maintenance and repair, excluding the Electrical Supervisor. This existing complement of staff includes an Electrical Leader, six (6) Electricians, and two (2) Electrical Helpers. The staff is responsible for the maintenance and repair of 671 signalized intersections. The staff is providing little preventive maintenance of the City's traffic signals. Good maintenance is one of the keys to effective signal operation. A well-timed traffic signal system must be accompanied by effective maintenance if it is to provide continued high quality service to the traveling public. A basic level of maintenance is one item that is not easily ignored, since non-functional traffic signals are highly visible to the traveling public. Key components of an excellent maintenance program include adequate maintenance staffing for traffic signals with a recommended staffing level of 30 to 40 intersections per technician. (The National Transportation Operations Coalition developed this benchmark.) This would require not less than seventeen (17) Electricians and Electrical Helpers or eight (8) more positions than presently authorized. However, one (1) Electrician position should be reallocated from streetlight maintenance and repair to traffic signal maintenance and repair. The cost impact of the addition of these positions is presented in the table below.

Annual Cost Increase	
Authorize one (1) additional Electrical Leader, four (4) additional Electricians, and two (2) additional Electrical Helpers for traffic signal preventive maintenance	\$776,400

**Recommendation #233: Authorize one (1) additional Electrical Leader position, four (4) additional Electricians and two (2) additional Electrical Helper positions in the Electrical Section to enable the preventive maintenance of the City's traffic signals.**

**Recommendation #234: The traffic signal staff within the Electrical Section should not be diverted to construction of new signalized intersections; that work**

should be outsourced. The traffic signal staff within the Electrical Section should be focused on the maintenance and repair of the City's traffic signals.

**(6) The Number Of Sign Maintenance and Traffic Painting Positions Should Be Increased By Five (5) Positions.**

At present, the Electrical Section is authorized eighteen (18) positions for the maintenance of pedestrian, bicycle and vehicular traffic signs, street name signs, street striping, and pavement markings. The Section does not have an inventory of signs, striping, or pavement markings. The MCG utilizes a benchmark, in the absence of inventory data, of 1 sign and pavement marking / striping maintenance and repair position per 30 to 35 centerline miles of paved streets; the Electrical Maintenance Section is authorized one position for every 45 centerline miles of paved streets. The number of authorized positions should be increased by five (5) positions: a Traffic Painter and a Public Works Maintenance Worker, and three (3) Sign Maintenance Workers. The cost impact of the addition of these positions is presented in the table below.

Annual Cost Increase	
Authorize one (1) Traffic Painter, one (1) Public Works Maintenance Worker, and three (3) Sign Maintenance Workers to enhance the maintenance of the City's signs, striping, and pavement markings	\$444,600

**Recommendation #235: The number of sign maintenance and traffic painting positions should be increased by five (5) positions: a Traffic Painter and a Public Works Maintenance Worker, and three (3) Sign Maintenance Workers.**

**(7) A Vacant Program Analyst II Position Should Be Eliminated.**

The Electrical Projects section is authorized a Program Analyst II position. Positions assigned to this classification are responsible for performing program planning, research, analysis and development; writing grant proposals and submitting applications; implementing and monitoring programs; preparing reports and drafting



proposed programs; performing needs assessments; providing assistance to community organizations, district boards and citizen advisory bodies; and providing lead direction to assigned staff. This position should be eliminated. The responsibility for the provision of these services should be assigned to the supervisors and managers of the Division. The cost impact of the elimination of this position is presented in the table below.

Annual Cost Decrease	
Eliminate a vacant Program Analyst II position	\$123,000

**Recommendation #236: Eliminate a vacant Program Analyst II position.**

**8. THE NUMBER OF AUTHORIZED POSITIONS ALLOCATED TO MAINTENANCE AND REPAIR OF THE CITY'S BUILDINGS IS LESS THAN WORKLOAD AND SERVICE LEVEL REQUIREMENTS.**

The MCG worked with the staff of the Parks and Building Section and the Facilities Management Division to develop an inventory of the square footage of facilities maintained by these two sections.

**(1) Building Maintenance Should Be Authorized An Additional Four Positions.**

The square footage of buildings maintained by these two sections amounts to 2,311,107 square feet. This square footage is summarized in the table below.

Building Types	Square Footage
City Administration Buildings	762,146
Field Houses / Restrooms at Parks	24,233
Fire Stations	139,858
Fire Station - Utility Buildings	18,888
Human Services - Head Start	7,138
Human Services - Senior Centers	73,876
Libraries	178,401
Museums / Cultural Arts	289,906
OPR Buildings	32,132
OPR Community Centers	124,573
OPR Recreation Centers	161,788
OPR Aquatics	35,893
OPR Utility Buildings	871
Police Buildings	276,127
Public Works Buildings	185,277

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<b>TOTAL</b>	<b>2,311,107</b>
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This excludes buildings that the Agency does not perform routine, ongoing maintenance such as the parking garages, City Stables, the Lincoln-Chinese Community Council community center, the Montclair golf clubhouse, the Chabot golf maintenance buildings, the H.J. Kaiser Convention Center, the Dunsmuir House, etc.

The *International Facility Management Association* conducts operations and maintenance surveys periodically, most recently in 2005. This survey was completed by more than 650 members of the Association comprising city and county governments, educational institutions, the federal government, state governments, insurance companies, electronics and information system companies, etc. The overall building maintenance staffing amounted to a ratio of one skilled or semi-skilled technician per 47,000 rentable square foot. This indicates that the City would need approximately forty-nine (49) skilled and semi-skilled positions to maintain the City's buildings (excluding supervisory staff).

The actual amount of staffing deployed to maintain the buildings amounts to forty-five positions: thirty-three (33) positions within the Parks and Building Section and twelve positions (12) within the Facilities Management Division. This excludes supervisors and managers. The deployment of these positions in the Parks and Building Section is presented in the paragraphs below.

- Five (5) Carpenters and two (2) Construction and Maintenance Mechanics are allocated to a variety of carpentry tasks including (1) construction, repair, or alteration of wooden structures, (2) building cabinets, counters, and shelves, (3) installation of metal studs, fixtures, special cabinetry, window glass, screens, heavy timber structures, and sheetrock, (4) installation and repair of bathroom partitions, cabinets, counters, shelves, floors, plastic laminates, ceramic tiles, acoustic ceilings, automatic door operators, doors, door closers, and rain gutters,

- (5) installation of flooring, (6) building of concrete forms, (7) mixing and pouring concrete, (8) installation repair, and rekeying of locks and hardware, and (9) inspection and patching of roofing.
- Eight (8) Painters paint walls and surfaces, abate graffiti, paint parking lot striping, clean, wash and prepare surfaces for painting, etc.
  - Five (5) Maintenance Mechanics (1) abate graffiti using a spray rig, (2) conduct safety inspections of tot lots, (3) weld, (4) install and repair signs, masonry, playground hardware, fences, gates, benches, bleacher seats, and basketball backstops and glass, (5) mix, pour, and finish concrete and (6) build wooden signs.
  - An Electrician Leader, two (2) Electricians, a Maintenance Mechanic, and a Construction and Maintenance Mechanic are responsible for (1) testing, troubleshooting, and repairing electrical circuits and equipment, (2) installing, maintaining, repairing, and troubleshooting electrical equipment such as fire alarm detection systems, motors, pumps, distribution panels, switch gear systems, transformers, electrical circuits of various types, conduits and pull boxes, (3) modifying and repairing electrical systems, and (4) locating and correcting short circuits with the use of test equipment.
  - Three (3) Plumbers, a Carpenter, four (4) Construction and Maintenance Mechanics and a Maintenance Mechanic are allocated to plumbing maintenance and repair including (1) inspecting, installing, maintaining, and repairing a wide variety of plumbing equipment, including water and wastewater fixtures and fittings, (2) troubleshooting plumbing systems, (3) estimating labor, equipment and materials required to complete specified assignments, (4) ordering material and supplies, (5) modifying and installing plumbing systems for minor remodeling projects, (6) installing water service and wastewater collection piping, (7) clearing obstructions and flushing pipes (8); tapping into laterals and main water and sewer lines (9) installing, maintaining and repairing hot water and coolant lines, fittings and fixtures for heating and cooling systems (10) installing, replacing and repairing valves, faucets and other fixtures, and (11) cutting and threading pipe.

The Parks and Building section allocates thirty-three (33) staff to building maintenance excluding supervisors. There are four (4) Construction and Maintenance Supervisors and a Facilities Complex Manager.

The Facilities Management Division allocates twelve (12) staff to building maintenance excluding supervisors. The twelve staff includes eleven (11) station engineers and a Maintenance Mechanic. Three (3) Chief Stationary Engineers supervise the staff.

The number of positions allocated for building maintenance should be increased by four (4) positions.

The cost impact of the addition of these positions is presented in the table below.

Annual Cost Increase	
Increase staffing for building maintenance and repair by four positions	\$481,200
<b>Total Operating Cost Increase</b>	<b>\$481,200</b>

In the near-term, the City needs to focus on altering the allocation of positions among the building trades. Eight (8) of the thirty (30) skilled trades positions (Stationary Engineers, Carpenters, Painters, Electrician Leader, Electrician, and Plumber) or 27% assigned to building maintenance are Painters. Given the significant challenges faced by the City in its electrical systems, plumbing systems, this mix needs to be changed. The number of Painter positions should be reduced, while the number of electrical and plumbing positions should be increased. It is of little value if the City's buildings are painted, but its electrical and plumbing systems are failing. The table below presents the existing allocation of positions and recommends an allocation.

Building Trade	Existing Number of Positions	Recommended Number of Positions
Painter	8	3
Carpenter	5	5
Stationary Engineer	11	11
Electrician / Electrician Leader	3	6
Plumber	3	6
Construction and Maintenance Mechanic / Maintenance Mechanic	15	15
<b>Total</b>	<b>45</b>	<b>45</b>

**Recommendation #237: Increase the skilled positions allocated to building maintenance by four (4) positions.**

**Recommendation #238: The Keep Oakland Clean and Beautiful Division should be responsible for graffiti abatement in or outside of parks.**

**Recommendation #239: In the next several years, as attrition occurs, the Agency should upgrade the skill mix for building maintenance to include fewer Painters, and more Electricians and Plumbers.**

**(2) The Number of Authorized Custodial Staff Exceeds Workload and Service Level Requirements by Si Positions.**

**x**

The Facilities Management Division is authorized 66.58 full-time equivalent custodial positions excluding Custodial Services Supervisor I's, and Custodian Supervisors.

To evaluate staffing requirements, the MCG utilized survey data from the *International Facility Management Association*. This survey was completed by more than 650 members of the Association comprising city and county governments, educational institutions, the federal government, state governments, insurance companies, electronics and information system companies, etc. The median square footage per custodian was 22,958.

The Facility Management Division is responsible for the cleaning of approximately 1,256,000 square feet of office space, community centers, libraries, park restrooms, etc. With that square footage, a total of fifty-five (55) custodians would be required, which is 11.58 fewer custodians than currently authorized. However, there are a number of special assignments for custodians that detract from typical duties. These special assignments are presented below.

- **Hearing Room and Council Chambers Set-Up** Custodians are responsible for preparing each of the Four Hearing Rooms and the Council Chambers for City

meetings On average, 90 meetings per month are scheduled in all of the Hearing Rooms from 8:30 am-12:00 midnight. There are two (2) custodians responsible for all of the set-up duties in the Hearing Rooms and Council Chambers.

- **Frank H. Ogawa Plaza.** There are three (3) custodians performing cleaning in the Frank H. Ogawa Plaza. This includes pressure washing, scrubbing pavers, cleaning seating areas, bus stops, fountain, the amphitheater Plaza perimeter, and gazebos, removing trash and recycling, cleaning garbage cans and fixtures, cleaning trash and recycling areas in Dalziel, Lionel Wilson and City Hall, and cleaning the City Hall Garage used by City Attorney, City Administrator and Mayor and the Dalziel Loading dock.
- **Miscellaneous Set-Up.** This includes set-ups for press conferences and plaza events. This requires an estimated 25 to 40 hours per month.

Given these other special assignments, a total of six (6) custodian positions should be eliminated. This level of staffing should be supervised with five (5) custodial supervisors, which would result in a span of control of ten (10) custodians.

The cost impact of this adjustment is presented in the table below.

Annual Cost Decrease	
Custodial staffing exceeds workload by six positions	\$388,600
<b>Total Operating Cost Decrease</b>	<b>\$388,600</b>

**Recommendation #240: Custodial staffing exceeds workload and service level requirements by six (6) positions. Six (6) positions should be eliminated through attrition.**

### **(3) Architectural Services Workload Exceeds Workload By Four Positions.**

The Facilities Management Division is authorized six (6) staff for architectural design and construction management. This unit was authorized four (4) Architectural Associates, one (1) Electrical Engineer II, and one (1) Assistant City Architect. These staff are responsible for in-house design and project management for the City's buildings from "cradle to grave" including feasibility studies, planning and budgeting, designing, bidding and contractor selection, and construction management. This staff is

also responsible for providing technical support in the maintenance of the City's facilities, preparing cost estimates for capital improvement project proposals for the budget, and managing tenant improvements for City buildings.

The staff duplicates other architectural staff in the Community and Economic Development Agency.

The extent of projects managed by these six (6) staff is generally small in project scope and budget. These included building repairs, roof projects, firehouse floors, mechanical system upgrades, electrical system upgrades, etc, with project budgets ranging from \$32,000 to \$980,000 with a median project budget for the funded projects of \$61,800. The sum of the funded projects amounted to \$3,462,000 in March 2008, while construction costs were estimated at \$2,686,000. These represented projects that were funded beginning in fiscal year 2005-06 through 2007-08. In a few cases, the design of these projects had been completed, and the construction contracts awarded. In most other instances, the projects had not started or the feasibility study had been completed, but not designed.

These projects typically require more than one fiscal year to design, award bid for construction, and construct. This is clearly indicated by the year that these projects were funded: most were funded in fiscal years 2005-07. These projects are sufficient to warrant two (2) staff over a two-year period.

The number of architectural staff allocated to architectural design and construction management should be reduced by four (4) positions. The cost impact of this recommendation is presented in the table below.

Annual Cost Decrease	
Architectural service workload exceeds staffing by four positions	\$565,500
<b>Total Operating Cost Decrease</b>	<b>\$565,500</b>

**Recommendation #241: Architectural service workload and service level requirements exceed staffing by four positions. Four positions should be eliminated through attrition.**

**(4) The Custodians Allocated to Maintenance of the City's Pools Should be Classified as Pool Technicians.**

The Facilities Management Division is authorized two permanent part-time Custodians that are responsible for pool maintenance including pH balancing, vacuuming out debris, etc. The two staff are certified pool technicians. Should either incumbent resign, the City will not be able to replace their skills with a Custodian. It requires training and certification. Public pools are inspected by the County Health Department. Failure to properly maintain these pools can result in their closure.

**Recommendation #242: The two permanent part-time Custodians assigned responsibility for pool maintenance should be reclassified as Pool Technicians.**

**9. THE MIX OF FULL-TIME AND PART-TIME PARKS MAINTENANCE STAFFING SHOULD BE ADJUSTED.**

In analyzing staffing for park maintenance, the MCG evaluated the total level of staffing, the proportion of full-time and part-time staffing, and the use of outsourcing for small park and landscaped facilities.

**(1) The Existing Level of Staffing For Park Maintenance Is Sufficient To Deliver A Good Level of Service.**



The Parks Maintenance Section is authorized 77.45 full-time equivalent positions for park and landscape maintenance. The allocation of these positions by classification title is presented below.

- A Park Supervisor II;
- Three (3) Park Supervisor I's and a Parkland Resources Supervisor;
- A Program Manager;
- Six (6) Park Equipment Operators;
- Twenty-seven (27) Gardener Crew Leaders;
- One (1) Greenskeeper;
- Twenty-one (21) Gardener II's;
- Three (3) Irrigation Specialists;
- Fourteen and one-half (14.45) full-time equivalent Park Attendants.

This staff is allocated to three geographical areas and the open space areas in East Oakland. The three geographical areas are broken into hubs with a park maintenance crew assigned to each hub. The geographical areas and hubs are presented below.

- The north Oakland geographical area consists of the following hubs: Bushrod, Carmen Flores, Dimond, F.M. Smith, Golden Gate, Manzanita, Montclair, Mosswood, and Rose garden.
- The west Oakland geographical area consists of the following hubs: Raimondi, Veteran's Memorial, the deFremery, Frank Ogawa Plaza, Jefferson, Lakeside Park-Lake Merritt Perimeter, Lakeside Park-Nursery, Lakeside Park-Snow Park, Lincoln Recreation Center, Lowell Park, and Poplar.
- The east Oakland Hub consists of the following hubs: Arroyo Viejo, Brookdale, Brookfield, Dunsmuir, Rainbow, Redwood Heights, San Antonio, Tassafaronga, and Verdes Center.

There are, in addition, 6.4 full-time equivalent staff authorized for the Office of Parks and Recreation for sports field preparation and maintenance. In addition, there are

approximately two (2) full-time Custodians and two temporary part-time Custodians assigned to bathroom maintenance and cleaning in parks. This is equivalent to 2.64 full-time equivalent custodians.

Altogether, the Parks Maintenance Section maintains approximately 700 acres of developed and irrigated park and landscaped area that is maintained by the staff assigned to the hubs.

In evaluating staffing for park maintenance, the project team used staffing benchmarks that have historically been used by MCG for the past twenty years in evaluating staffing for park maintenance that relate the number of developed acres per maintenance worker. The table that follows provides the standard definition for these service levels.

Service Level	Service Level Definition and Required Maintenance Staffing
"A"	<p>State-of-the-art maintenance applied to a high quality, diverse landscape. Turf is lush, dark green, free from weeds and cut to a precise level. Plants and trees are pruned, trimmed and shaped to ornamental beauty.</p> <p>Requires one park maintenance worker per 4 to 6 developed park acres.</p>
"B"	<p>A high level of maintenance associated with well-developed park areas with reasonably high visitation. Major difference with Service Level "A" is turf is not cut to precise level and plants and trees are not pruned and trimmed at the same frequency.</p> <p>Requires one park maintenance worker per 6 to 10 developed park acres.</p>
"C"	<p>A moderate level of maintenance associated with locations of moderate to low levels of development and visitation.</p> <p>Requires one park maintenance worker per 10 to 15 developed park acres.</p>

Other professional associations have used much the same approach. For example, The *Association of Higher Education Facilities Officers* noted in Facilities Manager in September/October 2000.

“For many campus facilities management departments, staffing levels are an issue in whether the environment is managed with a short-term versus long-term mentality. Workers can provide different levels of maintenance quality depending on how much acreage is in each worker's area of responsibility. For a world-class result, such as a formal garden, one person can maintain about half an acre. It takes one person to maintain up to five acres of an ornamental, well-manicured landscape with a few flaws. That person can maintain up to ten acres of a well-maintained, park-like environment with, again, some flaws. When the space reaches 15 acres, one worker can only provide moderate maintenance for a park-like look that has significant flaws. At 20 acres, one person no longer can provide a quality result; maintenance will be flawed and the landscape will decline in quality (these calculations are for areas other than buildings, athletic fields, large parking lots or woodlands, with ‘park-like’ involving trees and turf with limited ornamental horticulture).”

The Association of Higher Education Facilities Officers is an international association dedicated to maintaining, protecting, and promoting the quality of educational facilities. It serves and assists facilities officers and physical plant administrators in colleges, universities, and other educational institutions throughout the United States, Canada, Mexico, and other countries worldwide.

The level of staffing allocated for park maintenance in Oakland is adequate to deliver a “B” level of service.

- Overall, there are approximately 700 acres of developed parks and landscaped areas.
- There are 80.49 park maintenance staff available to maintain these facilities. This includes the Park Equipment Operator's, Gardener Crew Leaders, Greenskeepers, Gardener II's, Irrigation Specialists, and Park Attendants. This includes the OPR staff and the Custodians allocated to park restroom maintenance. It excludes the administrative, supervisory and management staff.
- This is equivalent to a little less than 8.7 acres for each park maintenance staff.

With this level of staffing, the Park Maintenance Section should be clearly capable of delivering a “B” level of service.

**Recommendation #243: The total number of staff allocated to park and landscape**

**maintenance is sufficient to deliver a good level of service. The level of staffing for park and landscape maintenance should be maintained.**

**(2) The Proportion of Part-Time to Full-Time Staff Should Be Adjusted.**

The ratio of full-time Park Equipment Operators, Gardener Crew Leaders, Greenskeepers, Gardener II's, and Irrigation Specialists to part-time Park Attendants is 4 to 1: that is 4.0 full-time equivalent park maintenance staff for every 1 full-time equivalent part-time staff.

The use of the full-time staff and part-time staff should recognize the variety of tasks that are preformed in the maintenance of parks and landscaped facilities. Park maintenance tasks vary broadly in terms of skills needed to accomplish tasks. For example, tasks such as litter control, waste receptacle relining, and restroom cleaning require a lesser skill and experience level than more complex tasks such as ball field rebuilding, turf management, and irrigation system repair. This differentiation in tasks and skills needs raises the issue of whether or not skilled park maintenance workers are needed to accomplish all components of the work program. Additionally, park maintenance workload levels vary between growing and dormant seasons. Oakland's "growing" season is about 32 weeks, or slightly less than 62% of the full year. Seasonal variations also need to be considered in evaluating park maintenance staffing adequacy.

To provide park maintenance services, a 2 to 1 ratio of full-time to part-time staff should be utilized (in terms of full-time equivalent staff). The analysis by the MCG indicates that this ratio is consistent with the skills required to handle park maintenance tasks and provide the appropriate balance between highly skilled and lower skilled maintenance

staff that reflects basic maintenance task composition. This is based on the assumption that full-time staff should be staffed at levels equivalent with workload requiring moderate or higher level skills and part-time staff should be staffed at levels consistent with workload associated with lower level skill requirements.

The types of tasks that part-time staff could perform include litter control, trash receptacle emptying, weed control, mechanical edging, push mower mowing, restroom maintenance, etc.

Achieving the 2-to-1 ratio would require an adjustment in the number of full-time staff and in the number of part-time staff. The number of full-time staff would need to be decreased by ten (10) positions, while the number of part-time staff would need to increase by ten (10) positions. The cost impact of this adjustment is presented in the table below.

Annual Cost Increase		Annual Cost Decrease	
Authorize ten (10) additional Park Attendant – part-time positions	\$385,700	Eliminate ten (10) Gardener II positions through attrition	\$787,900
<b>Total Operating Cost Increase</b>	<b>\$385,700</b>	<b>Total Operating Cost Decrease</b>	<b>\$787,900</b>

**Recommendation #244: Eliminate ten (10) Gardener II positions through attrition, to be replaced with Park Attendant – Part-Time positions.**

**Recommendation #245: Authorize ten (10) additional Park Attendant – Part-Time positions.**

### **(3) Eliminate the Project Manager Position.**

The Parks and Buildings Division is authorized a Project Manager position. The responsibilities of this position are presented below.

- Allocates 75% to 80% of his time to the management of volunteer efforts for parks including working with community volunteer organizations, developing written scopes of work for each volunteer activity that defines the tasks,

coordinating the delivery of tools and equipment, and assuring adequate supervision.

- Coordinates the design of park capital improvements with neighborhoods, coordinating neighborhood meetings, coordinating the development of “wish lists” by the neighborhoods for park improvements, etc.
- Represents the Division with Service Delivery Districts as it pertains to volunteers
- Represents the Division with the Oakland Parks Coalition

The extent of volunteer coordination within the Agency is fragmented among a number of divisions. This chapter proposes, in a later section, that the responsibility for volunteer coordination be centralized.

The amount of staff allocated to volunteer coordination exceeds the number of volunteer events and the workload associated with volunteer management. The Project Manager position should be eliminated through attrition. The cost impact of this recommendation is presented in the table below.

Annual Cost Decrease	
Eliminate a Project Manager position in the Parks and Building Division through attrition	\$185,500
<b>Total Operating Cost Decrease</b>	<b>\$185,500</b>

**Recommendation #246: Eliminate the Project Manager position in the Parks and Building Division through attrition.**

**(4) The Parks Maintenance Section Should Be Authorized Four (4) Positions To Function As A Construction Crew.**

At the present time, the Building Section, Parks and Buildings Division provides construction services for the Parks Maintenance Section. This includes such tasks as repairing a chain link fence and gate at a skateboard park, installing benches in a park, installing picnic tables and barbecues, etc.

The MCG has recommended the consolidation of the building maintenance functions within the Facilities Maintenance Division. This recommendation would eliminate the construction support for the Park Maintenance Section. The repair and replacement of park assets is an essential function that needs to be performed by a construction crew in the Park Maintenance Section. This need reflects the age of these assets, the use of these assets, and non-existent level of capital renewal and replacement funding provided for City's parks. Additionally, park maintenance crews assigned to hubs should not be pulled off their routes to perform these tasks as that would generate problems in the ability to maintain park service levels.

The cost of the addition of these four positions is presented in the table below.

Annual Cost Increase	
Authorize four positions as a park construction and repair crew.	\$268,600
<b>Total Operating Cost Increase</b>	<b>\$268,600</b>

**Recommendation #247: Four (4) positions should be authorized for the Park Maintenance Section as a park construction and repair crew.**

**(5) The Responsibility for Sports Field Maintenance and Preparation Should Be Reassigned from the Office of Parks and Recreation to the Agency.**

The Office of Parks and Recreation is allocated \$364,520 in LLAD funds for ballfield maintenance. This funds one (1) Gardener Crew Leader and 5.4 permanent part-time and part-time Park Attendants. This funding and these staff are responsible for maintenance and preparation of ballfields. The tasks that these staff performs include game preparation for baseball fields, and regular maintenance around the ballfields. There are a total of forty (40) baseball fields maintained and prepared by the Office of Parks and Recreation. However, the Park Maintenance Section of the Agency is also responsible for irrigation repair; fencing repair; turf mowing, fertilizing, and aerifying; turf

over seeding; turf top dressing; re-sodding; infield grading and scraping; litter pickup of the outfield; weeding of the outfield; emptying of litter containers; and management of restroom maintenance.

The responsibility for baseball field maintenance and preparation should be reassigned from the Office of Parks and Recreation to the Park Maintenance Section of the Agency. The Section is already responsible for the maintenance of all of the other sports fields such as soccer fields. The Section is already responsible for the maintenance of the grounds surrounding the baseball fields. The existing assignment results in duplication with different staff from the Office of Parks and Recreation and the Park Maintenance Section of the Agency traveling to the same facilities. In addition, the Office of Parks and Recreation is authorized 6.4 full-time equivalent staff for this purpose or the equivalent of a little more than 8% of the staff authorized for the Park Maintenance Section of the Agency to maintain the City's entire park system.

The Park Maintenance Section of the Agency can more efficiently deploy and utilize the staff assigned for baseball field preparation.

The reassignment of these ballfield maintenance and preparation staff from the Office of Parks and Recreation to the Park Maintenance Section of the Agency will not require that the Agency take over responsibility for scheduling these ballfields. Other cities, such as Long Beach, assign the responsibility for ballfield maintenance and preparation to park maintenance as well; this assignment merely requires the coordination of ballfield maintenance and preparation between the Office of Parks and Recreation and the Park Maintenance Section of the Agency.



**Recommendation #248:** The 6.4 staff allocated to the Office of Parks and Recreation should be reallocated to the Park Maintenance Section of the Agency including the LLAD funding of \$364,520.

**Recommendation #249:** The Park Maintenance Section of the Agency and the Office of Parks and Recreation should develop and execute a service level agreement for baseball field preparation and maintenance.

**(6) The Responsibility For Cleaning of Stand-Alone Park Restrooms Should Be Reassigned From the Facilities Services Division to the Park Maintenance Section.**

At the present time, the Facilities Services Division allocates two (2) full-time custodians for the cleaning of standalone restrooms in parks. There are also two (2) temporary part-time custodians responsible for the cleaning of standalone restrooms in parks on the weekends.

The MCG has consistently found that the responsibility for cleaning of restrooms is assigned to park maintenance and not to custodial maintenance. This is done to reduce fragmentation of responsibility between different organizational units, so that the park maintenance manager can be held accountable for all aspects of park maintenance.

The two (2) full-time custodians and the two (2) temporary part-time custodians responsible for the cleaning of standalone restrooms in parks on the weekends should be transferred to the Park Maintenance Section. These positions should be reclassified as Gardener II's, through attrition. The responsibility for cleaning of standalone park restrooms should be assigned to the park maintenance crews assigned to the hubs. The cost of reclassifying these 2.64 full-time equivalent Custodians to Gardener II is presented in the table below.

Annual Cost Increase	
Reclassify two full-time Custodians and two temporary part-time Custodians to	\$37,000

Gardener II	
<b>Total Operating Cost Increase</b>	<b>\$37,000</b>

**Recommendation #250:** The two (2) full-time custodians assigned to route 4 and the two (2) temporary part-time custodians responsible for the cleaning of standalone restrooms in parks on the weekends should be transferred to the Park Maintenance Section.

**Recommendation #251:** These custodial positions should be reclassified as Gardener II's, through attrition.

**Recommendation #252:** The responsibility for cleaning of stand-alone park restrooms should be assigned to the park maintenance crews assigned to the hubs.

**(7) An Additional Park Supervisor I Position Should Be Authorized.**

At the present time, the Park Maintenance Section is authorized three (3) Park Supervisor I's. These three Park Supervisor I's are responsible for the supervision of twenty-seven (27) Gardener Crew Leaders. The MCG has recommended that the workload of these Park Supervisor I's be expanded to include volunteer management, park condition assessments, and the like. This supervisory workload exceeds the capacity of the existing three Park Supervisor I's. A fourth Park Supervisor I position should be authorized. The cost impact of this recommendation is presented below.

Annual Cost Increase	
Authorize an additional Park Supervisor I position	\$129,100
<b>Total Operating Cost Increase</b>	<b>\$129,100</b>

**Recommendation #253:** An additional Park Supervisor I position should be authorized.

**10. THE NUMBER OF AUTHORIZED POSITIONS WITHIN THE KEEP OAKLAND CLEAN AND BEAUTIFUL DIVISION EXCEEDS WORKLOAD AND SERVICE LEVEL REQUIREMENTS.**

This section of the chapter presents an analysis of the staffing requirements of the Keep Oakland Clean and Beautiful Division including street sweeping, illegal dumping, median maintenance, graffiti abatement, etc.

**(1) The Number of Authorized Staff For Street Sweeping Exceeds Workload and Service Level Requirements.**

The Keep Oakland Clean and Beautiful Division consists of twenty-eight positions for street sweeping. This includes the following positions:

- A Public Works Supervisor II;
- Two (2) Public Works Supervisor I's;
- A Street Maintenance Leader;
- Four (4) Public Works Maintenance Workers; and
- Twenty (20) Street Sweeper Operators.

This staff is responsible for sweeping arterial, collector, and residential streets. The downtown area, major thoroughfares, and commercial areas are swept five to seven times a week with each side of the street being swept on alternate days (in essence, both sides of the street are swept two and one-half to three and one-half times a week). Residential streets are swept with varying frequency ranging from once a week to once a month depending on the amount of litter.

The centerline miles within the City are presented in the table below.<sup>40</sup>

Type of Street	Number of Centerline Miles	Number of Curb Miles
Arterial	177.3	608.6
Collector	120.53	243.2
Residential / Local	507.63	915.2
<b>TOTAL</b>	<b>805.46</b>	<b>1,767.0</b>

<sup>40</sup> Citywide pavement Management Program, Bureau Veritas, April 2007

According to the GIS curb layer, there are 1,767 curb miles. The number of curb miles was allocated based upon the proportion of centerline miles by type of street. The MCG determined the curb miles swept per week by multiplying the level of service for the different types of streets times the number of curb miles. This calculation indicates that the Division needs nineteen (19) Street Sweeper Operators, after providing for a leave factor. One additional Street Sweeper Operator is utilized to transport street sweeper material collected by the street sweepers to the transfer station. The staffing matches workload for Street Sweeper Operators.

However, the Section also is allocated five (5) staff that drives in front of the street sweepers to remove heavy debris, sweep handicap ramps, etc. This is an atypical service that the MCG has never encountered in another city in the United States. This is not a service that the Division should provide; the Street Sweeper Operators should coordinate the removal of these objects with their Public Works Supervisor I on as needed basis. These five (5) positions should be eliminated.

The cost impact of this recommendation is presented in the table below.

Annual Cost Decrease	
Street sweeping staffing exceeds workload by five positions.	\$410,900
<b>Total Operating Cost Decrease</b>	<b>\$410,900</b>

**Recommendation #254: Street sweeping staffing exceeds workload and service level requirements by five (5) positions. Five (5) positions should be eliminated through attrition.**

- (2) Street Sweeper Operators Should Be Assigned Responsibility for Light Maintenance of Street Sweepers.**

At the present time, the Equipment Services Division provides all of the maintenance and repair of street sweepers. The street sweepers are in the Equipment Services Division shops every workday for light maintenance of the street sweepers.

This is an unusual practice. Other cities assign responsibility to their street sweeper operators to regularly grease all parts requiring lubrication and checks tires, battery, radiator and engine; check and refill, as necessary, gas, oil, air, water and battery water in the street sweeper; make minor mechanical adjustments to brooms, guards, and conveyors; change gutter brooms and main brooms; maintain the pickup head; and to make minor repairs to equipment.

In fact, the City's classification description for Street Sweeper Operator includes the ability to maintain and perform minor repairs on equipment.

**Recommendation #255: The Street Sweeper Operators should be assigned responsibility for minor maintenance and repairs of street sweepers including greasing, checking and refilling fluids, making minor mechanical adjustments, changing gutter brooms and main brooms, and maintaining the pickup head, etc.**

**(3) Electrical Painting Workload Is Misallocated.**

The Keep Oakland Clean and Beautiful Division is authorized three (3) Electrical Painter positions. These positions are responsible for the following functions:

- Complete painting projects for new construction such as streetlights, traffic signals cabinets, traffic signal poles, etc.
- The staff function as 1-person crews, except for large projects in which these staff will function as a single crew.

The responsibility for painting streetlights, traffic signals cabinets, traffic signal poles, etc. should be assigned to the Electrical Services and Traffic Maintenance Division. The

Division would have sufficient staff to fulfill this function if the staffing recommendations of the MCG for traffic signal maintenance staffing levels are implemented.

The cost impact of this recommendation is presented in the table below.

Annual Cost Decrease	
Eliminate three (3) Electrical Painter positions through attrition.	\$329,500
<b>Total Operating Cost Decrease</b>	<b>\$329,500</b>

**Recommendation #256: Electrical painting workload is misallocated and exceeds workload by three positions. Three positions should be eliminated through attrition.**

**(4) Vegetation Control Staffing Exceeds Workload and Staffing and Service Level Requirements.**

At the present time, the Division dedicates twelve (12) staff to the cutting of weeds and vegetation along pathways, in sidewalks and gutters, in medians, in vacant City lots, etc. This includes three (3) Street Maintenance Leaders and nine (9) Public Works Maintenance Workers. The cost to the City, in salaries at top step and fringe benefits, approximates \$855,100 annually.

This staff combats weeds and vegetation entirely with hand tools such as weedeaters, chainsaws, loppers, backpack blowers, brooms, shovels, and rakes. The staff responds to complaints; their services are not typically proactive. Pre-emergent and post-emergent chemicals were not utilized to control these weeds at the time this study was initiated.

As previously discussed, the Division should effectively utilize pre-emergent and post-emergent chemicals to prevent the occurrence of weeds in accordance with adopted City Council policy. The effective and judicious application of pre-emergent and post-

emergent herbicides and mulches would enable the elimination of one of these two crews. In addition, the Agency should “pilot” test the use of organic herbicides and mulches for vacant lots to suppress weeds.

The vegetation control crew should be reallocated to the Park Maintenance Section. The Park Maintenance Section managers and supervisors have the requisite pesticide applicators licenses. The comparative survey cities contacted by the MCG as part of this performance audit placed found vegetation control typically located in park maintenance (in association with median maintenance). Upon their redeployment of the remaining positions to the Park Maintenance Section, these staff should be reclassified as Gardener II's.

The cost impact of the recommendation regarding staffing is presented in the table below.

Annual Cost Increase		Annual Cost Decrease	
Reclassify six positions as Gardener II's	\$55,500	Vegetation control staffing exceeds workload and service level requirements by six positions.	\$498,000
<b>Total Operating Cost Increase</b>	<b>\$55,500</b>	<b>Total Operating Cost Decrease</b>	<b>\$498,000</b>

**Recommendation #257: Vegetation control staffing exceeds workload and service level requirements by six positions. Six positions should be eliminated through attrition.**

**Recommendation #258: The Agency should “pilot” test the use of organic herbicides and mulches for vacant lots to suppress weeds.**

**Recommendation #259: The vegetation control crew should be reallocated to the Park Maintenance Section.**

**Recommendation #260: Reclassify through attrition the remaining six positions assigned to the vegetation crew as Gardener II's upon their reassignment to the Park Maintenance Section.**

**(5) The City Should Utilize A Business Improvement District To Deliver the Higher levels of Service in the Downtown Area.**

The Keep Oakland Clean and Beautiful Division allocate ten (10) positions to the cleaning of the downtown area. This includes two (2) Street Maintenance Leader positions and eight (8) Public Works Maintenance Worker positions. The cost of providing this service is approximately \$870,000 annually in salaries and fringe benefits. This staff is responsible for cleaning sidewalks using power scrubbers, emptying litter containers, maintaining bus stops, collecting illegal dumping, etc. The power scrubbing service is provided two to three times a week. Litter containers and illegal dumping is collected five (5) times a week. This staff is split into two crews: one for the northern portion of the downtown and the other for the southern. The crews are responsible for an area that encompasses West Grand Avenue to the Nimitz freeway and Oak Street / Lake Merritt to Brush Street.

This is a higher level of service for a specific area of the City than provided elsewhere in the City.

Existing legislation in California and other states permits the creation of Business Improvement Districts (BID's) to raise funds to improve the district. BID's are a form of a benefit district. Revenue raised must be expended to benefit property owners in the district. If more than 50% of property owners in an area vote to create a BID a geographically defined BID comes into existence. In California, BID's last only five years and then must be renewed or go out of existence.



BID's have two core concerns: keeping their area clean and public safety. Cleaning may include litter pick up, graffiti removal, street and sidewalk sweeping, gum removal, steam cleaning, and pressure washing. For example, the Union Square BID pays a supervisor and cleaning crew to do routine cleaning seven days a week. BID's are designed to promote the interests of business in the district and BID funds are spent to promote business.

The City of San Diego has created 18 separate districts, with another two in the preliminary stages of formation. More than 11,000 small businesses participate in these self-assessment districts, raising more than \$1 million annually.

The City should explore the formation of a BID in the downtown. The services of cleaning the downtown including litter pick up, graffiti removal, street and sidewalk sweeping, gum removal, steam cleaning, and pressure washing should be outsourced to the BID.

The cost impact of this recommendation is presented in the table below.

Annual Cost Decrease	
Staffing for downtown cleaning can be reduced by ten (10) positions with the reallocation of workload to a downtown business improvement district.	\$870,000
<b>Total Operating Cost Decrease</b>	<b>\$870,000</b>

**Recommendation #261: Staffing for downtown cleaning can be reduced, through attrition, by ten (10) positions with the reallocation of workload to a downtown business improvement district.**

**(6) Reallocate Responsibility For Litter Container Cleaning and Maintenance To the City's Solid Waste Contractor Upon Renewal of the Contract in 2012.**

The Keep Oakland Clean and Beautiful Division allocates four 1-person crews to the cleaning and the maintenance of 1,209 containers in the City placed along the City's

streets. The garbage placed in these containers are collected by Waste Management Monday through Friday.

The four (4) Public Works Maintenance Workers within the Keep Oakland Clean and Beautiful Division are responsible for inspecting each container each day, removing graffiti, assuring the container doors are operable, cleaning up litter surrounding the container, cleaning the container, removal of weeds growing around the container, etc.

The City should outsource the responsibility for inspection and maintenance / repair of these waste containers as part of the franchise agreement. Waste Management is already collecting the garbage from these containers. The City should negotiate the provision of services to minimize the cost to the City. The services should be included in future revisions to the franchise agreement for the City's waste hauler with the waste hauler providing services to the City.

The cost impact of this recommendation is presented below.

Annual Cost Decrease	
Staffing for waste container maintenance and cleaning can be reduced by four (4) positions with the reallocation of this responsibility to the City's solid waste contractor.	\$324,000
<b>Total Operating Cost Decrease</b>	<b>\$324,000</b>

**Recommendation #262:** The City should expand the waste hauler's responsibilities to include inspection and maintenance / repair of waste containers placed along the City's streets upon renewal of the contract in 2012.

**Recommendation #263:** Staffing for waste container maintenance and cleaning can be reduced by four (4) positions, through attrition, with the reallocation of this responsibility to the City's solid waste hauler.

- (7) **Reduce the Staff Allocated for Cleaning Up Illegal Dumping By Increasing the Efficiency of Collection Techniques.**

The Agency allocates a substantial number of positions to cleaning up after illegal dumping – thirty-five (35) positions.

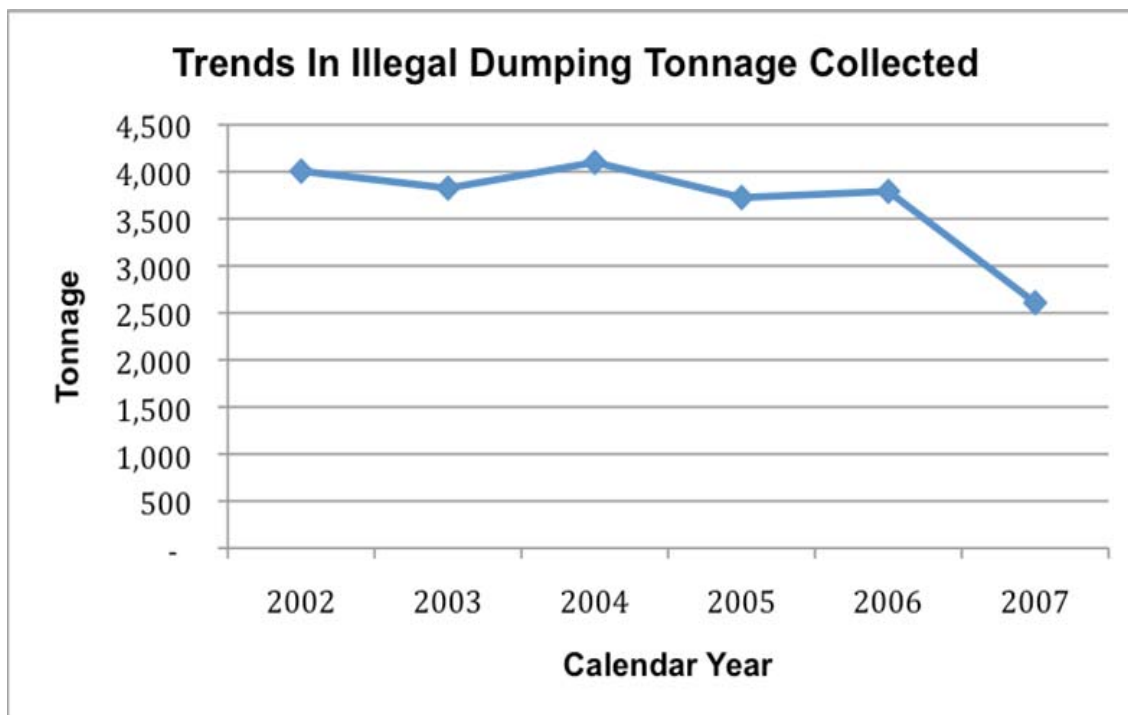
The staff is assigned geographically as noted below.

- Emeryville border to Lake Merritt;
- Lake Merritt to High Street;
- High Street to 82<sup>nd</sup> Avenue; and
- 82<sup>nd</sup> Avenue to the San Leandro border.

In addition, there are citywide crews for collection of tires, appliances, and e-waste that is illegally dumped. In an analysis by the MCG of the limited workload data available, one crew collected illegally dumped refuse from a low of nine different locations in one day to a high of twenty locations on another day over a four-week sample period. Data for other crews was not consistently available.

There are a number of indications that this is not an effective utilization of City financial resources. These indications are presented below.

- The illegal dumping tonnage has declined by 35% over the past six (6) years. The chart below summarizes the decline in tonnage of illegal dumping collected.



The tonnage collected declined somewhat in 2005 and 2006 in comparison to 2002 and 2004, but especially so in 2007.

- The Keep Oakland Clean and Beautiful Division is largely reacting to illegal dumping, and not preventing illegal dumping or aggressively prosecuting people that dump refuse illegally in Oakland. The Division, as noted in the previous chapter, should enhance its proactive approach to illegal dumping. These proactive practices, as noted in the previous chapter, should include:
  - Expanding the use of surveillance cameras; and
  - Increase the community cleanups by neighborhood associations in Oakland to clean up the neighborhoods.
- The efficiency of the methodology utilized to collect illegally dumped refuse can be enhanced. Some 2-person crews are equipped with refuse packers, while other 2-person crews are equipped with overhead loaders and 1-person crews are equipped with pickup trucks.

The MCG recommends a number of adjustments in staffing and methodology for the illegal dumping crews. These adjustments are presented below.

- **Each of the four geographical areas should be assigned two 2-person crews, each with a rear loader mini-refuse packer.** At present, three of the four areas are allocated a 2-person crew with a rear loader mini-refuse packer;

five additional **rear loader mini-refuse** packers should be acquired. One of these two crews in each geographical area would likely need to rotate out of their **rear loader mini-refuse** packers to flatbed trucks with lift gates one day a week to collect tires, appliances, and e-waste.

- **The 1-person complaint crews should be eliminated.** Each of the four geographical areas are assigned a 1-person complaint crew with a pickup truck. The illegally dumped refuse can be collected more effectively with refuse packers.
- **The Citywide tire and appliance collection crews and the e-waste collection crew should be eliminated.** The responsibility for the collection of illegally dumped tires, appliances, and e-waste should be assigned to the crews in the geographical areas.

This would result in the deployment of sixteen (16) staff to the collection of illegally dumped refuse and two (2) staff for leave of absence relief, and the elimination of nine (9) Public Works Maintenance Worker positions and one (1) Public Works Supervisor I position allocated to the collection of illegally dumped refuse.

The cost impact of this recommendation is presented below.

One-Time Cost Increase		Annual Cost Increase		Annual Cost Decrease	
Acquire five rear loader refuse packers	\$500,000	Operating and maintenance costs for five (5) rear loader mini-refuse packers	\$75,000	The efficiency of illegal dumping waste collection can be enhanced by enabling the reduction of nine (9) positions	\$849,600
<b>One-Time Cost Increase</b>	<b>\$500,000</b>	<b>Annual Cost Increase</b>	<b>\$75,000</b>	<b>Annual Cost Decrease</b>	<b>\$849,600</b>

**Recommendation #264:** The efficiency of illegal dumping waste collection can be enhanced enabling the reduction of nine (9) positions. Nine (9) positions should be eliminated through attrition.

**Recommendation #265:** Acquire five (5) rear loader refuse collection trucks for illegal dumping collection crews.

**(8) Litter Enforcement Staffing Exceeds Workload and Service Level Requirements by Three Positions.**

The Keep Oakland Clean and Beautiful Division is authorized six (6) Litter Enforcement Officer positions. The responsibilities of these six (6) Litter Enforcement Officer positions are presented below.

- Allocate an estimated 45% of their available work hours to public outreach and education regarding illegal dumping.
- Allocate an estimated 55% of their available work hours to the investigation of illegal dumping.
- Attend Service Delivery District (SDS) meetings..
- Enforce litter and nuisance regulations such as illegal dumping, littering, stuffing of litter containers and graffiti;
- Identifies violators of litter and nuisance regulations by sifting through the contents of materials disposed of illegally on public rights of way and City owned property, and by using tax rolls and other public records to identify the owners of property on which violations occur; contacts and warns identified violators or appropriate persons to take corrective action as required. Issue notices of violation. Prepare case files for appeal or court hearings.

The impact of these six (6) positions does not appear to be significant in terms of

preventing illegal dumping or citing people that are illegally dumping refuse in Oakland. These positions can add value, however, should the City pursue the preventive measures recommended earlier including expanding the use of surveillance cameras, which will require observation of the film, and engaging the neighborhood associations in Oakland to clean up and to prevent illegal dumping. The preventive measures do not require six (6) Litter Enforcement Officers. Three (3) of the positions should be eliminated through attrition.

The cost impact of this recommendation is presented in the table below.

Annual Cost Decrease	
Litter Enforcement staffing exceeds workload and staffing requirements by three (3) positions	\$319,100
<b>Annual Cost Decrease</b>	<b>\$319,100</b>

**Recommendation #266: Litter Enforcement staffing exceeds workload and staffing requirements by three (3) positions. Three (3) positions should be eliminated through attrition.**

**(9) Supervisory Staffing Exceeds Workload Requirements.**

The recommended reduction in staffing in the Keep Oakland Clean and Beautiful Division will also reduce the supervisory workload and demand. One Public Works Supervisor I position in the Division was previously recommended for elimination through attrition. However, further reductions would be possible with these recommended reductions given resulting spans of control. This would include a Public Works Supervisor II position, and two additional Public Works Supervisor I positions. The cost impact of the elimination of these three (3) positions is presented in the table below.

Annual Cost Decrease	
Eliminate a Public Works Supervisor II position and two Public Works Supervisor I positions in the Keep Oakland Clean and beautiful Division through attrition	\$388,800
<b>Annual Cost Decrease</b>	<b>\$388,800</b>

**Recommendation #267: Keep Oakland Clean and Beautiful Supervisory staffing exceeds workload by three (3) positions if previous staffing adjustments are implemented. Three (3) positions should be eliminated through attrition.**

**11. A NUMBER OF STAFFING ADJUSTMENTS SHOULD BE MADE WITHIN THE ADMINISTRATIVE SERVICES DEPARTMENT.**

The Administrative Services Department provides a wide variety of support services for the Agency including human resources, fiscal resources, the Call Center, training and safety, etc. The staffing for the Division is sufficient given its role with some exceptions as noted below.

**(1) The Three Positions That Were Transferred To The Information Systems Technology Department in Fiscal Year 2007-08 From the Agency Should Be Transferred Back To the Agency.**

The City has made a significant investment in the acquisition and deployment of Azteca Cityworks. In addition, the Agency will be installing a number of other information technology systems including SCADA (supervisory control and data acquisition) for its wastewater utility, an adaptive traffic signal control system for traffic engineering, etc.

The Agency, if it is to succeed in the installation and application of these systems, needs enhanced level of information technology support. The Information Technology Department is limited in their ability to provide this support given their diverse information technology workload, particularly for information systems that will not be used citywide, but only in the Agency.



To assure that these systems are successfully installed and applied in the Agency, the City should transfer the three (3) positions from the Department back to the Agency that were transferred to the Department in fiscal year 2007-08. This would include an Information Systems Administrator position and two (2) Microcomputer Systems Specialist positions.

The role of the positions would be to provide technical hardware and software support to users to improve and enhance computer systems to meet specific Agency business needs. The work would include assisting users with the evaluation, selection, acquisition and installation of hardware, software, and communications packages, and assisting users in problem analysis and providing advice leading to improved productivity and better integration of technology into their business operations. The essential functions of this position are provided below.

- Provide the day-to-day administration and maintenance of the Department's information software and hardware systems.
- Evaluate and analyze Agency processes, procedures, and workflow to determine the feasibility of different technology options and solutions to meet their requirements.
- Assist in system analysis, computer configuration, planning and training of employees on the Agency's information technology systems to ensure optimal performance of the systems.
- Resolve information technology operational problems for users in the Agency.
- Research, test and evaluate new software applications and upgrades of existing applications, and implement the installation and upgrades to the systems.
- Design and develop the Agency's web pages.
- Assist in providing technical direction and support, including budget projections, for the Agency in determining current and future software and hardware needs.

- Develop procedures manual and related forms to ensure smooth operations of information systems.
- Serve as a liaison to the Information Technology Department, and assist in prioritization, submission, and implementation of requests for service for the Department.
- Assure the development and installation of effective disaster recovery and contingency planning policies and procedures and security management and virus protection policies and procedures.

There is sufficient workload within the Agency to warrant the full-time assignment of these three (3) positions exclusively to the Agency. It is also a practice the MCG has observed in other cities such as Scottsdale, Arizona and in Alexandria, Virginia, for example. These cities have assigned information technology staff to their public works department, and these positions are budgeted by these departments. These positions are utilized to support applications unique to these departments, while the separate information technology departments focus on citywide applications.

**Recommendation #268: The City should transfer the three (3) positions from the Information Technology Department to the Agency that were transferred to the Department in fiscal year 2007-08. This would include an Information Systems Administrator position and two (2) Microcomputer Systems Specialist positions.**

**(2) Two Spatial Data Analyst III Positions Should Be Authorized For the Agency.**

The Agency must quickly respond to crises, manage high volumes of data, and manage workflow. To meet the growing needs of the City and to effectively work with other agencies, the Agency needs to be able to rely on updated enterprise geographic information system (GIS) technology. In fact, GIS is a key component of the effective utilization of Azteca Cityworks.

GIS organizes geographic data so a person can select data necessary for a job such as

road repairs, tree trimming, or solid waste collection. An enterprise-wide GIS allows all sections within a department, even those with little or no GIS experience, to share and easily access data, which facilitates better communication, improves data integrity, and enhances productivity within a department and with other departments. Employees can tap into the Department's database to create maps, design new projects, build and maintain the infrastructure, and make decisions based on current and accurate information. GIS applications such as asset management, street sweeper routing, traffic analysis, mobile computing, pavement management, and work order management make it easier to understand a problem, participate in a project, and communicate ideas.

The Agency lacks the staff to update and maintain its GIS layers. The City should authorize two Spatial Analyst III positions for the Agency to fulfill this role. The role of the Spatial Analyst III should be to develop and maintain the geographic information systems (GIS) databases, coverages, and linkages to various databases including reading and interpreting source documents, such as civil engineering plans, plot maps, and legal descriptions; and entering required data into the GIS. The essential functions fulfilled by these two positions should include the following:

- Perform complex GIS analysis and mapping; analyzes cartographic and statistical data and prepares reports, charts, and tables, and coordinates with managers and supervisors to address and respond to mapping, tabular, analytical, and report needs;
- Confer with divisions to coordinate system integration and define required output, and works with clients to ensure specific requirements are met.
- Provide quality assurance and control for map layers, seeking out appropriate information for mapping purposes, and performs field checks to verify locations of infrastructure.

- Perform data entry and data conversion through tablet digitization, on-screen digitization, keyboard data entry, scanning, GPS, remote sensing analysis, portable data entry units, and field data collection, preparing, designing and printing maps and related information, and communicating GIS related information to Agency staff and the public.
- Research, collect, compile, evaluate, reconcile, integrate, and analyze complex spatial data and attributes for mapping; edits geographic and tabular data; maintains metadata and documentation, online and hard copy;
- Analyze and manipulate databases to support a variety of infrastructure planning and other applications; designs and produces high quality cartographic output suitable for publication and public display.
- Present maps and data to Agency staff; analyzes and presents demographic and census data; responds to a variety of inquiries and requests for information and resolves issues or complaints.
- Train and assist Agency staff and clients with GIS applications and software.

The Agency lacks a vital staff resource necessary to update and maintain its mapping systems and GIS layers databases, coverages, and linkages.

These positions should be budgeted in the Administrative Services Department of the Agency, and report to the Information Systems Administrator.

However, the centralized GIS data repository should be maintained by the Information Technology Department. The centralized GIS data repository will generate cost savings resulting from reduced effort to retrieve, verify currency, and distribute GIS data to other divisions, departments, agencies, and external users. Additionally, a centralized GIS data repository will minimize duplicative copies of typically very large files and reduce hardware components such as server space. Finally, the greatest benefits of the Hub would be for casual users who could begin accessing GIS data from their desktop computers. To minimize duplicative or outdated data sets stored at other locations, all

GIS data should be provided at the Hub.

The annual cost impact of the addition of two Spatial Analyst III positions is presented in the table below.

Annual Cost Increase	
Authorize two Spatial Analyst III positions	\$277,800
<b>Total Cost Increase</b>	<b>\$277,800</b>

**Recommendation #269: Authorize two Spatial Analyst III positions for the Agency, and authorize these staff within the Administrative Services Department.**

**(3) The Management Assistant Position Assigned Responsibility For Agenda Management and Public Records Request Coordination Should be Eliminated Through Attrition.**

The Administrative Services Department is authorized a Management Assistant position that is largely responsible for agenda management for the Agency and for coordination of public records requests. This position was established shortly after the appointment of the Public Works Director. The specific responsibilities of the position are presented below.

- Responsible agenda management, public records request coordination for the Agency, and monitoring of claims and lawsuits filed against the Agency. This includes scheduling the items that will be presented to the Public Works Committee, reviewing agenda reports ensuring standard formatting is correct and edits requested of the Agency Director and City Administrator's Office are made to the report, forwarding the reports to the City Administrator's Office, participating in meetings related to the Council agenda, including the Public Works Committee, Rules Committee, internal staff meetings, etc.
- Functions as the contact person for the public and the City Attorney's office for public records requests.
- Coordinates the retrieval of information by the staff of the Agency.
- Coordinates off-site records storage.
- Maintains a log of all claims and lawsuits filed against the Agency.

- Facilitates a monthly meeting between the Agency and City Attorney's Office staff to discuss outstanding claims and lawsuits.

There is insufficient ongoing workload to warrant this position. This workload should be absorbed by other positions in the Agency. The cost impact of this recommendation is presented in the table below.

Annual Cost Decrease	
Eliminate the Management Assistant position responsible for agenda management for the Agency and for coordination of public records requests	\$142,300
<b>Total Cost Increase</b>	<b>\$142,300</b>

**Recommendation #270: Eliminate the Management Assistant position in the Administrative Services Department responsible for agenda management for the Agency and for coordination of public records requests through attrition.**

**(4) The Number of Analytical Staff Assigned to the Administrative Services Department Should be increased by Two Positions.**

At the present time, the Agency is authorized six (6) analyst positions in various classifications. These positions, and their roles and responsibilities, are presented in the exhibit following this page. In reviewing the exhibit, it is important to note that one of these six (6) positions functions as a human resources analyst position; this is the position in the Administrative Services Department assigned to the administration of the Agency's workers compensation program. The Agency is authorized 645 positions overall.

The MCG uses a benchmark of one (1) analyst for each one hundred and seventy-five (175) positions in a local government. For the Agency, this would indicate the need for approximately four (4) analyst positions. Compared to existing levels of analyst staffing, this would indicate that the Agency is authorized two (2) more administrative analyst position than necessary, excluding the position assigned to the workers' compensation

program.

**Exhibit 17 (1)****Roles and Responsibilities of Analyst Staff in the Public Works Agency**

<b>Unit Assignment</b>	<b>Class Title</b>	<b>No. of Positions</b>	<b>Roles and Responsibilities</b>
Infrastructure and Operations Assistant Directors Office	Budget and Operations Analyst III	1	<ul style="list-style-type: none"> <li>Assists in the monitoring of the Department of Infrastructure and Operations fiscal year operating and capital budgets to ensure the department's revenues and expenditures are consistent with the Budget. Work involves developing and implementing effective and efficient systems and procedures for monitoring.</li> <li>Processes and completes Budget Change Requests, Journal Vouchers, and Journal Transfers.</li> <li>Conducts budget analyses, prepares budget documents and reports, and makes recommendations from complex information and conduct complex financial analyses.</li> <li>Provides technical assistance to DIO staff on special requests for financial information.</li> <li>Manages and coordinates the Performance Measures for Department of Infrastructure and Operations.</li> </ul>
Facilities and Environment – Assistant Directors Office	Administrative Analyst II	1	<ul style="list-style-type: none"> <li>Provides analytical support to Department management for fiscal and project based projects.</li> <li>Manages special projects as assigned.</li> </ul>
Facilities and Environment – Assistant Directors Office	Administrative Services Manager I	1	<ul style="list-style-type: none"> <li>Coordinates preparation of Department Budget and oversees all Department Fiscal matters.</li> <li>Coordinates performance appraisal and planning process.</li> <li>Lead on APWA accreditation.</li> </ul>
	Clean Community Supervisor	1	<ul style="list-style-type: none"> <li>Organizes, manages and directs the work of the three agency volunteer programs</li> <li>Organizes, manages and directs the securing of additional funding for maintenance</li> <li>Organizes, manages and directs the inter-agency and outside agency liaisons</li> <li>Handles special projects as directed by the Assistant Director</li> </ul>



**Exhibit 17 (2)**

<b>Unit Assignment</b>	<b>Class Title</b>	<b>No. of Positions</b>	<b>Roles and Responsibilities</b>
Parks and Buildings Administration	Administrative Analyst II	1	<ul style="list-style-type: none"> <li>Assists in the development of the budget for the Division.</li> <li>Monitors expenditures and prepared BCR's and JV's</li> <li>Prepares Billable Work Orders</li> <li>Approves purchasing of supplies and materials</li> <li>Collects data for performance measures</li> <li>Uses Corrigo (work management)</li> <li>Develops policies and procedures for Division operations.</li> <li>Prepares reports.</li> </ul>
Facilities Services Administration	Administrative Analyst II	1	<ul style="list-style-type: none"> <li>Responsible for the day-to-day fiscal responsibilities of the Division to include monitoring the budget, purchasing, accounts payable, etc.</li> <li>Assists with budget development and monitoring.</li> <li>Prepares reports and performs analysis, under direction of Division Manager.</li> <li>Works on special assignments.</li> </ul>
Administrative Services Department	Administrative Analyst I	1	<ul style="list-style-type: none"> <li>Responsible for coordinating workers compensation benefits for the Agency.</li> <li>This includes serving as the point of contact within the Agency for workers compensation, working with the third party claims administrator to process and investigate the claims and acting as a liaison to Risk Management.</li> <li>Manages the Transitional Work Duty Program for Industrial and non-industrial claims.</li> <li>Holds monthly Worker's Compensation Meetings for managers.</li> <li>Attends Quarterly Review meetings with Risk Management and Third Party Administrator.</li> <li>Serves on the Agency Safety Committee.</li> </ul>

However, there are not any analyst positions assigned to the Administrative Services Department. The consequence is that little management reporting and management analysis is conducted on behalf of the Agency's executive management team. This void needs to be addressed if the Agency's executive management team is to be held accountable for effectively and efficiently managing the resources allocated to the Agency.

The Administrative Services Department should be authorized two (2) analyst positions with responsibility for the following tasks:

- Analyze and develop process, procedures, work simplification, computer applications and methods of achieving intended outcomes;
- Analyze proposals for immediate and long-term policy and fiscal impacts and make recommendations based on findings;
- Conduct analytical studies of complex and sensitive financial, organizational or operational issues;
- Conduct fiscal investigations and prepare written and oral reports with recommendations for presentation to management;
- Coordinate and assemble a variety of financial/statistical information for inclusion in reports and presentations;
- Coordinate and implement programs, policies and procedures (e.g., employee evaluation process, continuous improvement, etc.);
- Participates in the development, execution and/or coordination of specific programs or studies;
- Perform a variety of complex data gathering, analyses, and report writing activities on a special project basis and
- Prepare and present a wide variety of policy reports, proposals, documents and correspondence including, but not limited to costing, expenditure and revenue recommendations, and related issues.

One of these two positions should be the Administrative Services Manager position authorized in the Facilities and Environment - Assistant Director's Office. The other should be an additional Budget and Operations Analyst III position. The cost impact of this recommendation is presented in the table below.

Annual Cost Increase	
Authorize a Budget and Operations Analyst III position	\$126,000
<b>Total Cost Increase</b>	<b>\$126,000</b>

**Recommendation #271: The Administrative Services Manager position authorized in the Facilities and Environment - Assistant Director's Office should be transferred to the Administrative Services Department.**

**Recommendation #272: Authorize a Budget and Operations Analyst III for the Administrative Services Department.**

**(5) Human Resources Delivery Within The Agency Should Continue To Be Based Upon A Hybrid System.**

The delivery of human resources within the Agency is a hybrid system. The Human Resources Section, Administrative Services Department within the Agency is responsible for the delivery of some human resource services, while the Personnel Division / Finance and Management Agency is responsible for the delivery of other human resource services. More specifically:

- The Agency is responsible for the recruiting and selecting exempt positions within the Agency, administering workers compensation, maintaining personnel files, coordinating performance appraisals, maintaining position control, providing safety training, etc.
- The Personnel Division / Finance and Management Agency is responsible for recruitment and selection of non-exempt positions, classification and compensation, labor relations, the employee assistance program, employee benefits administration.

The use of a hybrid organization for human resource service delivery is not unusual in large organizations such as Oakland.

The Agency allocates six (6) positions to human resources within the Administrative Services Department. The roles and responsibilities of these six positions are presented in the exhibit on the following page.

The MCG uses a benchmark of one (1) human resources position for each seventy (70) positions in a local government. For the Agency, this would indicate the need for approximately nine (9) human resources position positions. Compared to existing levels of analyst staffing, this would indicate that the Agency is authorized three (3) less positions than necessary. However, with the use and application of a hybrid form of organization for delivery of human resources, this is not unexpected as the balance of the positions would be located in the Personnel Division / Finance and Management Agency.

The positions that are allocated to Human Resources Section, Administrative Services Department within the Agency are largely dedicated to typical human resource programs including safety training, recruitment and selection, employee relations including disciplinary matters, etc. The Human Resources Section of the Administrative Services Department within the Agency best delivers these programs.

**Recommendation #273: The delivery of human resource services within the Agency should continue to be based upon a hybrid system that includes service delivery by the Human Resources Section, the Administrative Services Department within the Agency and the Personnel Division / Finance and Management Agency. Human resource service delivery should not be consolidated within the Personnel Division / Finance and Management Agency.**

**Exhibit 18 (1)****Roles and Responsibilities of  
Public Works Agency Human Resources Staff**

<b>Unit Assignment</b>	<b>Class Title</b>	<b>No. of Positions</b>	<b>Roles and Responsibilities</b>
Safety Training and Public Information	Training and Public Services Administrator	1	<ul style="list-style-type: none"> <li>▪ Manages the Agency's Safety program: Allocates an estimated 75% of her available work hours to safety program development, safety training, facility safety inspections, safety monitoring, responding to safety issues and concerns, etc.</li> <li>▪ Chairs the Public Works Agency Accident Review Committee.</li> <li>▪ Chairs the Public Works Agency Safety Committee.</li> <li>▪ Functions as the public information officer for the Agency.</li> <li>▪ Coordinates release of information to the public, the media, and other city agencies/departments. Also responsible for coordinating website and intranet site updates and development for the Agency.</li> <li>▪ Also serves as part of the City's Emergency Public Information Officer team.</li> <li>▪ Supervises one Public Service Representative, responsible for staffing the Agency's front customer service desk.</li> </ul>
Human Resources	Administrative Services Manager II	1	<ul style="list-style-type: none"> <li>• Manages the human resources function for the Agency.</li> <li>• Supervises payroll, worker's compensation, and general personnel matters including recruitment and selection, employee relations, Equal Opportunity discrimination issues, etc.</li> <li>• Serves as liaison to city's Personnel offices, including recruitment, employee relations, position control and payroll.</li> <li>• Supervises one Support Service Supervisor, an Administrative Assistant II, an Administrative Analyst I, as well as provides oversight management of the payroll staff.</li> <li>• Attends monthly and quarterly Worker's Compensation meetings with third party administrator and with Risk Management.</li> </ul>

**Exhibit 18 (2)**

<b>Unit Assignment</b>	<b>Class Title</b>	<b>No. of Positions</b>	<b>Roles and Responsibilities</b>
Human Resources	Support Services Supervisor	1	<ul style="list-style-type: none"> <li>Provides in-depth analysis and support to managers and supervisors on complex personnel matters, including workers' compensation and FEHA cases.</li> <li>Conducts recruitments for exempt positions.</li> <li>Drafts, reviews and/or advises managers and supervisors on disciplinary actions.</li> <li>Drafts, reviews and/or advises manager and supervisors on grievances filed.</li> <li>Handles Equal Opportunity discrimination issues.</li> <li>Serves as liaison to Employee Relations and Labor Unions on Meet and Confer and Meet and Discuss issues.</li> <li>Standardizes general work rules and agency-specific protocols.</li> <li>Trains managers and supervisors on daily HR issues, including conducting roundtable discussions on common problems.</li> <li>Serves as liaison with Employee Assistance Program.</li> <li>Develops and implements succession planning strategies.</li> <li>Addresses DMV Pull Notice issues on case-by-case basis.</li> <li>Processes Add/Deletes position changes.</li> <li>Develops employee letters and monitors Family Medical Leave Act (FMLA) and California Family Rights Act (CFRA).</li> <li>Drafts, processes and ensures compliance with attendance management programs, drug and alcohol testing, EAP referrals, Last Chance Agreements, performance appraisals, fitness for duty exams and return to work exams.</li> <li>Manages MOU-mandated Commercial Drivers' Training Program.</li> <li>Provides on-site consultation to employees and managers on a variety of topics from interpersonal conflicts to managing drug/alcohol substance cases.</li> </ul>
	Administrative Assistant II	1	

**Exhibit 18 (3)**

<b>Unit Assignment</b>	<b>Class Title</b>	<b>No. of Positions</b>	<b>Roles and Responsibilities</b>
Human Resources	Administrative Analyst I	1	<ul style="list-style-type: none"> <li>• Responsible for coordinating workers' compensation benefits for the Agency.</li> <li>• This includes serving as the point of contact within the Agency for workers compensation, working with the third party claims administrator to process and investigating the claims and acting as a liaison to Risk Management.</li> <li>• Manages the Transitional Work Duty Program for Industrial and non- industrial claims.</li> <li>• Holds monthly Worker's Compensation Meetings for managers.</li> <li>• Attends Quarterly Review meetings with Risk Management and Third Party Administrator.</li> <li>• Serves on the Agency Safety Committee</li> </ul>
Human Resources	Administrative Assistant II	1	<ul style="list-style-type: none"> <li>• Maintains and reconciles position control for the Agency on a monthly basis.</li> <li>• Provides recruitment and selection support services, including scheduling meetings, interviews, mailing interview invitations to candidates, etc.</li> <li>• Processes all Personnel Action Request forms for the Agency.</li> <li>• Key point of contact for all incoming and outgoing personnel paperwork for the Agency.</li> </ul>

**(6) The Responsibility for Supervision of Payroll Should Be Reallocated from the Human Resources Section, Administrative Services Department to the Fiscal Services Section, Administrative Services Department.**

The Administrative Services Department is authorized three (3) Payroll Personnel Clerk III positions. These positions are responsible for processing all of the payroll transactions for the Agency including data entry of over 700 time cards for all of the staff of the Agency on a weekly basis. Other tasks that these staff perform includes the following:

- Process leave buyback and overtime slips, etc.;
- Prepare Personnel Action Requests (PARs) as employees enter, transfer or exit the Agency; and
- Schedule orientations meetings for new employees.

At the present time, these positions are placed under the supervision of the Support Services Supervisor, Human Resources Section of the Administrative Services Department.

For internal control purposes, these staff should be reallocated to the Fiscal Services Section, Administrative Services Department. These staff should not be placed under the supervision of the same manager responsible for processing Personnel Action Requests.

**Recommendation #274: The three (3) Payroll Personnel Clerk III positions should be reassigned from the Human Resources Section to the Fiscal Services Section of the Administrative Services Department.**

**(7) The Agency Should Automate The Internal Routing and Approval of Invoices and Utilize Electronic Data Interchange For Payment Of Vendors With A High Volume of Invoices.**



The accounts payable process is prime for process improvement. Accounts payable is a time consuming, labor intensive process. The accounts payable process involves manual key entry, is paper-based, involves a high volume of documents, every vendor's invoice looks different, it involves a complex and lengthy approval process, and the process is difficult to manage. Paper-based distribution and storage is costly. Paper-based archiving is expensive and inefficient for retrieval.

The Agency, at the present time, allocates one (1) Accountant III and four (4) Account Clerk I / II's to accounts payable. These staff receive invoices, stamp and code the invoice, prepare a manual spreadsheet with the invoice and forward to the Finance Department for inputting and payment. The staff provides accounts payable services for the Agency including an annual average of 28,600 invoices and 3,500 purchase orders.

The Institute of Management and Administration (IOMA) published in 2004 a guide to electronic invoicing and payment entitled *Harnessing the Power of e: the AP Department's Guide to Electronic Invoicing*. The guide contained a number of conclusions as noted below.

- **Electronic invoicing reduces the costs of invoice processing substantially.** IOMA asked companies that tracked their processing costs before and after installing an electronic invoicing solution to report on the results. In every case, there were significant savings in several areas, such as invoice capture costs and the cost of routing and circulating invoices for approval. The average net cost reduction was 41%.
- **Accounts Payable is invoicing presentment and payment at an accelerating rate.** In the electronic invoicing marketplace – imaging systems are quickly gaining acceptance. Fully 40% of survey respondents report that they have installed this form of equipment, although it is not as widely used to replace other methods of invoice processing. The expected acceleration in adoption was confirmed by the high percentage of respondents that plan to implement or upgrade electronic solutions. Responding to a survey question about their

attitudes, 20.3% of respondents said they would definitely install or upgrade electronic invoicing capabilities. Answering a second question about a range of technologies including imaging, workflow and financial software, 42.3% indicated a specific solution they planned to purchase by the end of 2005.

- **Accounts Payable Managers have been slow to adopt electronic invoicing solutions because they are not familiar with them.** Accounts Payable managers are eager to know about electronic invoicing, but until now, they have remained in the dark. More than 60% of respondents could not name a single brand or vendor of electronic invoicing solutions. Similarly, 34% of respondents listed lack of knowledge as their company's attitude toward electronic invoicing.
- **The most important decision about electronic invoicing was whether to link to suppliers or automate only in-house processing.** Closely related to the definitional confusion was the issue of solution scope. Solution providers of all types disagree about whether such solutions as imaging, workflow management, purchasing and enterprise resource planning applications can rightly be called electronic invoicing, since they do not necessarily support the total elimination of paper or the creation of invoices in electronic form. However, from an Accounts Payable point of view, it is possible to automate or digitize invoice processing at any point in the invoicing cycle, not only at the point of invoice creation. This distinction turns out to be exceptionally important because a full-cycle solution that is linked to the suppliers who create invoices carries with it both potential benefits and potential difficulties that are much greater than the potential difficulties and benefits of a solution that automates only in-house processing for the Accounts Payable and its internal customers. Thus, the decision whether to link to suppliers or not has been identified as the single most important decision to be made in an electronic invoicing initiative.

The two primary choices regarding electronic invoicing are summarized below.

- **Focus on invoice data capture rather than manually keying data (or electronic invoicing).** This would involve the vendor submitting an electronic invoice through electronic data interchange (EDI), web forms, or mapping. A number of cities are using this approach. Charlottesville, Virginia, for example, has set up a process so that vendors can e-mail invoices to the City's accounts payable.
- **Focus on internal routing and approval.** In this alternative, Accounts Payable staff would utilize an imaging system to scan invoices and route these invoices to departments for approval. Murrieta, Georgia, for example, set up an optical image storage system linked to an invoice approval process. When the city receives an invoice, it is scanned and matched against the electronic purchase order. The payment is authorized electronically and the invoice information is automatically posted to the city's accounting system. Since the invoices are

scanned directly into the system, the information does not have to be keyed in manually.

The benefits from electronic invoicing derive from automating invoice data capture, invoice quality assurance, invoice approval, discounts taken due to faster processing, invoice archival, and avoidance of overpayments due to error detection.

The Agency should focus on the second option – the automation of internal routing and approval. There are a number of solutions that would leverage the City's investment in Oracle to streamline the accounts payable process. These solutions enable invoices received by mail to be automatically captured, data extracted, indexed and uploaded into Oracle Accounts Payable without the need for manual data entry. Further, the invoice image is automatically routed and made available throughout the approval process. This allows accounts payable group to eliminate manual data entry, invoice routing and approval, and invoice storage, which can significantly reduce the time to process invoices, lost or misrouted invoices, and lower operational costs. The MCG recommends that the Agency initially focus on streamlining the internal routing and approval of vendor invoices using this alternative. Under this scenario:

- Paper documents that arrive via the mail are sorted. Once sorted, the invoices are bar-coded. With bar coding, an invoice can be tracked easily. The bar code might identify the priority of the document—rush, normal, low—or the type of document—purchase or non-purchase order—or some other category.
- For forms and business documents, there is information on the document that must be entered into Oracle financial software, for invoice management and for audit purposes. OCR / ICR assisted data entry requires that an accounts payable staff look at the recognition results and the image of the document on the computer and make corrections of failed validations or “low confidence” characters. This is the fastest way to get data into a computer system. OCR / ICR unstructured forms processing uses sophisticated software to automatically locate important fields of information, such as the invoice number, date, total amount due, freight charges, and purchase order number. The software then

enters these pieces of information into the accounting database. This virtually eliminates manual indexing unstructured forms processing also significantly improves data accuracy to as high as 99% with many OCR / ICR software applications.

- With the OCR / ICR software performing the data entry, the Accounts Payables staff is transformed into a verifier of information rather than someone who performs data entry. The staff would review the data presented in the computer that shows the full image and data that the OCR engine has scanned side-by-side. If there is a failed validation, the OCR / ICR software highlights that field with a color. Accounts Payables staff simply open the image, look for a highlighted field and fix any problems the staff sees. If the staff see none, the staff clicks to the next document with a hotkey.”
- The invoice is then routed to the appropriate division / department for electronic approval.

The second step the Agency should take is electronic payment of invoices using electronic data interchange. The use of electronic data interchange is useful for a small number of vendors with a high volume of invoices. The MCG has found that a high proportion of vendor payments are made to a few different vendors.

One city requires that any vendor with City contracts over \$25,000 per year enroll in the City’s vendor payment direct deposit program. The City of Riverside is in the process of transitioning all payments made by paper check to electronic payments. The City and County of San Francisco is similarly transitioning to electronic payments.

As a third step, the Agency could have vendors e-mail invoices to the Agency. This would focus on high-volume vendors e-mailing invoices from static addresses, optically reading the invoice attachments, and posting the invoices into the accounts payable system.

However, initially, the Agency should utilize an invoice imaging, information capture,

and workflow solution. This offers the Agency the biggest bang for the buck. The technology is real, straight-forward to implement, and inexpensive. These solutions handle every invoice that comes through the door through a combination of layout and content classification and data extraction. These systems would enable the Department to automate the internal accounts payable invoice process. The process involves a shift to information capturing versus just image capturing. This approach is recommended for every organization, regardless of invoice volume.

With the automation of the accounts payable process, the Agency should be able to reduce staffing by three (3) Account Clerk I / II positions. This staffing recommendation is based upon benchmarks reported by the Institute of Management and Administration regarding the number of invoices processed per position per month.<sup>41</sup> The cost impact of this recommendation is presented in the table below.

Annual Cost Decrease	
Eliminate three Account Clerk I / II positions upon the automation of internal routing and approval of invoices.	\$194,700
<b>Total Cost Decrease</b>	<b>\$194,700</b>

**Recommendation #275: The Agency should automate the accounts payable process initially focusing on streamlining the invoice data entry, internal routing, and approval process.**

**Recommendation #276: The Agency should utilize document imaging and OCR / ICR assisted data entry for invoice data entry.**

**Recommendation #277: The Agency should initiate electronic payment of invoices with any vendor with Agency contracts over \$25,000 per year using electronic data interchange.**

**Recommendation #278: Eliminate three (3) Account Clerk I / II positions upon the automation of internal routing and approval of invoices in the Agency.**

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<sup>41</sup> AP Department Benchmarks and Analysis 2007, Institute of Management and Administration

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**(8) The Agency Should Expand the Use and Deployment of Distributed Time Entry for Payroll.**

The *Institute of Management and Administration* recently issued a Payroll Benchmarks and Analysis Report.<sup>42</sup> The vast majority of the responding organizations were private organizations (81%). On average, respondent organizations recorded \$11.5 billion in annual revenue (median was \$110 million), with an average of 7,179 total employees (median was 1,000). The largest percentage of respondents identified themselves as working in the services/consulting industry (18.3%), while the lowest percentage (4.6%) represented the construction industry. On average respondents paid in 14 states and 4 countries. The majority of respondents work in payroll departments that process payroll completely in-house (46.9%), although a sizeable percentage (43.8%) report outsourcing several payroll functions and keeping others in-house. The biweekly payroll frequency is utilized by nearly 50% of the respondents.

The Agency allocates three (3) Payroll Clerk III positions to processing all of the payroll transactions for the Agency. The responsibilities of this staff include processing all of the payroll transactions for the Agency including data entry of over 700 time cards on a weekly basis, processing leave buyback and overtime slips, scheduling orientations for new employees, and completing special payroll projects as needed.

The Oracle financial systems utilized by the City enable distributed time entry by employees. The Agency is not using this capacity for all Agency staff. The Agency should expand the use this feature, either by having its employees enter this data or by having the clerical staff in the divisions of the Agency enter this data. The Administrative

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<sup>42</sup> Payroll Benchmarks and Analysis Report 2009, Institute of Management and Administration.

Services Department should not enter the timecards except for the staff of the Department.

This approach should enable the reduction of payroll staff within the Administrative Services Department. The Payroll Benchmarks and Analysis Report indicated that responding government / non-profit organizations with between 500 to 1,000 employees had an average of 2.1 employees. The impact of high levels of payroll automation is clearly depicted in the report. High levels of automation reduce the cost per payroll payment by 48%. The implementation of a greater amount of distributed time entry by the employees of the Agency would result in a high level of payroll automation for the Agency. The expanded use of distributed time entry should enable the reduction of one (1) Payroll Clerk III position. The cost impact of this recommendation is depicted in the table below.

Annual Cost Decrease	
Eliminate one (1) Payroll Clerk III position upon the expanded use and deployment of distributed time entry.	\$91,700
<b>Total Cost Decrease</b>	<b>\$91,700</b>

**Recommendation #279: With the successful deployment of the distributed time entry, the Administrative Services Department should reduce staffing by one Payroll Clerk III position.**

**(9) The Level of Staffing Within the Agency's Call Center Is Sufficient Given Its Present Scope of Responsibility.**

The Agency is fortunate to have developed and deployed a Call Center. It is a rare asset. The International City / County Management Association, in an analysis of call centers entitled *Call 311: Connecting Citizens to Local Government*, found that only 23% of the reporting cities with a population between 100,000 to 499,999 had a

centralized customer service system.<sup>43</sup>

The Agency is authorized four (4) Public Service Representatives and a Management Assistant, who is responsible for managing the Call Center.

The Agency's Call Center receives approximately 4,918 calls per month or an estimated 59,000 calls annually. The benchmark utilized by the MCG is 21,000 calls per customer service representative per year. This would indicate that the Agency requires almost three full-time positions in the Call Center. The Call Center has the capacity to handle approximately 84,000 calls or 42% more than existing workload.

**Recommendation #280: The Agency's Call Center is capable of handling approximately 42% more call volume workload than existing workload.**

## **12. THE ORGANIZATIONAL STRUCTURE OF THE AGENCY SHOULD BE MODIFIED.**

Local government's organizational structure is often one of unplanned growth resulting in an overall system that is often duplicative, highly fragmented, occasionally inefficient and very difficult to change. While not uncommon, incremental changes without an overall strategy can be detrimental to the organization's overall performance. For example:

- Are some programs unnecessarily duplicative? Does this duplication constrain progress in other areas? Administrative savings resulting from consolidation of redundant programs could be put towards enhancement of municipal services.
- Is the current structure too fragmented? Does the fragmentation prevent the Agency from effectively mounting major initiatives and encourage the proliferation of smaller, less dramatic efforts? Does this result in slower progress and lost opportunities for major gains? Fragmentation means less flexibility for major initiatives.

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<sup>43</sup> Call 311: Connecting Citizens to Local Government, International City / County Management Association, 2008



- Is the current structure too inefficient? Do too many divisions recreate the same administrative structures? Are these structures necessary, or are they redundant?
- Does a complex structure make it resistant to change of direction, either from Mayor, City Council, or top management? Does the complexity of the organizational structure and the diversity of its structure make it more difficult for the public and the community to identify opportunities, obtain information, and influence policy? Would other methods of organization allow a greater degree of public input?

Reorganizations often occur for the wrong reasons, and do not address the fundamental problems. However, while poor organizational structure will not prevent the Agency from achieving its mission, it will hinder its ability.

**(1) A Number Of Organizational Trends Should Be Considered.**

There are a number of trends apparent in public sector organizations that should be considered in evaluating alternative forms of organization. These trends reflect a moving away from organizations and systems that are:

- Centralized;
- Hierarchical;
- Rule-driven;
- Process-oriented;
- Monopolistic; and
- Reactive.

The public sector is moving toward organizations and systems that are characterized by the elements presented below.

- **Decentralized and flexible.** Public Works organizations are designing their structure, systems and processes to provide a different response to different situations, to become more flexible and open to change. They want to be able to react quickly to changes in the market place. Greater autonomy and initiative are encouraged.

- **Flatter organizations.** Organizations are reducing the number of layers of managers and supervisors resulting in fewer levels of organization, workers empowered to make decisions, and fewer differences in responsibility. The flatter organization results from the need for quicker decisions requiring empowered employees, and changes in information technology lessening the need for the command and control functions performed by middle managers.
- **Mission and results-driven organizations.** Public Works organizations are encouraging long-term thinking through the development goals, translation of these goals into desired results, and the use of performance measures to make more informed decisions on program priorities and resource allocations;
- **Competitive organizations.** Under pressure from the economy, state takeaways of revenue, and devolution of service from the state, cities in California are restructuring their services to be more competitive with the private sector.
- **Anticipatory organizations.** Instead of putting out fires, Public Works organizations are focusing on how to prevent them through such efforts as development of plans for preventive maintenance of infrastructure, the development of proactive programs to address illegal dumping, the development of infrastructure master plans, etc.
- **Customer centric organizations.** Constituents are increasingly looking over the shoulder of cities and requiring justification for their actions. There is increasing conflict within communities regarding the funding priorities of cities. This necessitates local government to increasingly spend more time considering how to reach constituents and be more aggressive in getting their customers involved.

These trends need to be considered in the evaluation of the Agency organizational structure and the development of alternatives.

**(2) In Evaluating The Plan Of Organization And Management Systems, A Number Of Principles Should Be Considered.**

In evaluating the plan of organization and the management systems of the Agency, the MCG utilized a number of principles for organizational structure. These principles are presented in the paragraphs below.

- **The Agency should be organized on a ‘form follows function’** with a clear, distinct and comprehensive sense of purpose or mission for each area. Functions are grouped consistent with their periodic interaction, common planning and scheduling systems, delivery of services which are linked in some way, etc. resulting in functional cohesion.

- **The organizational structure should foster accountability.** The organizational structure fosters accountability among management and supervisory staff. While this criteria overlaps with the management systems utilized, the organizational structure itself can facilitate or impede the performance of an organization.
- **The plan of organization should enhance communication and coordination.** The number of handoffs/exchanges required among different divisions within the Agency providing service to the public is minimized. The structure enhances shared knowledge and understanding among divisions and departments. The channels of communication are clear and consistent.
- **Staff resources should be utilized efficiently.** The plan of organization minimizes administrative overhead. Workload can be distributed/shared to maximize the productivity of staff through peaks and valleys and offer cross-functional capabilities (e.g., to balance workload of maintenance staff across street maintenance, traffic control maintenance, etc.). Processes can be standardized to enhance the efficiency and customer responsiveness of services (e.g., the development review process).
- **The potential of human capital should be enabled.** The plan of organization enhances career development opportunities, training and recruitment and retention.
- **The quality and responsiveness of services provided to customers should be improved.** The plan of organization enables staff to provide better service to the public in terms of cycle times, user friendliness, performance management, quality control, and consistency of the application of policies and procedures.
- **Each division in the Agency's organization should be placed at a level in accordance with its importance in achieving Agency goals.** Divisions have not been placed too high in the organizational structure or too low relative to their importance.
- **The span of control for any manager or supervisor should not exceed the number which can be feasibly and effectively supervised.** The trend is to widen span of control. In the last decade, the introduction of information technology spurred the trend toward wider spans of control.
- **The number of layers of management should not result in a tall, narrow configuration for the Agency.** Organizations with many layers are associated with centralized decision-making. Flatter organizations tend to have decentralized decision-making, as authority for making decisions is given to the front-line employees.

- **The plan of organization enhances the effectiveness of the Public Works Director as the manager of the Agency.** The organizational structure limits the span of control of the Public Works Director, provides analytical support to develop goals, objectives, and performance measures, and provides resources to build and connect with the diverse neighborhoods in the City to enable the Public Works Director to manage a diverse and complex organization.

The lack of an overall vision of organizational principles has created many of the inefficiencies that exist in the Agency today.

**(3) A Number of Principles Were Utilized In The Analysis Of Alternatives To The Agency's Organizational Structure.**

The principles enumerated previously were then converted into a matrix to enable the MCG to evaluate the Agency plan of organization. This matrix is presented below.

CRITERIA
<b>Organization and Structure</b>
• Clear lines of accountability
• Spans of control/number of management layers
• Functional cohesion
<b>Communication and cohesion</b>
• Hand-offs/exchanges (internal/external)
• Physical/virtual proximity
• Shared knowledge/understanding
<b>Resource Utilization (Cost)</b>
• Administrative overhead
• Workload management (even distribution)
• Process efficiency/standardization
• Resource sharing
<b>Human Capital</b>
• Career development
• Training
• Recruitment and retention
<b>Agility and Flexibility of the Organization</b>
• Scalability (ability to manage peaks and valleys)
• Adaptability (cross functional capability)
<b>Service Quality and Responsiveness</b>
• Customer service
• Performance management
• Quality control checks and balances
• Consistency of policy/procedure application

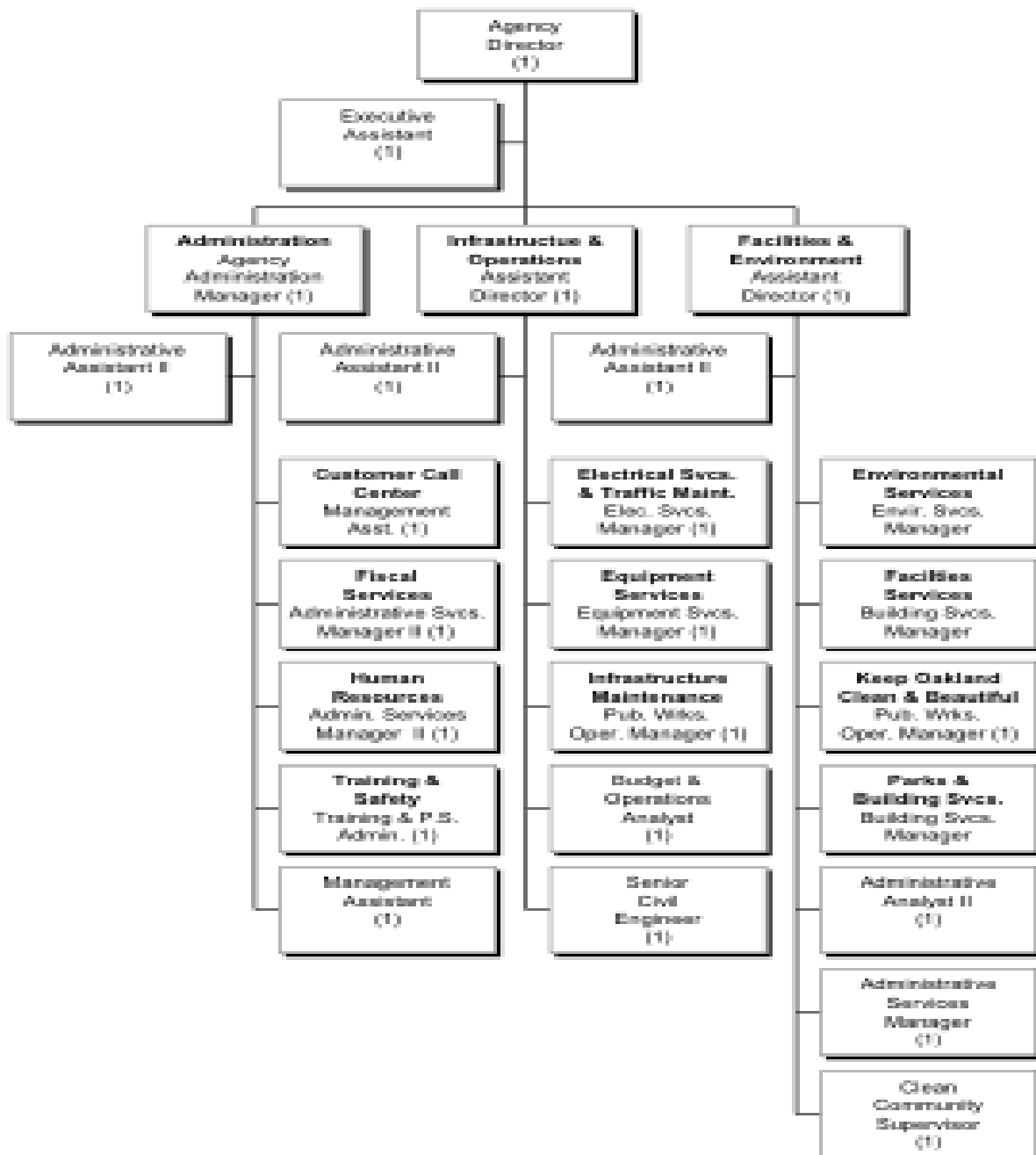
From the analysis of the alternatives using these criteria, a set of arguments for and against each alternative was constructed, leading to a recommendation of a preferred alternative.

#### **(4) The Current Plan Of Administrative Organization Of The Agency.**

The exhibit following this page presents the existing plan of organization of the Agency. The table, below, describes the assessment by MCG of the challenges with the current organization of functions and management staff in the Agency.

• The spans of control for some divisions are too broad, and in other divisions are too narrow
• There is an imbalance of administrative support staff within the three departments.
• The responsibility for management of the maintenance and repair of the City's buildings is fragmented between two divisions: Facilities Management and Parks and Buildings.
• The responsibility for volunteer management is fragmented among a number of different staff and different divisions.
• The extent of analytical support for the Public Works Director in the Administrative Department is non-existent, with the exception of the Agency Administrative Manager.
• The responsibility for the maintenance and repair of the sanitary sewer system and the storm drain system is fragmented.
• The responsibility for median maintenance and vegetation management is fragmented among two Divisions: Parks and Building and Keep Oakland Clean and Beautiful.
• The responsibility for managing the City's urban forest is assigned to the same manager responsible for the management of the City's streets, sidewalks, storm sewers, and sanitary sewers.
• The responsibility for engineering services has been fragmented between the Engineering and Construction Department / CEDA and the Public Works Agency.
• Key staff resources necessary for effective asset management are located outside of the Agency. The Engineering and Construction department is located in the Community and Economic Development Agency.
• Development engineering is located in Building Services / CEDA. Not one of the cities included in the comparative survey placed development engineering in Building Services. This location limits inhibits the professional growth of engineers in development engineering. This location also complicates the development review process by increasing the number of "handoffs" of development submittals between development engineering and the Agency.

## Exhibit 19

Existing Plan of Administrative  
Organization of the Public Works Agency

**(5) Proposed Plan Of Organization for the Agency**

The proposed alternative plan of organization for the Agency is designed to address the organizational issues identified in the previous section. Specific characteristics of this organizational alternative are described below.

- **The responsibility for managing all of the City's buildings would be consolidated with the Facilities Manager.** This manager would supervisor a Facilities Complex Manager for custodial maintenance and a Facilities Complex Manager for building maintenance (transferred from the existing Parks and Building Division). This manager would supervise two Assistant Facilities Managers: one for custodial services and another for building maintenance services. This is not an unreasonable span of control.
- **The responsibility for managing the urban forest, parks, medians, and vegetation management would be consolidated with a Parks Manager.** This would be a new classification for the existing manager of the existing Parks and Building Division. The Parks Manager would supervise a Parks Supervisor II and a Tree Supervisor II. This would include the transfer of crews allocated to median maintenance and vegetation control from the Keep Oakland Clean and Beautiful Division.
- **The responsibility for management of streets and electrical services would be consolidated with a Public Works Operations Manager.** This manager would be reclassified from an Electrical Services Manager. This manager would supervise a Public Works Supervisor II for streets and sidewalks maintenance, an Electrical Supervisor for Street Lights, and an Electrical Supervisor for Traffic Signals. The Public Works Supervisor II responsible for supervision of streets and sidewalks would assume responsibility for supervising the Public Works Supervisor I for traffic maintenance (signs, pavement markings, and street striping).
- **The responsibility for volunteer management for the Agency would be consolidated in the Facilities and Environment Department.** A Clean Community Supervisor position, transferred from the Keep Oakland Clean and Beautiful Division, should assume overall responsibility for the management of the volunteer program for the Agency as a whole.
- **A Management Analysis program would be established in the Administrative Department.** This would consist of two positions transferred from the Facilities and Environment Department: an Administrative Services Manager and a Clean Community Supervisor. These positions should be reclassified, through attrition, within the Budget and Operations Analyst series.

- **The responsibility for electrical engineering and for architectural services should be transferred to the Engineering and Construction Department / CEDA.** The duplication of effort and services should be eliminated.
- **The Engineering and Construction Department should be transferred from the Community and Economic Development Agency to the Agency.** The comparative survey conducted by the MCG found that this is the typical plan of organization for public works departments. The reason is clear: engineering staff and asset maintenance staff need to work closely to promote a cost-effective life cycle for the City's infrastructure.
- **The engineering staff assigned to Building Services for the purposes of development engineering should be assigned to the Engineering and Construction Department.** This staff is responsible for the issuance of right-of-way permits, plan checking final maps and improvement plans, etc. The staff should continue to be located in the City's permit center, but report to the manager for the Engineering and Construction Department.

Overall, the proposed plan of organization for the Agency is designed to enhance and clarify accountability, balance managerial workload, and enhance the administrative and analytical support for the Public Works Director.

**Recommendation #281: The responsibility for managing all of the City's buildings should be consolidated with the Facilities Manager.**

**Recommendation #282: The responsibility for managing the urban forest, parks, medians, and vegetation management should be consolidated with a Parks Manager. This would be a new classification for the existing Building Services Manager in the existing Parks and Building Division.**

**Recommendation #283: The responsibility for management of streets and electrical services should be consolidated with a Public Works Operations Manager. This manager would be reclassified from an Electrical Services Manager.**

**Recommendation #284: The responsibility for volunteer management for the Agency should be consolidated in the Facilities and Environment Department. The Clean Community Supervisor position should assume overall responsibility for the management of the volunteer program for the Agency as a whole.**

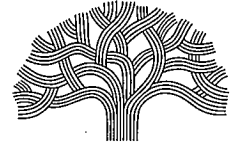
**Recommendation #285: The responsibility for electrical engineering and for architectural services should be transferred to the Engineering and Construction Department / CEDA.**



**Recommendation #286:** The Engineering and Construction Department should be transferred from the Community and Economic Development Agency to the Agency.

**Recommendation #287:** The engineering staff assigned to Building Services for the purposes of development engineering should be assigned to the Engineering and Construction Department. The staff should continue to be located in the City's permit center, but report to the manager for the Engineering and Construction Department.

# CITY OF OAKLAND



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April 13, 2009

Honorable Courtney Ruby  
City Auditor  
One Frank Ogawa Plaza, 4<sup>th</sup> Floor  
Oakland, California 94612

Dear Ms Ruby,

This letter is in response to the "Performance Audit of the Public Works Agency" prepared by the Matrix Consulting Group for the Office of the City Auditor.

This audit report exceeds 400 pages with over 280 recommendations. I have asked the Public Works Agency and the Department of Engineering & Construction (DEC) in the Community and Economic Development Agency to review this document and prepare responses. Their responses are attached.

Based on the limited time given for formal responses, priority has been given to the following: 1) comments on those recommendations with which staff has disagreement; 2) comments on those recommendations with which staff either agrees with or does not object to, but feels the need to clarify.

It is important to note that staff disagrees with less than 20 percent of the recommendations. Some recommendations can be achieved quickly at little or no cost. Others will involve investment in planning, negotiating, equipment and/or personnel. Many recommendations come with a high price tag.

The Public Works Agency and DEC embrace this audit in the spirit of continuous improvement, collaboration and transparency. Both groups are committed to implementing the recommendations where appropriate and subject to available resources.

Sincerely,

Dan Lindheim  
City Administrator

# **CITY OF OAKLAND PUBLIC WORKS AGENCY**

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*Response to A Performance Audit  
Conducted by the Office of the City Auditor*

**April 3, 2009**

## Context for the Performance Audit

The Public Works Agency (PWA) Management believes it is important for the reader of the *Performance Audit of the Public Works Agency* to have some background on the organization to provide some context to audit recommendations. PWA is committed to continuous improvement, and as such, has embraced this audit as another tool to help the Agency continue to improve through documenting where the Agency is today and what the Agency needs to do to stay on the path of continuous improvement.

In introducing the report, Matrix Consulting Group (MCG) opens with the statement (pg 2): “[the] results of the analysis are intended to provide a ‘snapshot’ of where the Agency is today, and from this place to define a long-term vision of where the Agency needs to go to be an effective, efficient, progressive, and modern public works organization.” PWA embraces the mission of this audit but feels it is important to have some historical context to frame MCG’s “snapshot-in-time” assessment by providing a trajectory of the path the Agency is on.

PWA is a value-based organization that is guided by seven (7) strategic initiatives:

- Focus on relationships with our customer and each other
- Focus on customer service and satisfaction
- Improve the Agency’s image and visibility
- Nurture and enhance opportunities for volunteerism
- Promote a culture of safe practices
- Grow our own: develop staff and promote from within
- Commit to continuous learning and improvement

### Improved Management Protocol

In 2004, when the current executive and management teams were put in place, basic management protocols (standard operating procedures, policies & procedures manuals, etc.) either did not exist or were in dire need of updating across the Agency’s divisions.

Case in point, when Park and Tree Maintenance joined the Agency after a 2004 re-organization, it was not operating at full capacity. With 32% of its positions unfilled, thirteen of the vacancies were due to worker’s compensation claims, including several that were open for several years. With PWA’s persistence in getting positions filled and best practices for managing worker’s compensation claims, today there are only three vacant positions (3% of the total positions) and five workers’ compensation cases in the Park & Tree Maintenance area. Four of the five workers’ compensation cases are working in a Transitional Duty capacity, which is a best management practice.

Prior to joining PWA, Park Maintenance did not have a strong, route-driven schedule. Thus, it operated in a primarily reactive fashion. Under PWA, the Park Maintenance Division implemented a geographic-based, “hub system” of park maintenance deployment that is credited with helping Park Maintenance score higher in every category in the 2007 independent parks assessment conducted by the Oakland Parks Coalition.

#### APWA Accreditation

In an effort to improve continuously, PWA committed itself to a 2-year process to become accredited by the American Public Works Association (APWA). The accreditation process required PWA to document and/or update many of the Agency’s practices, resulting in many new standard operating procedures (SOPs). Furthermore, PWA was tasked to formally verify compliance with some 395 recommended practices as set forth in the *APWA Public Works Management Practices Manual*. On August 15, 2006, PWA received the distinction of being designated as an APWA Accredited Agency, becoming only the 3<sup>rd</sup> agency in California and 35<sup>th</sup> in the nation to be awarded accreditation.

#### Customer Service

In 2004, the Agency promoted itself through an 8 ½” by 11” brochure that featured the Agency mission statement, an organization chart, and 34 contact numbers to various Agency and City services. More recently, Public Works established a PWA Call Center to advance the Agency’s Customer Service and Satisfaction initiative. The PWA Call Center is a one number, one-stop resource where Oakland constituents can call with public works-related requests. The one telephone number (510-615-5566), one-stop resource is a paradigm shift where individuals (customers) are not left to figure out where or what number to call with their service requests or inquiries. Call Center customers are also provided a tracking number should they wish to call back for status updates. Lastly, the PWA Call Center utilizes a call tracking software that offers basic reporting functionalities and thus serves as a rudimentary accountability tool as well.

#### Work/Maintenance Management System

As recent as January 2009, the vast majority of Public Works data is captured on antiquated, 1950’s style, 3” x 5” cards or in 8 ½” x 11” files. Such outmoded records management systems are unwieldy and ill-suited for generating management reports needed to facilitate supervisors’ and managers’ decision-making. It was this pressing need for a modern management information system that led the Agency to pursue a work/maintenance management system suitable for the 21 century. Through an RFP process, PWA selected CityWorks as its enterprise work/maintenance management system. CityWorks is presently being rolled out Agency-wide.

*Timing of Performance Audit*

With the Agency's commitment to continuous improvement and the deployment of a modern work/maintenance management system, the timing of a performance audit could not be better. PWA has embraced this performance audit in the spirit of continuous improvement, collaboration and transparency and believes it will help the Agency on its trajectory of becoming an even more efficient, effective, progressive and modern public works organization.

## Response to the Performance Audit – General Comments

PWA Management also believes it is important to the reader of this audit to understand the significance of what this audit and its recommendations mean or imply in their aggregate, and what it does not capture. It is especially important for the reader to understand what the Agency Management responses mean or imply in their aggregate and what was left unsaid – mainly due to the limitations of time.

The audit report is a substantial document, with over 400 pages and more than 280 recommendations. With the time the Agency had to respond, a decision was made to respond to those recommendations we disagreed with as a first priority. The next priority was to respond to those recommendations we agree with or did not object to, but had clarifying comments to make such as stating we were already working on that item or that additional resources would be required to implement the recommendation, for example. It is important to note that PWA Management disagreed with less than 20% of the recommendations in this audit report.

The audit report is also compartmentalized into five focus areas: management accountability, asset management, maintenance management, financial management and organizational structure and staffing. Within these audit focus areas, the Agency's programs are reviewed and assessed. It is important to note that in order to gain a complete picture of a particular Agency program area such as Tree Services, for example, one would have to read the entire audit, culling each section for discussions on Tree Services in order to get a complete assessment of this particular program area.

### Enhanced Administrative & Management Protocols

Similarly, there are certain types of recommendations that are made throughout the audit report that are very good recommendations and management best practices, and that singularly seem easy to implement without a significant impact to staffing resources. However, taken in the aggregate, a different picture emerges. The following example is illustrative:

Plans recommended	16
Planning processes recommended	15
New management reports recommended	10
New policies or updates	20
Studies	2
Audits/assessments/monitoring	5

Inspections/inventories	7
New board & councils	4
Trainings	5
<b>Total</b>	<b>84</b>

While PWA agrees with the vast majority, if not all of these recommendations, they constitute a full 30% of the total recommendations and could not be implemented without a comparable increase in administrative and management analyst support. To be expedient, the Agency elected not to respond to each of these recommendations individually, and is opting instead to address them here collectively.

*Additional Funding Recommended*

The audit makes recommendations regarding the level of additional funding that should be appropriated on an annual basis to adequately preserve and renew some of the City's assets. While these figures are presented individually throughout the report, it is important to summarize here:

Category	Annual Amount	Comments
Street Resurfacing	\$30 Million	This represents the minimum amount to keep the pavement condition index at the current level.
Slurry Sealing	\$8.75 Million	To keep streets in good or better condition from deteriorating
Fleet Replacement	\$8.5 Million	This represents the minimum amount. The range is \$8.5 Mil to \$10.5 Mil
Sanitary Sewer Rehab or Replacement	\$7.5 Million	This represents the minimum amount of capital funding.
Traffic Signal Controller Replacement	\$0.5 Million	This represents a minimum amount of capital funding.
<b>Total Recommended Funding</b>	<b>\$55.25 Million</b>	



While the audit recommended the Agency develop long-term plans for the renewal of the rest of the City's assets without specifying an actual amount for the Agency to target, PWA is offering the following estimates based on its knowledge of these assets to serve as reference for the readers:

Category	Annual Amount	Comments
Storm Drainage System	\$13 Million	This allocates \$8 Mil for capital and \$5 Mil for maintenance
Sidewalk Repair	\$4 Million	This takes \$28 Mil in tree-related damage and repairs it over a 7 year cycle
Facilities	\$3.2 Million	This addresses the most pressing deferred maintenance over 5 years
Park Capital Renewal	Not Available	An assessment and capital plan need to be developed
Traffic Signal Replacement	Not Available	An assessment and capital plan need to be developed
<b>Total Known Funding Needs</b>	<b>\$20.2 Million</b>	

While this does not cover all the categories of City assets (such as Parks and Traffic Signals), nor completely address a particular category's needs (facilities does not include capital replacement of buildings beyond their service life), it does nonetheless point to a significant minimum annual funding need of \$75.45 Million, just to address the City's most pressing deferred maintenance needs.

#### Benchmarks & Industry Standards

The audit uses benchmarks and industry standards for some of its recommendations, and for others such as illegal dumping, graffiti abatement and weed abatement, for example, it does not. Perhaps none exists for some of these functional areas; nonetheless, this should be clearly noted in the audit report. Furthermore, where benchmarks and industry standards exist, there are

challenges in ensuring comparisons are meaningful because there are usually several variables involved.

Take preventative maintenance for streets as an example. Crack sealing is a preventative maintenance practice that is integral to a good street asset management plan. However, it assumes a street asset that is in good condition. If your asset is in a deteriorated condition, you are more likely to be focusing on asset failures such as pothole and base repairs, and not have enough time to address preventative maintenance activities like crack sealing. This holds true for other program areas with assets beyond their service life. The audit fails to factor in the condition of an asset in applying industry benchmarks where appropriate.

Another variable with benchmarks, particularly those involving productivity, is the condition of the equipment and fleet. While the audit addresses the issue that the City has an over-aged fleet, recommends a substantial increase (\$8.5 Mil total) to the fleet replacement budget, and acknowledges the increased demand this places on the Fleet staff, it does not address the impact of an over-aged fleet on program maintenance staff's productivity due to the compartmentalized nature of the report.

For example, our sewer power rodders, while not yet exceeding their service life, they are definitely toward the end of it. Consequently, sewer maintenance is reporting increased equipment failures that directly affect the crews' productivity. This also holds true for other program areas that suffer over-aged equipment within their equipment portfolio. The audit makes recommendations about various equipment changes designed to enhance productivity of our maintenance operations staff but fails to note the impact of the existing over-aged equipment on our staff's productivity.

#### Staffing Changes

The audit recommends significant staffing changes, through either proposed reductions, additions or reorganizations. The audit proposes to eliminate 100 position (through attrition) by either outsourcing the function, eliminating the program they support, purchasing additional equipment to increase efficiencies and thus reducing the required staffing levels, converting full time positions to part-time positions, or by making findings that staffing exceeds the workload based on benchmarks or industry standards. Some of the recommendations disregard the City Charter prohibiting the Agency from contracting out work that City staff currently performs. Additionally, PWA Management is concerned that where staff reduction recommendations were proposed for asset maintenance programs based on 'industry benchmarks', no correction was factored in to account for the condition of the assets, as discussed previously.

The audit also recommends the addition of 34 positions. These are either to augment understaffed program areas (such as traffic signals maintenance, sign maintenance, traffic painting, and skilled building maintenance staff, for example) or to better help the Agency manage and analyze the data its work should generate. Towards this end, additional budget analyst staff, new GIS support staff (Spatial Analysts), along with the return of IT support staff that were recently centralized in the City's Department of Information Technology (DIT) are recommended. Again, PWA Management is concerned that the recommendation for additional maintenance staff associated with deteriorating assets be confirmed as adequate if the benchmark data used was not modified to account for the condition of the assets, as previously discussed.

*Functional Areas Not Covered*

Finally, while it highlighted some examples of the Agency's strengths, the performance audit "by its nature, focus[ed] on opportunities for improvement." Given this, the Agency will take as a compliment the absence of any discussion about the operations of the Environmental Services Division (ESD) or the Agency's role as an Emergency First Responder. The Agency is proud of the role ESD's work has played in helping secure a Top Ten Green City designation by all of the organizations that rate green cities and is equally proud of its work around emergency preparedness and response.

## Response to Select Audit Recommendations

### MANAGEMENT ACCOUNTABILITY

#### **Recommendation #3 – The Agency should revise its mission statement.**

As part of the FY 2009-11 budget development process, PWA has submitted a mission statement as follows:

*The Public Works Agency maintains Oakland's physical and environmental infrastructure for the residents, businesses and visitors of the city, making it a sustainable and desirable place to live, work and visit. Our services include the maintenance of streets, urban forest, sidewalks and pathways, parks, creeks, sewers and storm drains, buildings and structures, vehicles and equipment, street lights and traffic signals. In addition, we manage community volunteer programs for beautification and clean-up projects, residential garbage and recycling, graffiti abatement and facilitate environmental compliance.*

*Employees in the Public Works Agency strive to provide top quality, professional, effective, and timely services. We do this by focusing on relationships with ourselves and our customers, and on customer service and satisfaction, thus improving our image and maintaining the community's trust.*

PWA believes that this mission statement meets the MCG criteria of a mission statement. However, PWA also believes in and commits to making improvements on a continual basis.

#### **Recommendation #4 – The Agency should revise its vision statement.**

As part of PWA's Self-Assessment and Accreditation Process with APWA (American Public Works Association) received in August 2006, PWA developed a vision statement as follows:

*The Public Works Agency strives to be a reputable and recognized leader in providing services and a source of pride within the community.*

PWA believes that this is a sound vision statement. However, PWA also believes in and commits to making improvements on a continual basis.

#### **Recommendation #6 – The Agency should enhance its values statement.**

As part of the FY 2009-11 budget development process, PWA has submitted an updated values statement as follows:

The Public Works Agency is committed to the following values as we conduct our business:

- We value striving to provide top quality, professional, effective and timely services to residents, businesses, visitors and internal customers.
- We value respectful and constructive relationships with each other and our customers.
- We value customer service and satisfaction.
- We value improving our image and maintaining the community's trust.
- We value accountable employees who exhibit integrity, courtesy, dedication, respect and teamwork in all interactions with the each other, the public and elected officials.
- We value a safe work environment and safe work practices.
- We value continuous learning from our experiences, subject-matter experts and professional organizations.
- We value our employee's professional growth and promoting from within the organization.
- We value the taxpayer, property owner, resident, visitor, community-based organization, external agency and volunteer as our partners in success.
- We value our status as a nationally accredited agency.

PWA appreciates that MCG thinks these are "good value statements." With respect to MCG's suggestions for enhancements, PWA also believes in and commits to making improvements on a continual basis.

**Recommendation #11 – The Agency should develop a communication plan to guide communication with the media, residents, businesses, and Agency employees.**

PWA agrees that a communication plan should be developed and implemented. This work requires resources.

**Recommendation #16 – The Human Resources Section of the Agency should develop a training course regarding the administration of the City's Attendance Management Policy.**

PWA agrees that on-going training for managers and supervisors regarding managing employees relative to the City's Attendance Management Policy is necessary. However, this work requires additional resources. The Human Resources Section of the Agency is currently limited to two (2) professional human resource employees for 60 managers and supervisors and over 650 employees. MCG sites the benchmark for HR staffing is "one (1) human resources position for

each seventy (70) positions in local government (page 389). For the Agency, this would indicate the need for approximately nine (9) human resources positions.”

**Recommendation #18 – The Human Resources Section of the Agency should develop an Attendance Management Guide.**

**Recommendation #19 – The Human Resources Section of the Agency should develop a policy that clarifies the responsibility of managers and supervisors of the Agency for the implementation of the City’s Attendance Management policy.**

PWA agrees that implementing these recommendations will be constructive and beneficial after the City’s Attendance Management policy is updated (see page 76 – The City should update its attendance policy).

**Recommendation #22 – The City should update its attendance policy.**

The Office of Personnel (Finance and Management Agency) governs the City’s Attendance Management policy. PWA concurs that the 1981 document that has been in effect to address attendance issues should be updated.

**Recommendation #25 – The Agency should adopt a comprehensive policy governing oversight of overtime.**

MCG concludes that PWA’s overtime usage in FY 2007-08 amounted to 5.7% of the regular hours worked by PWA employees the same year. The benchmark referenced is 5%. Though the variance is slight, MCG fails to distinguish the overtime usage types – emergency call out, reimbursed project-based overtime, and scheduled overtime. In January 2008, PWA did issue a directive requiring Assistant Directors review and approve all scheduled overtime. PWA recommends that Oracle payroll codes be created to capture the different overtime usage types.

Also, the Recommended Overtime and Compensatory Time Reports listed on pages 82 – 84 appear to be excessive relative to the actual use of overtime in PWA. While many of the reports listed would provide good and useful information, PWA questions the effort required to develop and maintain these reports compared to the benefit of having them.

**Recommendation #26 – Training should be provided to employees in supervisory and managerial positions regarding the expectations placed on them to manage overtime/compensatory time. Appropriate resources such as reports and labor contracts should be provided to supervisors to assist them in this obligation.**

PWA agrees that on-going training, analysis and useful reports should be provided to managers and supervisors regarding overtime/compensatory time management. However, current resources are limited, with two (2) professional human resource employees for 60 managers and

supervisors and over 650 employees. MCG sites the benchmark for HR staffing is “one (1) human resources position for each seventy (70) positions in local government (page 389). For the Agency, this would indicate the need for approximately nine (9) human resources positions.” This work requires additional resources.

**Recommendation #28 – Each Section in the Agency should develop a comprehensive, written policies and procedures manual.**

**Recommendation #29 – Each Section manager should be assigned responsibility for the development of a comprehensive, written policies and procedures manual. The policies and procedures manual should be published to the Agency intranet.**

PWA succeeded in developing a Personnel Policies and Procedures Manual after a multi-year effort working with the Office of Personnel (Finance and Management Agency). This document is posted on the PWA Intranet site.

In addition, PWA has developed Agency Standards (internal policies) and various Standard Operating Procedures (SOPs) that are also housed on the PWA Intranet site.

PWA considers these policies and procedures living documents that are continuously improved upon or modified as the needs arise. The documents are intentionally posted on the PWA Intranet not only for PWA employees to access but for all City employees, if they so desire.

**Page 95 – Reduces Fuel Costs. Idle Time Reduction: By monitoring the length of time an employee is leaving the engine running while stopped, program managers can correct this behavior and reduce fuel consumption. Large vehicles consume an estimated 0.82 gallons of fuel for every hour of idle time, while light duty vehicles consume an estimated 0.5 gallons per hour.**

PWA agrees. The Agency is in the process of developing an Anti-Idling Policy for off road diesel vehicles and for all City fleet.

**Recommendation #31 – The Administrative Services Department should work with managers and supervisors in those sections in which global positioning systems are deployed to develop management reporting systems utilizing the data generated by the global positioning systems.**

PWA can carry out this recommendation contingent upon the implementation of the recommendation on page 391 – The three positions that were transferred to the Information Systems Technology Department in Fiscal Year 2007-08 from the Agency should be transferred back to the Agency. An alternative would be for the Department of Information Technology (DIT) to carry out this recommendation.

**Recommendation #33 – The Agency should conduct a systematic evaluation of its services to identify its core services.**

The MCG recommendation, as elaborated upon on pages 101-102, will likely require the commissioning of a formal, professional survey of Oakland. PWA believes that the survey would be appropriately developed in concert with the Mayor and City Council as the City's policy makers. PWA could constructively use the information gathered from the survey to conduct a core services evaluation, as recommended.

ASSET MANAGEMENT

**Recommendation #38 – The City's Budget Office should modify the designated fund managers to assign responsibility for fund management to those managers responsible for managing the asset.**

Currently, the Budget Office has assigned to PWA fund management responsibility of 22 funds. PWA elected to centralize the fund manager responsibility with the PWA Fiscal Services Manager because it is that individual who best understands the City's budgetary systems and their peculiarities. Within PWA, each fund also has a designated fund "subject expert" that is usually a division level manager, who provides specific guidance and information to the PWA Fiscal Services Manager as needed.

Irrespective of who in PWA is the designated fund manager, the more important issue with the fund management responsibility is that the fund manager has complete authority, backed by the Budget Office and City Administrator, to manage the fund(s). This would include the authority to determine and remove positions that are not appropriately budgeted in the fund(s) based on documented, intended uses of the fund(s), and through an evaluation of core services provided relative to the fund(s).

**Recommendation #44 – The Infrastructure and Operations Department should prepare a long-term plan for the implementation of the Storm Drainage Master Plan.**

CEDA/DEC has been the lead in implementing the Storm Drainage Master Plan since its inception and are the lead in developing the City's Capital Improvement Program.

**Recommendation #45 – The Infrastructure and Operations Department should develop a work plan to address the small to medium sized projects within the high priority capital plan of the Storm Drainage Master Plan utilizing the staff of the Drainage Section.**

MCG's recommendation that "at current staffing levels, the Drainage Section could address many of the high priority capital repairs identified in Appendix O of the Storm Drainage Master Plan." This contradicts other recommendations of eliminating staff (see page 342). Some of the



recommended repairs are currently being accomplished and are necessary because of zero capital improvement project dollars.

All of these activities are necessary for the life and maintenance of our aged infrastructure. The Storm Drain Master Plan was developed to address flooding complaints and possible property damage from flooding.

The Storm Drain Section manages repair lists for storm inlets and pipe repairs. Funding needs to be identified to implement the capital improvement program for the Storm Drain Master Plan. Storm Drainage Section staff addresses small to medium projects as they become priorities.

**Recommendation #47 – The Infrastructure and Operations Department should prepare a long-term plan for the repair and rehabilitation of the City's streets including alternative sources of funding and strategies that would enhance the capacity of the staff in the Streets and Sidewalks Section to repair and rehabilitate streets.**

The responsibility for Street & Sidewalks' program management transferred to the Engineering Design Division in an earlier re-organization (2004). This division is now a part of CEDA/DEC as the result of the most recent reorganization in 2007. CEDA and the Public Works Agency meet on a bi-monthly basis to coordinate our efforts. We understand CEDA is preparing a 5 and 10-year plan for their CIP budgets, and PWA expects to work collaboratively in preparing a long-term plan for the repair of our City's streets.

**Recommendation #48 – The City should increase the annual capital outlay funding for the slurry seal of the City's streets to fund not less than \$8.75 million annually.**

PWA agrees with this recommendation. The Agency will continue to work with CEDA/DEC staff in developing a plan and advocating for additional resources for the rehabilitation of our City streets.

**Recommendation #49 – The Equipment Services Division should prepare a five-year equipment replacement plan for the review of the operating departments and the Budget Office.**

**Recommendation #50 – The Agency should identify alternative sources of funding to meet equipment replacement needs.**

**Recommendation #51 – The City should increase its funding for the replacement of the equipment fleet by \$5.5 million annually.**

The Equipment Services Division (ESD) currently has a ten-year replacement plan that is six years behind schedule in replacing vehicles and equipment. This schedule is reviewed and modified when evaluating vehicles and equipment for replacement. PWA agrees that alternative

funding sources for vehicle/equipment replacement should be sought. The Agency had done this recently in identifying Master Lease interest income and Measure M funds for equipment replacement. However, the critical recommendation is for the City to increase replacement funding by \$5.5 million to \$8.5 million annually to keep current with operating departments' needs and to contain O & M costs.

**Recommendation #52 – The Agency should participate with CEDA in the development of the urban forest master plan and be assigned responsibility for its implementation.**

PWA agrees. An urban forest management plan is a long-range plan that includes the many varied aspects of managing the urban forest, such as: planning and development, watershed preservation, fuel reduction, park maintenance and street tree maintenance. Meetings were held with staff from CEDA as well as the Fire Department, Parks Services and the Watershed Program to discuss the critical components of an Urban Forest Management Plan. Each division has unique needs that are affected by trees.

The California Department of Forestry and Fire Protection (CDF) issues grants to municipalities for generating urban forestry management plans. Oakland has been approved to receive a grant to inventory trees not included in the sidewalk survey. Once the tree inventory has been completed, CDF has expressed an interest in funding another grant to develop a management plan. Identifying matching funds will be required.

This plan will address planting goals, maintenance of trees growing on the right-of-way and policies that impact both public and private property. Along with designing a plan for tree planting (publicly and privately), encouraging removal of inappropriate trees is an acceptable part of a well designed plan.

**Recommendation #58 – The Agency should meet with the staff of the Engineering and Construction Department to revise the sidewalk prioritization plan and develop a balanced approach that includes the deployment of the staff resources within the Streets and Sidewalks Section.**

PWA agrees with this recommendation.

**Recommendation #62 – The Agency should initially set an objective of eliminating two hundred ten (210) vehicles from the City's fleet.**

PWA disagrees with this recommendation. MCG's audit of PWA began in June 2008, at which it was given a snapshot of the fleet. Since MCG's analysis, ESD has reduced the fleet size by more than 50 units. Furthermore, MCG acknowledges that analyzing fleet utilization is "just the first step in identifying underutilized vehicles". Rightsizing the fleet is a cooperative, collaborative process involving both Equipment Services Division management and staff, and operating departments. ESD will continue to work with user departments through the Fleet

Utilization Management Committee to develop recommendations for elimination of underutilized vehicles.

#### MAINTENANCE MANAGEMENT

**Recommendation #69 – The Agency should define the levels of service that the Agency can provide in the maintenance and repair of assets entrusted to the Agency.**

The Azteca Cityworks maintenance management system is the repository of the data needed to define the levels of service for the maintenance and repair of assets. Cityworks has been implemented as of March 2, 2009, for Tree Services, East Oakland Park Maintenance, Drainage, Illegal Dumping and the PWA Call Center. It is anticipated that the remainder of infrastructure maintenance work units (streets and sidewalks, sewers, electrical and traffic maintenance, graffiti abatement, parks maintenance, and building maintenance) will start using Cityworks by the summer of 2009. It will require diligent data entry, quality control and on-going monitoring to ensure that accurate data is entered into Cityworks in order to gather the desired data.

**Recommendation #74 – The Agency should develop a formal written policy and procedure for the updating of the sanitary sewer and stormwater maps by field crews. The policy and procedure should require field crew to notify Agency GIS staff regarding discrepancies in infrastructure for updating of the appropriate data layers.**

PWA agrees with this recommendation. The Agency will develop, as a part of Cityworks' implementation, a formal SOP requiring field crews to document discrepancies in our infrastructure maps. GIS layers will be updated in collaboration with CEDA/DEC or DIT staff, where GIS expertise resides.

**Recommendation #75 – The Agency should develop computer/ hydraulic models for the City's sanitary sewer stormwater networks.**

PWA does not have any in-house expertise to develop these recommended models; however, CEDA/DEC staff does and they are the lead in developing, maintaining, and updating the computer hydraulic models as necessary.

**Recommendation #77 – The Infrastructure and Operations Department should prepare a policy study for the consideration of the City Council regarding the level of service for tree trimming.**

Trees that were approved and/or planted by the City are designated "Official". All other trees growing on the right of way are "Unofficial". The City accepts full responsibility for the maintenance of Official trees and the repair of all hardscape damage caused by Official trees. Routine maintenance (aesthetic pruning) and repair of hardscape damage caused by unofficial trees is the property owner's responsibility. Unofficial trees are pruned or removed by City tree

crews to abate hazards only. These trees were planted by others or grew naturally. The City provides the necessary service of abating hazards to reduce risk posed by these trees.

The number of unofficial trees growing on the public right-of-way is unknown. To determine the right-of-way boundary and inventory those trees on every property would be costly. Accepting full maintenance responsibility would require a significant increase in tree maintenance funding.

A policy study is unnecessary. The established tree planting policy has been in effect since being passed by the City Council as Ordinance #188 on April 21, 1932. The Street Tree Plan and its policies were developed by a City Council appointed Tree Policy Task Force and adopted by a City Council resolution on January 27, 1998. Funding is insufficient to accept the maintenance of all trees growing on the public right-of-way along with the corresponding potential liability.

**Recommendation #78 – The Infrastructure and Operations Department should prepare a tree planting plan to address the vacant tree wells identified in the *Citywide Sidewalk / ADA inventory*, a tree planting policy, tree planting specifications, an objective for canopy coverage, and policies for species and age diversity of the urban forest.**

PWA does not object to this recommendation; in fact, much of the recommendations already exist or are currently being pursued.

The citywide sidewalk/ADA inventory determined that over 38,000 trees are growing in sidewalk locations. The survey did not include information about trees growing in medians or parks. A grant application has been approved by Cal Fire (CDF) to fund having these trees inventoried. Currently, the funding is frozen at the state level.

Having these trees inventoried will provide a more accurate accounting of City trees. The Public Works Agency has developed a plan to have the existing trees' designation (Official or Unofficial) added to the inventory database. The 4,000+ existing vacant tree wells have not been determined to meet the City's standards for tree planting. Many may be unacceptable for having a City tree be planted.

Street tree planting in Oakland presents a couple unique challenges. The Mediterranean climate, with no summer rainfall, requires that all planted trees be watered between April and November for three years. Therefore, either the property owner accepts this responsibility or the tree is truck watered. Some Oakland property owners have expressed that they do not want a street tree planted. Their decision is based on issues ranging from an unwillingness to rake leaves to fear of an increase in crime. This may partially account for why tree populations are lower in certain council districts.

The Street Tree Plan contains policies for determining approved tree planting locations, nursery specifications of purchased trees and a tree species list. This document dictates where trees may be planted, which species are planted and what structure they are required to have. Trees have been planted at the request of property owners who are willing to water them or as part of streetscape projects or park renovations. To pursue a more proactive approach to tree planting would require additional staff resources which are not currently available.

**Recommendation #79 – The Infrastructure and Operations Department should acquire CITYgreen software from American Forests, and work with the Information Technology Department to deploy the software, integrate satellite imagery, and document the tree canopy coverage for the City and each Council District.**

PWA does not object to the recommendation, but rather questions the effort required to implement it compared with the benefit derived from it.

Street trees represent only a fraction of the “canopy coverage” of the urban forest. Privately-owned land represents a greater area where trees can be planted and become part of the urban forest. A tree planting plan should be prepared in conjunction with an Urban Forest Management Plan.

Canopy coverage is only one statistic and should not be the defining determinant in developing a tree planting plan. In many areas of the Oakland hills, inappropriate species of trees in poor locations should be removed. Smaller tree species are selected to grow under high voltage power lines to not interfere with the utilities and require repeated topping. Those location-appropriate trees will have smaller canopies. Therefore, the overall canopy coverage will be a smaller percentage but include better trees overall.

**Recommendation #80 – Reduce the crew size utilized for responding to tree maintenance service requests to two positions.**

PWA agrees with this recommendation with some stipulations.

Implementing this recommendation would require an aerial lift truck to be purchased. Additionally, consideration should be given to creating a Tree Maintenance Leader classification similar to the other PWA maintenance divisions. A Tree Maintenance Leader would be assigned to each crew and be responsible for on-site decisions and held accountable for the operation.

A two person crew to perform block-by-block proactive pruning is not the optimal size. Streets with large numbers of trees should employ a larger crew to complete the work more efficiently. Using multiple aerial lifts and tree climbers would increase productivity. The aerials and climbers can “leapfrog” down the block and a clean-up crew can handle the brush chipping

operation. That way, the aerial lift truck is not stationary while the brush is being chipped into the same truck.

**Recommendation #81 – The City should provide contractual funding on an annual basis for the proactive tree trimming of 7,350 park and street trees annually.**

PWA disagrees with the estimated cost to implement this recommendation.

The recent tree pruning contracts were paid by one-time funds generated by unexpected real estate transfer tax revenues in fiscal year 2006. Five contracts were issued. 1,156 street and park trees were pruned. Considering the additional costs of writing and monitoring the contracts, the average pruning cost was \$510 per tree. A review of the Tree Services Division's costs determined that the crews' pruning costs were comparable.

If the goal of pruning 7,350 trees by an outside contract was desired, the City Council would need to appropriate more than the amount indicated in the audit report. The average per tree cost to prune 7,350 trees for \$440K would be \$60 per tree. This figure is unrealistically low. An additional Tree Supervisor I would be needed to write and oversee such large pruning contracts. Approximately 30 trees per day would be pruned over the course of a one year contract.

**Recommendation #82 – The Tree Maintenance Section should enhance its working relationship with non-profit tree conservation organizations and leverage the ability of the non-profit tree organizations to obtain grant funding for planting of street trees.**

PWA agrees with this recommendation. The Tree Services Division has met with tree planting groups to discuss the possibility of having tree planting be performed by others who demonstrate the ability to meet the City's standards. Such groups should be able to function autonomously and may also be able to assume some watering responsibilities.

Larger California cities such as Los Angeles, Sacramento and San Francisco have non-profit groups that manage street tree planting. These can serve as models for similar groups in Oakland.

**Recommendation #84 – The Equipment Services Division should expand the use of a swing shift for the automotive shop and the heavy equipment shop.**

**Recommendation #85 – Establish a classification of Lead Heavy Equipment Mechanic and Lead Automotive Mechanic. Reclassify one Heavy Equipment Mechanic and two Automotive Mechanic positions to lead mechanic. Promote three mechanics to these lead mechanic positions.**

**Recommendation #86 – Assign two Equipment Parts Specialists and six to eight Mechanics to the swing shift at the Automotive Shop and the Heavy Equipment Shop.**

PWA agrees with the following stipulations.

As noted, this recommendation will not result in any cost savings; furthermore, a minimum \$43,000 cost increase is anticipated due to establishing two new classifications for lead heavy equipment mechanic and lead automotive equipment mechanic, and a \$50,000 cost increase is projected for shift differential payments for swing shift workers.

Establishing a lead mechanic position is estimated by MCG to add a fully burdened cost of \$3.445 per hour to the Heavy Equipment and Automotive Equipment Mechanic positions (\$1.995 per hour plus fringe, benefits and overheads). This rate added to the top step will close the 5% salary gap required between that classification and the one that supervises it, which would require a readjustment of the supervisory classifications.

Furthermore, MCG recommends greater levels of accountability for Equipment and Heavy Equipment Supervisors in shop oversight. However, establishing additional work shifts to be headed by lead positions that have neither supervisory authority nor responsibility would require supervisors to be accountable for workers over which they do not have direct supervision.

Instead of lead positions, ESD would recommend authorization for one additional Heavy Equipment Supervisor position that would be responsible for night shift operations. This would eliminate the necessity of creating lead positions, and would ensure full accountability for and direct supervision of all night shift activities.

**Recommendation #87 – Fleet Focus FA should be utilized to e-mail operating departments when their vehicles are due for preventive maintenance and to enable the Equipment Services Division and Equipment Supervisors and Heavy Equipment Supervisors to identify equipment overdue for preventive maintenance.**

PWA agrees with this recommendation. The City's current version of FA, 5.6.4 does not allow e-mailing from FASuite; version 6.0 will enable e-mailing preventive maintenance scheduled to customers and will be instituted with upgrade, scheduled to be completed by end of April 2009.

**Recommendation #88 – The Equipment Services Division should work with the departments to develop a weekly preventive maintenance schedule that schedules preventive maintenance evenly across the month and assigns each vehicle to a particular week of the month**

**Recommendation #89 – Specify the weekly schedule for each piece of equipment in Fleet Focus FA within the table codes.**

Staff is currently refining preventive maintenance schedules for FA upgrade and will employ FA to develop weekly preventive maintenance schedules.



PMs completed were not being automatically updated in the current version of FASuite (5.6.4) when work orders for PM were started with service orders (which was the way Maximus taught the technicians to begin both PM and repair work orders). With the upgrade to version 6.0, the glitch that prevented the updates has been repaired.

**Recommendation #90 – Equipment Supervisors and Heavy Equipment Supervisors should be held accountable for implementation and supervision of a preventive maintenance scheduling system.**

PWA agrees with this recommendation; however, the following should be noted:

Performance objective has been added to supervisors' performance plans requiring weekly evaluation of PM schedules;

PM schedules are currently being updated for inclusion in Version 6.0 upgrade (scheduled for w/o March 30, 2009).

**Recommendation #91 – The Equipment Services Division should implement a “quick lube” concept only for light and medium equipment, excluding emergency response vehicles.**

The Equipment Services Division currently provides a “quick lube” service for emergency response police and fire sedans in order to minimize number of out-of-service emergency response vehicles. The Quick lube concept may be expanded once maintenance and repair burden is reduced as new replacement vehicles are introduced into the fleet.

**Recommendation #92 – The Equipment Services Division should set an objective of an average of 125 working hours charged to repair orders per month per technician.**

**Recommendation #93 – The Fleet Supervisors should review the monthly direct-billed hours report to ensure accountability for all employees and report actual adherence to this objective to Equipment Services Superintendent and Equipment Services Manager on a monthly basis.**

PWA agrees with this recommendation.

**Recommendation #94 – Equipment Services Division should develop and implement a quality control policy.**

PWA agrees with this recommendation.

**Recommendation #95 – The role of Equipment Services Division staff assigned to the Hall of Justice should be modified to perform a higher proportion of maintenance and repair at**



**the Hall of Justice, reduce the need to transport vehicles to 7101 Edgewater Drive for these services and reduce downtime.**

**Recommendation #96 – The staff of the Police Department should check fluid levels in Police Department vehicles themselves as part of their pre-trip inspection of the vehicle they have been assigned.**

**Recommendation #97 – Establish two Lead Automotive Mechanics and promote two mechanics to these positions. Assign these two Lead Automotive Mechanics to the Division’s facility at the Hall of Justice.**

**Recommendation #98 - Construct an equipment maintenance and repair facility at the Hall of Justice.**

**Recommendation #99 – The Equipment Services Division staff assigned to the Hall of Justice should not work day, swing and night shifts, seven days per week. These staff should work a day and swing shift Monday through Friday.**

**Recommendation #100 – The Equipment Supervisor assigned to the Hall of Justice should be shifted to the 7101 Edgewater Drive facility to reduce the spans of control for the other two Equipment Supervisors assigned to that facility.**

PWA disagrees. A higher level of service by Automotive Equipment Service Workers (AESW) requires construction of a maintenance facility (estimated at \$400,000; one-time cost) plus on-going costs of \$24,000 annually to support newly created lead automotive equipment mechanic positions (unsupervised). PWA questions the estimate for the facility costs, which amounts to \$139/s.f.; we recommend this estimate be further refined. In addition to the added expense, MCG’s recommendation does not take into account the feasibility of constructing maintenance facility at HOJ is remote due to Caltrans reluctance to construct permanent facilities under an elevated freeway, which is where the current facility is located.

Automotive Equipment Service Workers (AESW) have been placed at the Hall of Justice for two purposes: 1) to assure that vehicles are ready and available by completing minor repairs without removing the vehicle from service, and 2) to evaluate vehicles daily for damage, mechanical issues, fluid levels and other critical factors. Given that many of the marked police vehicles are used 24 hours per day, 7 days per week, failure to check fluids for a day or two can cause engine failure. AESW’s focus is on the operability of the vehicle. Past experience with Oakland’s fleet, as well as information from other municipal police fleets has shown that pre and post inspections by Police Department staff generally consist of walk-around body damage assessments.

Furthermore, recommendation to promote two additional Automotive Equipment Mechanics, along with recommendation on page 196 to promote two Automotive Equipment Mechanics to

lead positions and shift three to four mechanics to the swing shift would result in more than 50% of the automotive mechanic staff working without direct supervision.

**Recommendation #101 – The Equipment Services Division should initiate training and training plans to increase the number of technicians with EVT and ASE certification.**

**Recommendation #102 – The proposed classification of Lead Mechanic should require ASE certification (or obtaining the certification within two years of appointment). The supervisory positions within the Equipment Services Section should require ASE certification (or obtaining the certification within two years of appointment).**

**Recommendation #103 – The City should consider providing financial incentives for EVT and ASE certifications.**

PWA agrees with these recommendations. Online training was established this quarter. The Equipment Services Division is currently outlining parameters for the online training program. Furthermore, the Equipment Services Division has proposed financial incentives for ASE certifications for mechanics and service workers during the budget development process since 2001.

**Recommendation #104 – The Equipment Services Division should explore the cost ramifications of participating in the fuel cooperative purchase with the County of Santa Clara and the cities of San Jose, Santa Cruz and Sunnyvale to determine whether it would reduce their unit prices for fuel.**

PWA agrees with this recommendation. Equipment Services is currently exploring cooperative purchase of fuel with the City and County of San Francisco and with regional demand pooling contract for fuel; however, San Jose fleet management confirmed this month that it is currently purchasing fuel via weekly spot bid, which is the same method used for purchasing fuel by the City.

**Recommendation #105 – The Agency should establish a Fleet Advisory Board to serve as a customer council for the Equipment Services Division.**

PWA agrees with this recommendation. Fleet Utilization Management Committee's size and scope can be expanded to serve as a customer council for the Equipment Services Division.

**Recommendation #106 – The Equipment Services Division should develop and adopt service level agreements with the major operating departments that it serves.**

PWA agrees with this recommendation.

**Recommendation #107 – The Equipment Services Division should warranty its maintenance and repair work.**

PWA Agrees. Such warranties should be an outgrowth of the service level agreement recommended above.

**Recommendation #108 – The Equipment Services Division should provide point of sale receipts for each transaction. The point of sale receipts should be summarized in monthly reports provided to each department.**

**Recommendation #109 – The Equipment Services Division manager should meet monthly with each department to review the monthly reports and discuss the basis and nature of the costs.**

**Recommendation #110 – Major customers should be provided with access to Fleet Focus F/A.**

PWA partially agrees with this recommendation.

Transaction detail for all PMs and repairs are available within the fleet management system. The Equipment Services Division disagrees that a POS receipt should be given to the driver of a vehicle at the conclusion of each transaction. Department managers, not individual drivers, are responsible for the costs of their portion of the fleet—summary information, with backup detail, should be presented monthly.

Equipment Services Division management is implementing monthly department coordinator meetings to review monthly reports and discuss issues/concerns with user departments.

With the upgraded FASuite rollout expected to be completed in April 2009, the Equipment Services Division will provide web access to major customers.

**Recommendation #112 – The crew size used for service calls and power rodding should be reduced to two persons; and the crew size used for construction and repair should be reduced to four persons supplemented by a backhoe operator when required.**

PWA disagrees with this recommendation. The crew size used for service calls throughout the City of Oakland for sewer related complaints should remain at 3 crew members. This is vital because the crew members have to investigate the complaint and troubleshoot the problem by checking sewer structures in street locations as well as easements. The three-man crews are also responsible for preventing raw sewage from getting into our storm inlets, waterways, and creeks. It takes all three crew members as first responders to contain and prevent sewage from entering any freshwater artery. Hand rodding sewer mains in street areas as well as easements are one of

the areas the crew members troubleshoot problems. This action alone takes 3 crew members to perform.

- The Power Rodder requires 3 crew members to operate and position the equipment safely. One crew member (the operator) is elevated on the equipment and away from the manhole where the machine is set up. The other 2 crew members work together with the operator, providing operator and traffic signaling and performing the structure inspection.
- Closed Circuit Television Video (CCTV) must have 3 crew members to operate and set up the equipment. One crew member must operate the computerized equipment while inside the CCTV Unit. The other 2 crew members would prepare and place the camera into the Sewer Main for pipeline inspection. Once the camera is in place, 1 crew member must remain to the rear of CCTV unit, taking instructions from the computer operator inside the CCTV unit while the other crew member inspects all sewer structures where the camera is conducting its video pipeline inspection.
- Due to CAL-OSHA regulations our crew size for street excavations must remain at 5 crew members, backhoe operator and truck driver included. There are several functions that take place while performing spot repairs in the street area involving sewer line replacement. It is essential that all safety devices be in place before excavation. Shoring jacks must be placed in the trench, and depending on the pipe size of the sewer main the pipe itself must be lowered manually into the trench to a crew member. In addition, emergency retrieval equipment must be at the work site in case of an emergency. In order to perform these functions safely there must be at least 5 crew members on all street excavations.

**Recommendation #113 – The Sanitary Sewer Section should not conduct sewer tap inspections; the construction inspectors in the Department of Engineering and Construction should conduct these inspections.**

PWA agrees to this recommendation; however, since the Sanitary Sewer Section has been conducting Tap Inspections for over 15 years, we are concerned our experience in this area and knowledge of what to look for in determining the condition of our sewer infrastructure can be adequately transferred to CEDA/Department of Engineering and Construction staff assigned this duty. A Standard Operating Procedure (SOP) and protocol will have to be developed to implement this recommendation.

**Recommendation #128 – The Equipment services Division should replace four (4) sewer flusher combos (#4169, #4165, #4796, and #4797) and one of the CCTV trucks (#4914) assigned to the Sanitary Sewer Section.**

PWA agrees with this recommendation. The Agency has many equipment and fleet needs.

The Sewer Department is requesting to replace all flushers as well as update the computer systems on all CCTV Units and replace CCTV truck 4914. All Power Rodders need replacing, as do construction trucks #4513 and #4795, which carry construction materials for sewer excavations.

**Recommendation #129 – The Equipment Services Division should replace two power rodders with “hands free” rodders that perform the function of cleaning the main with a pre-set pressure with no buttons to push or levers to move to continue the cleaning once initiated.**

**Recommendation #130 – The Sanitary Sewer Section should acquire three (3) additional sewer flusher combos.**

**Recommendation #131 – The Sanitary Sewer Section should acquire a self-propelled easement power rodder.**

PWA agrees with this recommendation. The Agency has many equipment and fleet needs.

Estimated \$1.7 million capital outlay funds need to be identified for replacement and additional vehicles purchases.

**Recommendation #133 – The crew size used for cleaning of watercourses should be reduced to three persons supplemented by the use of inmate labor.**

PWA agrees with this recommendation. The 4-person crew is necessary for the cleaning of water courses throughout the City of Oakland. Typical crews are as follows: (1) Truck driver for heavy debris removal, (1) Crew Leader to manage the project, and (2) Maintenance Workers to operate weed cutting equipment and consolidating the debris for removal. One furlough worker can be utilized in place of the second Public Works Maintenance Worker, who can be assigned to another crew.

**Page 87 – Productivity of staff assigned to Storm Drain Maintenance Section should be improved.**

PWA disagrees that the data used in this Audit fully captures the activities performed by the Storm Drain Maintenance crew.

Our Storm Drain staff will not have any problems with productivity as suggested (20+ storm inlets a day).

The challenge lies in the fact that our staff has to respond to a variety of requests besides storm drain maintenance calls, such as:

- Board up requests from Oakland Police Department.
- Citizen request for retrieval of personal property dropped in storm inlets.
- Replacing stolen inlet grates and Manhole covers.
- Emergency mud slide assistance (Covering and sandbagging mud slides)

These additional activities are not taken into account when calculating productivity. However, the Agency fully expects to capture all activities performed by the Storm Drain staff via Cityworks and thus calculate the crew's true productivity.

**Recommendation #135 – The crew size used for pothole patching should be reduced to two persons, the crew size used for major paving should be reduced to five persons for grinding and seven persons for asphalt overlay, the crew size used for concrete pouring should be reduced to three persons, the crew size used for constructing forms for concrete sidewalks should be reduced to two persons, and the crew size used for sidewalk grinding should be reduced to one person.**

PWA does not object to, nor endorse this recommendation; we will evaluate it further with the help of a new Operations Manager for the Infrastructure Maintenance Division.

We have one, two-person pothole crew and two, three-person pothole crews. Crews work in districts, not by location so it is necessary for safety reasons to have staffing of three's for some crews. When working on major thoroughfares and in high-traffic areas, it is necessary to increase the amount of staff for traffic control by one or two persons for safety.. During the Pothole Blitz, crew size increased because we were performing base repair and patching large stretches of roadway requiring more than one crew.

Our base repair crew resurfaces or reconstructs entire blocks versus 10 X 10 patches. The crew size is correct for the type of work performed. When the crew is repairing small sections of street, the crew is separated into two crews.

When the paving box is in operation the standard person count is two individuals to operate the box and four on the ground – two shovelers, and two rakers. At least one operator is needed for rolling. And a minimum of four people are needed for drivers to deliver the asphalt. If there are low clearances on the block a grounds person may be needed to assist the driver with raising/ lowering the truck bed to avoid damaging overhead wires and low branches. Flaggers may also be required. The average count is thirteen.

Our current Concrete Crew size is four persons – two to pour the concrete and two for demolition and forming. Depending on the size of the pour or demolition the size may increase.

We have three sidewalk grinders and three vacuums. For pedestrian and staff safety, we have crews of twos – one person operates the vacuum and one person operates the grinder.

**Recommendation #136 – The Agency should "pilot" test the use of spray injection pothole patching.**

**Recommendation #137 – If the "pilot" test is successful, the Agency should utilize spray injection methodology for patching potholes, and acquire a spray injection pothole patching truck.**

We are in the process of getting a demonstration of several types of spray injection trucks.

**Recommendation #138 – The Agency should enhance the effective deployment of the Major Paving Crew for street overlay and asphalt grinding, and *not* divert the staff resources to other work activities.**

Mechanical Gutter Cleaning is performed by the Base Repair Crew during the storm season. It is an important and required maintenance operation. It prevents flooding and reduces large slides.

Pothole Blitz is when everyone in Street and Sidewalk Maintenance fills potholes and performs minor base repair in designated locations in Oakland.

**Recommendation #139 – The City should initially contract for hauling of asphalt grinding and delivery of hot mix asphalt for street overlays, but should acquire two 15-yard transfer dump bodies and trailers in the next three fiscal years.**

PWA agrees with this recommendation and will explore this further in the upcoming paving season.

**Recommendation #140 – The Streets and Sidewalks Section should acquire two 15-yard transfer dump bodies and trailers to haul asphalt grindings and not use three-axle dump trucks.**

PWA agrees with this recommendation. However, a class 'A' commercial driver's license is required to drive one. At this time, only the Heavy Equipment Operator classification requires this license as this is a relatively new requirement.

**Recommendation #141 – Transportation Services/ Engineering and Construction Department/ CEDA should be responsible for speed bumps. These projects should be handled as a capital project and accomplished contractually.**



PWA agrees with this recommendation. The Agency should focus on preserving its street assets, which are increasingly requiring more effort.

**Recommendation #142 – The asphalt budget should be increased by \$400,000 annually to enable the major paving crew to pave streets for eight months each year. The total asphalt budget for the paving crew should be \$800,000 annually.**

PWA agrees with this recommendation.

**Recommendation #146 – The levels of service delivered by the Park Maintenance Section should be adjusted to provide effective turf management, tree / landscape management, irrigation management, and playground management.**

PWA is not in agreement with the MCG analysis of what the adequate staffing level is for Park maintenance and what the associated tasks should be. Litter and travel time factors do not appear to be incorporated into the analysis. PWA cannot use herbicides in parks and most typical park maintenance practices include the use of herbicides for weed control. New mandates for higher levels of litter removal related to “clean water legislation” and the prohibition of green waste being mixed into garbage and going to the landfill will require more labor inputs without additional resources. These reasons point to a need for additional staffing to achieve the “Mode B” service level recommended by MCG.

**Recommendation #147 – Additional equipment should be acquired to enhance the level of service for mowing of turf.**

PWA is in agreement with this recommendation; however, the annual maintenance cost (\$15,000) is too low for 2 trimmer mowers, 2 larger mowers, 2 pickup trucks and 2 trailers.

**Recommendation #156 – The global positioning system units in the street sweepers should be repaired so that the units can report broom down.**

PWA agrees with this recommendation and has already implemented it. In mid January 2009 the broom down feature was installed on 20 of 22 Street Sweepers. The remaining 2 are being serviced by the manufacturer and will be completed when they are returned to the City.

**Recommendation #157 – Each street sweeper operator should be required to report the total hours worked, the total hours parked, the total hours spent driving, the total hours spent street sweeping, and the total curb miles swept.**

The total hours worked are recorded on a daily time sheet and pre-trip inspection sheet. Total driving hours are recorded on the Commercial Driver’s Time Record which is required by the California Highway Patrol for commercial drivers. GPS records total hours sweeping, and a



contractor is currently a writing software program that will record hours spent sweeping and curb miles.

**Recommendation #158 – The Keep Oakland Clean and Beautiful Division should set an objective for each street sweeper operator to sweep 32 curb miles per full seven and one-half hour shift.**

We are in the process of collecting and assessing data to determine actual number of curb miles swept per shift, per sweeper. Once the data is collected and mapped on GIS, routes will be re-configured to meet the recommended standards.

**Recommendation #159 – The street sweeper routes should be developed into a GIS layer, and each route adjusted so that the curb miles in each route represent a full shift's work.**

PWA agrees with this recommendation and is already pursuing its implementation. The boundaries and other pertinent information have been provided to DIT which will create a GIS layer for each route so they can be evaluated and re-aligned as needed to meet benchmark.

**Recommendation #163 – The Keep Oakland Clean and Beautiful Division should acquire twenty (20) additional illegal dumping surveillance cameras.**

Surveillance of environmental crimes such as illegal dumping is being conducted by several cities, counties and special districts throughout the state and country including Oakland. All cameras, whether video or digital have limitations and challenges. If the cameras are effective they can sometimes capture license plates of illegal dumpers. This information may result in invoicing owners of the subject vehicles, and a small claims action if not paid. Based on the current staffing level and workload, additional staff would be required to monitor and maintain cameras, download information, handle invoicing, collections, and provide small claims court and hearing officer support.

**Recommendation #169 – The Facilities Management Division should develop and install a preventive maintenance program for all of the City's buildings and building components.**

A preventive maintenance plan is an important element in facilities maintenance and can result in reduced maintenance costs in the long run. However, due to lack of capital funding for City facilities and the backlog of deferred maintenance for many past years, there would be no immediate savings from the implementation of such a program.

The development of a comprehensive preventive maintenance program is labor intensive. It would require additional staff time to establish the levels of services, identify key components, document, train, and develop a computerized database and tracking system. This would also require additional funding as staff is working at full capacity to perform the current workload – a workload that is forecasted to increase as building components continue to fail.

With the planned use of CityWorks to track all maintenance requests, this recommendation can be implemented at that time with the preventive maintenance activities added and tracked in that system. Until such time, staff can, as time permits, continue to add more preventive maintenance activities to their current workload.

**Page 294 – The Facilities Management Division should develop and install a reliability-centered program for facilities components.**

PWA disagrees with this recommendation as a reliability-centered program would not be very helpful at this time given the extent of deferred maintenance in our facilities. The recommendation to spend an additional \$15K annually on an outside contract would not result in any savings in maintenance costs. If this funding was available, it should be spent on the repair or replacement of building components. The items suggested, such as the inspection and testing of fluids, heat and vibration monitoring are all a part of a comprehensive preventative maintenance program and would be routinely performed by maintenance staff.

The primary issue with both of these recommendations (page 283) is that without additional capital funding and adequate annual increases for maintenance, a preventative maintenance plan or reliability testing would in no way result in any significant savings of O&M or staff time.

**Recommendation #171 – The Engineering and Construction Department and the Facilities Management Division should develop and implement a facility commissioning policy.**

PWA agrees with this recommendation; however, additional staff resources would be necessary to implement it.

Implementation of an all-inclusive commissioning plan for all new facilities could ultimately save maintenance staff time and operations costs. However, the startup time and staff costs as well as the on-going cost for additional staff to participate in the plan reviews, document preparation, weekly meetings and onsite visits for concurrent projects would need to be evaluated. Additional funding would also be needed.

Lastly, there are many issues to be considered such as roles, responsibilities, and funding that would require close cooperation between both agencies.

**Recommendation #172 – The Engineering and Construction Department and the Facilities Management Division should develop an equipment standardization policy.**

PWA agrees with this recommendation; however, additional staff resources would be necessary to implement it.

Current contracting policy does not permit City staff to specify specific brands or models in the bid specifications. City-wide policy changes would be required before staff could implement this recommendation. This recommendation again is labor intensive and would require additional funding for staff time and start up costs.

**Recommendation #173 – The Agency should establish a Facilities Management Advisory Board to serve as a customer council for the Facilities Management Division.**

PWA agrees with this recommendation. All of the suggested actions recommended are currently taking place. The managers of both units are presently developing standardized policies and procedures for their operations. Monthly meetings are scheduled with client agencies to discuss their individual service needs and any outstanding issues.

With the current workload of all City staff, the development of an Advisory Board made up of all the agencies would not be efficient use of time. Each client group has distinct issues related to their facilities. Regular, individual agency meetings would be more effective in making sure that the concerns and expectations of each client agency are met.

In addition, facilities staff is currently reviewing all forms of client communication such as website, emails to all employees, building announcements, published policies and procedures and electronic forms for all services.

As it relates to the cost for services, the internal service charges are not determined by the Facilities Management Division. Rates are determined by the Budget Division subsequent to their fund balancing analysis of the Internal Service Fund (4400) and would not be a part of a discussion with the client agencies.

**Recommendation #175 – The Facilities Management Division should warranty its maintenance and repair work.**

PWA agrees with this recommendation. This recommendation is currently being implemented. Internal Service agreements are being developed for implementation at the beginning of the new budget cycle. They will detail the roles and responsibilities, levels of services, expectations of both the Facilities Management Division as well as the tenant agencies, number of staff and internal service funding provided. The Agreements will be reviewed on an annual basis and addenda will be drafted to document any changes that have occurred. In addition, staff is developing surveys to be given to the client agencies on a regular basis to request their feedback. The surveys will allow for timely discussion on service level and any other issues. These documents will serve as the “warranty” or agreement given to our clients.

**Recommendation #176 – The Facilities Management Division should provide point of sales receipts for each transaction. The point of sale receipts should be summarized in monthly reports provided to each department.**

PWA does not agree with this recommendation. This recommendation goes well beyond the industry standard for providing client agencies/tenants with operational costs. It is current practice for all property management organizations to provide this type of information to their client on an annual basis and is not done at such a low level of detail. Monthly review of the expenditures would not provide a clear picture of the activities being performed by the facilities management units. An annual review would be more beneficial.

Even with the use of CityWorks, this would be labor intensive and, if done on a monthly basis would not provide more useful information to either the facilities management staff or the client agencies.

**Recommendation #177 – The Division Manager for the Facilities Management Division should meet monthly with each department to review the monthly reports and discuss the basis and nature of the costs.**

The recommendation for clients to review fiscal reports on a monthly basis is not based on any industry standard or known practice for this type of facilities management organization, public or private. This recommendation does not take into consideration current fiscal or purchasing processes at the City of Oakland and is not discussed in detail or in context with the current operations of the Divisions.

This recommendation would be more relevant if the client agencies are being charged directly for services on a per item billing and not through an internal service fund, as is the case at the City of Oakland. Expenses allocated to various agencies are often not allocated on a monthly basis and some allocated expenses (such as utilities) are not controllable. Building activities are not routine and are often seasonal such as roof leak and heavy summer use.

The monthly reporting again would not be useful and is not in keeping with property management standards of annual reporting. Implementation of these recommendations would result in the need for additional funding for staff time and would not result in any saving in maintenance costs or create efficiency.

## FINANCIAL MANAGEMENT

**Recommendation #188 – The Redevelopment Agency should provide funding required for street and sidewalk capital improvement projects in the City's redevelopment project areas.**

PWA agrees with this recommendation. PWA will pursue this funding by appealing directly to the Redevelopment Agency's project area committees.

**Page 350 – Equivalencies.**

MCG's computation of 3,600 vehicle equivalents (VE) differs from the VEs computed by the Equipment Services Division (ESD). MCG computed the equivalents based on the average maintenance effort for various classes of vehicles provided by several municipal organizations. This method assumes the average fleet age is within the normal parameters of municipal fleets. The ESD computed VEs of 4,651 for Oakland's fleet based on the actual amount of maintenance effort expended to maintain the fleet during FY 2007-08. The higher number reflects the additional effort required to maintain a fleet of significantly older vehicles.

**Recommendation #193 – The Equipment Services Division should develop and recommend adjustments that address operating revenue imbalances in the Equipment Fund among the various funds as part of fiscal year 2009-10 budget submittal.**

**Recommendation #194 – The Equipment Services Division should develop and recommend two object accounts for the allocation of Equipment fund costs: an equipment operating and maintenance object account and an equipment replacement object account.**

**Recommendation #195 – The ten-year repayment plan to recoup the negative fund balance for the Equipment fund using the general fund surplus when available should not be implemented. The negative fund balance for the Equipment fund should be forgiven.**

The Budget Office is addressing the revenue imbalances in the Equipment Fund for the various funds for the FY 2009-11 budget cycle. Equipment Services Department staff has proposed sub funds for operations and maintenance and for replacement. Forgiving the negative fund balance has been proposed in a report to the City Administrator dated March 12, 2009, that reviewed efficiencies in the Equipment Services Division.

**Recommendation #197 – The Equipment Services Division should utilize a chargeback system that reflects the actual costs of providing services for each vehicle in the fleet and not a flat rate per class**

**Recommendation #198 – The Equipment Services Division should charge departments for the costs of accident repair or necessary vehicle replacement resulting from accidents in which a department's employee is found at fault or in which the Division is unable to recover the costs from the other party's insurance.**

The Equipment Services Division (ESD) has recommended a rate chargeback system that charges departments for the actual cost of the services consumed as a way to ensure accountability for appropriate use of fleet services. ESD is currently working with Risk Administration to expand recovery efforts for insurance subrogation. A true chargeback system would also make departments accountable for the costs to repair or replace vehicles for the at-fault accidents of their employees.

**Recommendation #199 – The Equipment Services Division’s charge-back rates should be re-calculated, including the hours that staff should be charging to work orders, based upon the cost structure of the Equipment Services Division. Upon the re-calculation of these rates, the charge-back system and proposed rates should be shared and reviewed with customers and the Fleet Advisory Board. This review should occur on an annual basis.**

Equipment Services Division staff is continuing to refine its rates; however, many of the assumptions made by MCG are based on erroneous information. The proposed shop labor rate of \$125 per hour are based on 72,960 labor hours charged to work orders, which is an increase over 2007-08, and equates to approximately 132 labor hours per technician per month.

MCG provided ESD staff with a mix of 97 automotive repair shops and dealerships within the Bay Area as an example of the shop labor rate structure that should be considered by ESD. The list, from Consumer Checkbook, is outdated and does not include truck and construction equipment repair shops. Two automobile dealerships’ rates were included in the analysis, even though the dealerships – Broadway Ford and Saturn of Oakland – have both been shuttered for more than two years.

Furthermore, using MCG’s data and isolating just the dealerships within Oakland (which meant eliminating the small, independent auto repair shops), yielded an average shop labor rate of \$138.00 per hour (see Attachment A).

An informal telephone survey conducted March 4, 2009, shows the most current labor rate among comparable vendors:

As of March 4, 2009	Labor Rate	
Peterson Tractor	\$ 120.00	
East Bay Ford Truck	\$ 125.00	
San Leandro Honda	\$ 127.00	
FH Dailey Chevrolet Isuzu	\$ 127.50	
Albany Ford/Subaru	\$ 128.00	
Golden Gate Freightliner	\$ 134.00	Median
Marina Buick Pontiac GMC	\$ 134.95	Mode
Walnut Creek Ford	\$ 134.95	
The Ford Store San Leandro	\$ 135.00	
Tec of California	\$ 138.00	
Cummins West	\$ 144.25	
<b>Mean</b>	<b>\$ 131.70</b>	
Stoneridge Chrysler Jeep Dodge	by job	
Dublin Honda	by job	
San Francisco Ford Lincoln Mercury	by job	
Bay Bridge Chrysler Jeep Dodge Kia	by job	

ESD is continuing to refine its commercial markup rate. The fuel mark up has been changed to \$0.09 per gallon. Management charges have been subsumed into the hourly labor rate, thereby eliminating an additional service charge per vehicle per month.

A \$15.00 monthly service charge per vehicle, for a fleet of approximately 1,650 vehicles and equipment would yield \$297,000 in service charges.

**Recommendation #203 – The City should utilize lease financing solely for replacement of heavy equipment, particularly over the next three fiscal years.**

**Recommendation #204 – The Equipment Services Division should be responsible for administering the leases for equipment within the City’s fleet.**

PWA agrees with this recommendation. The two tax-exempt, private placement leases that the City entered into were structured into four tranches consisting of three, five, seven, and ten-year life-cycles. After deferment of several replacement cycles, staff used the available tranches to fund replacement vehicles and equipment. However, no equipment was funded by a tranche that would continue to be paid past the vehicles’ expected life. These tranches were utilized several years into the City’s lease agreements.



**Recommendation #210 – The City should seek voter approval of a sales tax override or a parcel tax override to fund the maintenance and repair of parks, street and park trees, and streetlights.**

PWA agrees with this recommendation. Since 2006 the City has twice asked property owners in Oakland to increase the Landscaping and Lighting Assessment District funding. Currently the City Council is working on a Parcel Tax measure that would increase funding for park and tree and street lighting maintenance.

**Recommendation #212 – The City should adopt an ordinance that imposes a "duty" on the property owners for injuries to third parties as a result of the owner's failure to maintain the sidewalk.**

PWA agrees with this recommendation. The City Attorney's Office, together with CEDA/DEC and PWA, recently brought a sidewalk liability ordinance for the City Council's consideration; the City Council decided to not move forward with this ordinance at this time.

**Recommendation #213 – The Agency should perform an annual inspection of the sidewalks in residential areas on a rotating basis to identify tripping hazards and prioritize a list of areas to be repaired based on severity. Property owners should then be notified to make the necessary repairs.**

PWA agrees with this recommendation. However, the function of inspecting sidewalks is no longer in Public Works. It is performed by CEDA.

ORGANIZATIONAL STRUCTURE & STAFFING

**Recommendation #215 – The Fleet and Safety Coordinator within the Streets and Sidewalks Section should be reassigned to the Equipment Services Division, and funded within that budget.**

PWA agrees with this recommendation. This was completed, effective January 1, 2009.

**Recommendation #216 – The Supervising Civil Engineer position in the Infrastructure and Operations Department should be eliminated through attrition.**

PWA does not agree with this recommendation; however, due to budgetary constraints, this position may be eliminated. This position provides invaluable support to the various maintenance sections and performs a variety of project work. There will be a savings from eliminating this position; however, it will not be as significant as estimated because an allocation for staff changes will have to be provided to CEDA/DEC for their work since they are all project funded staff.



**Recommendation #217 – After the above staffing adjustments, the level of staffing within the Streets and Sidewalks Section should not be adjusted: the level of staffing is appropriate to the size of the street network.**

PWA disagrees with this recommendation based on the deteriorated condition of our street network. While our staffing is within the benchmarked range, our street network is among the 10 worst of the 109 cities in the nine Bay Area counties covered by the Metropolitan Transportation Commission. The highly deteriorated condition of our street assets places an additional burden on street maintenance staff. The bulk of the staff's resources and time are directed to respond to street failures (such as pothole & base repairs), allowing little time to provide adequate preventative maintenance, such as crack sealing. This is difficult to capture in benchmarking comparisons.

**Recommendation #218 – The staffing of the Tree Maintenance Section exceeds workload by one position. One position should be eliminated through attrition.**

PWA disagrees with this recommendation. The audit report recommends having four tree maintenance crews and a one person crew for watering and young tree pruning. The report states that "a total of fifteen (15) staff would be required." This figure should not include the (2) Tree Supervisor I FTEs. They would be needed to rove between the five crews, organize work schedules and document work and personnel performance. Therefore, one additional Tree Trimmer FTE should be added to the current level of staffing.

This additional position would be assigned to prune (train) young trees. Training young trees is a critical component to developing proper branch structure and improving the long-term viability of street trees. The pruning of young trees should be performed on a more frequent cycle than mature trees. A two person young tree care crew would be much more efficient and significantly improve City street trees. Increasing the number of Tree Trimmers by one position would also allow greater efficiency for production-style, proactive pruning of street trees.

The Tree Worker/Driver classification should be eliminated through attrition and those positions should be converted to Tree Trimmers. This entry level position is limited in its work duties. Tree Trimmer classification is more functional and versatile.

**Recommendation #219 – The amount of vehicular equipment within the Tree Maintenance Section should be reduced by two (2) cranes, two (2) tool trucks, two (2) flatbed trucks, a crew cab light dump, a brush chipper, and a compact sedan.**

PWA does not necessarily agree with this recommendation; however, recent staffing reductions make it feasible to reduce equipment within the Tree Services Section.

Performing tree maintenance safely and efficiently requires having appropriate equipment available. The report did not mention that the Tree Services Division responds to emergency calls. The crews are equipped to be able to handle all emergencies including large tree failures. Such emergencies are cleared by routine tree maintenance crews.

Having a variety of equipment provides better response times to these emergency calls. It is important to have knuckle-boom cranes available to manage wood. Utilizing equipment saves time and reduces work-related injuries. Specialized equipment is not available for rent when existing trucks are in the shop awaiting repairs.

However, given the current level of staffing and recent program cuts, 22% of the equipment could be removed from the fleet. Aerial lift # 4002, which has been down since 7/14/06, should be replaced. It would also be beneficial to purchase a small, self-propelled stump cutter to replace #8966.

**Recommendation #220 – The staffing of the Sanitary Sewer Section exceeds workload by eight (8) positions. Eight (8) positions should be eliminated through attrition.**

PWA disagrees with this recommendation. This Sanitary Sewer staff is responsible for the maintenance and repair of the sanitary sewer collection system by performing work activities such as:

- Hand rodding mains
- Power rodding mains
- Hydro flushing mains
- CCTV inspection of mains
- Responding to complaints
- Sewer main repair

The Sewer Department performs all of the work activities described in your audit. However, there were two functions that were left out. The staff is also responsible for dredging and removing sediment from our trunk lines as well as main interceptors that run throughout the city. This function is known as – **Drag Machine Cleaning**.

This operation is ongoing and requires a four (4) man crew to set up and conduct traffic control in certain situations. This operation entails the placement of very heavy instruments; hence safety precautions are very important during this operation. The department is currently short staffed and (4) additional FTE's are needed to perform this operation.

The other function that the Sewer Department performs is **Pump Station Maintenance**. Staff performs weekly inspections of our eight (8) Pump Stations located in different parts of the city. This work activity involves three crew members who have to set up emergency retrieval equipment, with one crew member entering the "Confined Space" to conduct the pump station

inspection. CAL-OSHA Regulations state that three (3) crew members must be present when entering a Permit Required Confined Space. The Authorized Entrant, Attendant, and Entry Supervisor must be on site while performing this function. There is also continuous Atmospheric monitoring being performed by the crew members who are not in the Permit Required Confined Space. Due to staff shortages, we currently have to shut down one of our preventive maintenance crews to perform this function on a weekly basis. The Sewer Department needs (2) additional FTE to perform this operation.

**Page 346-349 –Current staffing levels and Annual Work Program for the Drainage Section (Exhibit 16) as examples of what the Storm Drain Section performs as daily tasks.**

Current staffing levels are needed and are critical in order to maintain our aged Storm Drain infrastructure. The audit uses exhibit and information from the Storm Drain Master Plan. This plan does not reflect the activities the Storm Drain Section accomplishes routinely. There are many other tasks that the Storm Drain Section performs on a daily and seasonal basis. Trying to cover all these tasks listed below as Miscellaneous Storm Water Maintenance is misleading.

- Storm / Drain inlet repair
- Storm / Drain pipe repair
- CCTV pipe inspection and pipe repair locating
- Manufacturing sandbags / delivering sandbags;
- Mud slide assistance(Covering and sandbagging mud slides)
- Replacing stolen inlet grates and Manhole covers
- Manage activities of Contractor for Lake Merritt widgeon grass removal
- Board-up requests from Oakland Police Department
- Citizen request for retrieval of personal property dropped in storm inlets

**Recommendation #221 – The level of staffing within the Drainage Section exceeds workload and service level requirements by nine (9) positions. Nine (9) positions should be eliminated through attrition.**

PWA disagrees with this recommendation as it contradicts a previous recommendation. On page 109, MCG recommends that Storm Drainage staff complete some of the minor CIP work from the Storm Drainage Master Plan. Yet, here it proposes to eliminate more than half of the Drainage Staff.

It is crucial to keep staffing levels where they are presently in order to provide an adequate level of service in maintaining our Storm Drain infrastructure. There is a sizable investment (\$1.2 Billion) that we need to protect and maintain. There is a need to protect our citizens against property damage from flooding and possible eroding hillsides.

Because of our aged infrastructure, the activities that the Storm Drain staff performs routinely are crucial for maintaining our effectiveness in servicing citizen complaints and repairing our

aged infrastructure. Our department needs to continue our daily activities, which include the repair and service of our inlets, pipes, weirs, culverts, V-ditches and waterways.

The PWA Audit speaks to the ability of the Drainage staff to repair and replace damaged storm inlets and pipes (pg 108-109). These repairs are necessary because there are zero capital improvement project dollars allocated to storm drainage facilities presently.

**Recommendation #223 – Reductions in the level of technician staffing assigned to the Equipment Services Division should only be made if the number of equipment and if the age of the fleet is reduced through replacement of equipment that already exceeds replacement guidelines.**

**Recommendation # 224 – The work performed by the Body and Paint Shop should be outsourced and the staff allocated to the Shop eliminated through attrition.**

PWA disagrees with the recommendation to outsource paint and body shop work.

There are various opinions on outsourcing paint and body shop operations within the municipal fleet community. While some have outsourced this function, other Bay Area fleets maintain in-house paint and body shop operations and defend the economical use of such; e.g., City of San Francisco, City of San Jose, Santa Clara County.

Furthermore, outsourcing paint and body shop functions will still require staff to monitor the outside vendor contracts, to prepare repair estimates and work orders prior to delivering the vehicle/equipment to outside contractor, and to inspect and accept repair work when returned to the shop.

The Equipment Services Department's Body Shop works in conjunction with the Machine and Welding Shops to custom design and fabricate specialty parts for the varied specialty equipment within the City's fleet in order to minimize downtime and costs. Body repair for specialty vehicles (e.g., fire apparatus) will increase downtime substantially as specialty vendors are not located in close proximity to Oakland.

**Recommendation #225 – The Electrical Construction and Maintenance Planner position should be eliminated through attrition.**

PWA disagrees with this recommendation. The Electrical Construction and Maintenance Planner position, responsible for tracking and recording data associated with work performed, is essential to the production and output of the Electrical Services program. The planner also performs essential budgetary calculations on behalf of the management team to ensure funding is directed to the appropriate project. Although a portion of the work can be completed by the

supervisory staff, eliminating the planner position could compromise the Supervisors' current job duties (i.e. staff supervision, frequency of field inspections).

The electrical services operations are well planned, coordinated and executed. This is a direct result of the input provided by the planner. Due to the construction-related nature of the work performed by staff, electrical services is able to provide swift and reliable repairs to accident related damages, along with minor retrofit projects involving traffic signal systems. The planning, budgeting, scheduling, execution and review of these projects are directly related to the planner's functions.

**Recommendation #226 – The Public Works Supervisor II position in Traffic Maintenance should be eliminated through attrition.**

PWA disagrees with this recommendation. There are currently 23 personnel assigned to the Traffic Maintenance Division and two supervisors are needed to schedule, inspect and oversee operations performed throughout the geographic boundaries of the City. Having two supervisors is an operational necessity to manage the delineation and signage work orders and complaints received.

**Recommendation #227 – The Administrative Assistant II Position in Traffic Maintenance assigned to support the Public Works Supervisor II should be eliminated through attrition.**

The position in Traffic Maintenance is actually an Administrative Assistant I and it supports both the Public Works Supervisor I and II. Duties that are performed that cannot be incorporated into Cityworks are listed below:

Assist in maintaining a daily work order database from CEDA personnel assigned to Traffic Maintenance staff in Microsoft Excel.

This duty is not in Cityworks as CEDA does not use Cityworks. This is also true for request from Budget & Finance. We currently receive an average of 18 to 20 requests per day for damaged "No Parking" signs. The Administrative Assistant I will assist in inputting this information in Cityworks.

In addition to the above, the position also performs the following duties:

- Utilizes word processors, type review, edit and proofread reports and documentation
- Compose correspondence reports and design charts and graphs
- Determines proper spelling, grammar, and paragraphing; develop proper formats for forms, edit and review documents as necessary; print final documents and distribute
- Provide routine inquiries from the public and refer or assist in the resolution of problems
- Assist in providing information which may require the general interpretation of Traffic Maintenance policies and procedures

- Follow, interpret and direct basic office procedures such as filing, inventory and maintain supplies, check invoices and packing slips, sort, distribute and route mail, operate office equipment (copiers, fax machines, etc.), maintain petty cash records
- Assist in performing radio/Nextel dispatching, and assists in communicating with non-City agencies (utility companies, etc.)
- Sets appointments and meetings for Traffic staff, makes reservations for City facilities
- Assists the public by providing information concerning fees in the billing and processing of private vehicle accidents that damage Traffic structures

**Recommendation #230 – The streetlight maintenance and repair staff should only be assigned to the construction/installation of new streetlights as time permits; otherwise that service should be outsourced.**

**Recommendation #231 – The City should discontinue group re-lamping of streetlights.**

PWA is not in agreement with this recommendation. Street lighting is a very visible and viable asset of the City. Oakland citizens routinely request more streetlights to combat public safety concerns. Our customers demand well-lit streets and expeditious repairs; and Electrical Services tries to meet or exceed these expectations. The proactive re-lamping strategy has resulted in a notable reduction in the number of outage trouble-calls received by the department. Also, the Electrical Services Group routinely tests new products for application in the lighting inventory.

The following list is a sample of the lighting work performed by City forces as part of their regular duties:

- Replaced 125 damaged street light poles
- Repaired 1,049 street light outages found by staff
- Proactively re-lamped 2,212 street lights (began on 1-22-2008)
- Repaired 2,889 street light outages reported by citizens

**Recommendation #233 – Authorize one (1) additional Electrical Leader position, four (4) additional Electricians and two (2) additional Electrical Helper positions in the Electrical Section to enable the preventive maintenance of the City's traffic signals.**

PWA agrees with this recommendation with the following clarifications.

Within the audit recommendations, statements were made regarding the absence of a planned signal maintenance program. These statements, although somewhat correct, did not take into consideration the maintenance performed under the project category of the electrical services shop.

Resources have been allocated over the years to fund a variety of operations that would supplement the on-call maintenance practices the Division follows. Listed below is some of the work performed by Electrical Services, which refutes certain statements in the MCG audit.

- Replaced 36 Traffic Signal Controllers – upgrades to signal system
- Installed 22 Video Detection Cameras – upgrades to signal system
- Installed 3,473 LED traffic signal lamps for signal re-lamping project – maintenance function
- Answered 1,402 traffic signal trouble calls within 2 hours 86.5% of the time (90% repaired within 1.5 hours) – involves walk around of intersection to check general condition of lights, buttons and signal heads
- Replaced 90 damaged traffic signal poles

**Recommendation #238 – The Keep Oakland Clean and Beautiful Division should be responsible for graffiti abatement in or outside of parks.**

PWA is not in agreement with this recommendation. Currently, there are four FTEs in the Parks and Buildings Division who abate graffiti in parks. The audit proposes to shift responsibility to KOCB but without additional staffing. This would not be feasible given the existing workload.

**Recommendation #239 – In the next several years, as attrition occurs, the Agency should upgrade the skill mix for building maintenance to include fewer Painters, and more Electricians and Plumbers.**

An overall review of the work of all staff in context with the current job descriptions should take place before a determination is made as to how the positions should be filled. This should be a part of a larger review of the organizational structure of both facilities management units.

**Recommendation #240 – Custodial staffing exceeds workload and service level requirements by six (6) positions. Six (6) positions should be eliminated through attrition**

PWA does not agree with this recommendation. The recommendation to delete six custodial staff is based on the use of one industry standards report by IFMA which is made up of various types of facilities and organizations. While the averages can be used as a baseline, it does not fit all organizations. The report lists the other types of special services requiring custodial staff time outside of cleaning such as meeting setups at City Hall, plaza cleaning, setups for media conferences, and support for special events in both the building and the plaza. However, there is no correction or actual adjustment used in the final analysis. With the increasing concerns about the current level of cleanliness in the plaza, this recommendation would greatly affect the ability of staff to meet expectations.



**Recommendation #242 – The two permanent part-time Custodians assigned responsibility for pool maintenance should be reclassified as Pool Technicians.**

Staff agrees with this recommendation as the duties are related to maintenance of the pool and pool equipment. The duties are not consistent with custodial activities at the sites where cleaning is actually being done in the building.

**Recommendation #243 – The total number of staff allocated to park and landscape maintenance is sufficient to deliver a good level of service. The level of staffing for park and landscape maintenance should be maintained.**

PWA does not agree with this statement. See Page 257 for comments.

**Recommendation #248 – The 6.4 staff allocated to the Office of Parks and Recreation should be reallocated to the Park Maintenance Section of the Agency including the LLAD funding for \$364,520.**

PWA does not agree with this recommendation. The ball field preparation function (baseball infield preparation and chalk lining; football and soccer field lining; weeding and litter removal) is closely tied to the user groups who reserve the fields. The field reservations are often in the evenings (adult softball) or late afternoons and weekends (youth leagues). This function requires direct supervision and interactions with user groups and their scheduling. OPR should continue to manage this function alongside the management of scheduling and related matters.

**Recommendation #250 – The two (2) full-time custodians assigned to route 4 and the two (2) temporary part-time custodians responsible for the cleaning of standalone restrooms in parks on the weekends should be transferred to the Park Maintenance Section.**

PWA is not in agreement with this recommendation. Custodians were part of park maintenance staff prior to the PWA/OPR re-organization in 2004. The reorganization brought all custodial staff under one manager providing for backfilling, training, supervision and consistent practices.

**Recommendation # 254 – Street sweeping staffing exceeds workload and service level requirements by five (5) positions. Five (5) positions should be eliminated through attrition.**

PWA does not agree with this recommendation; however, the Agency may have to implement it due to budgetary constraints. Positions that are proposed to be eliminated are responsible for removing trash and bulky items that sweepers are unable to pick up (i.e. hard to reach locations such as: dead-end streets, speed bumps, bulb outs, and cul-de-sacs). One FTE is responsible for transporting the roll-off box for disposal of Street Sweeping debris; this position reduces travel miles, fuel usage and improves efficiencies of the Street Sweeper Operators. PWA will review this recommendation in conjunction with its review of miles swept and its realigned operational plan.



**Recommendation #256 – Electrical painting workload is misallocated and exceeds workload by three positions. Three positions should be eliminated through attrition.**

PWA is not in agreement with this recommendation. If these positions were eliminated, there would be no staff to repaint/remove graffiti from electrical poles and City utility boxes. The Audit recommends that this function be handled by the Electrical Services and Traffic Maintenance Divisions but does not reallocate the staff or funding.

**Recommendation #257 – Vegetation control staffing exceeds workload and service level requirements by six positions. Six positions should be eliminated through attrition.**

PWA does not agree with this recommendation. The KOCB vegetation cut and clean crews are responsible for paved medians, pathways, excess right-of ways along the street, vacant lots and traffic islands. The crews have recently been trained and deployed to spray in accordance with the City's Integrated Pest Management (IPM) Policy. The recommendation does not explain how it was determined that six FTE would be sufficient to do the work. If we assume that the recommendation is based on herbicide spraying, it still does not take into consideration the number of locations that cannot be sprayed and would have to be serviced manually. Spraying is limited to defined time frames; hand weeding is still required for all areas including more than 50% of locations that do not qualify for spraying under the IPM policy. The cut and clean staff are also responsible for pre-storming and storm response from October to April each year.

**Recommendation #258 – The Agency should “pilot” test the use of organic herbicides and mulches for vacant lots to suppress weeds.**

PWA agrees with this recommendation. The existing Integrated Pest Management policy limits the use of pesticides in parks (Resolution No. 73968 C.M.S. dated 12/16/1997). Organic herbicides were not available at the time the policy was adopted. The Agency should research and test organic herbicides in collaboration with Alameda County (who regulates the use of herbicides) and make appropriate recommendations to the City Council. This could include use of organic herbicides on vacant lots to control weed growth.

**Recommendation #259 – The vegetation control crew should be reallocated to the Park Maintenance Section.**

PWA does not agree with this recommendation. As described above, this function is unrelated to Park Maintenance.

**Recommendation #260 – Reclassify through attrition the remaining six positions assigned to the vegetation crew as Gardener II's upon their reassignment to the Park Maintenance Section.**

PWA does not agree with the reduction in this staff as described above.

**Recommendation #262 – The City should expand the waste hauler’s responsibilities to include inspection and maintenance/repair of waste containers placed along the City’s streets upon renewal of the contract in 2012.**

The current contract with Franchise Solid Waste Company expires in 2012; changes can be considered for the new contract.

**Recommendation #263 – Staffing for waste container maintenance and cleaning can be reduced by four (4) positions, through attrition, with the reallocation of this responsibility to the City’s solid waste hauler.**

The current contract with Franchise Solid Waste Company expires in 2012; changes can be considered for the new contract.

**Recommendation #264 – The efficiency of illegal dumping waste collection can be enhanced, enabling the reduction of nine (9) positions. Nine (9) positions should be eliminated through attrition.**

PWA does not agree with this recommendation. Detailed information was provided to MCG regarding the staffing levels associated with illegal dumping activities. We have reviewed the recommendation and agree with the acquisition of mini-refuse packers as this is likely to increase efficiencies. However, we do not agree this will eliminate the need for 9 FTEs. The recommendation states that there are a total of 35 positions assigned to illegal dumping. For clarification there are 32 positions which work three shifts. This recommendation only deals with deploying packer trucks and pickup trucks to abate illegal dumping, and removing appliance, tire, and e-waste. It does not address the remaining staff and equipment assigned to other blight-related activities such as abatement of homeless encampments, shrine removals, special event support, illegal dumping in parks, request from OPD for vehicle cleanouts prior to towing, and supervision of work furlough participants on weekends. Furthermore, as illustrated below, in order to cover three shifts at current service levels, 32 FTEs are needed.

Monday thru Friday (13 FTE)  
Saturday (10 FTE)  
Sunday thru Thursday (9 FTE)

The recommendation also states that three of four geographical areas are allocated a 2-person crew with a rear loader mini-refuse packer. For clarification, all four areas have a 2- person crew assigned to large refuse packers, and not mini-refuse packers.

**Recommendation #266 – Litter Enforcement staffing exceeds workload and staffing requirements by three (3) positions. Three (3) positions should be eliminated through attrition.**

PWA does not agree with this recommendation; however, the Agency may have to consider it due to budgetary constraints. Currently there are six positions, two of which are vacant. Under the Audit recommendations, the remaining 3 Litter Enforcement Officers would have to cover 6 SDS areas for enforcement, investigation and community outreach/education. They would have increased numbers of hot spots to monitor; caseloads would increase and each would attend more neighborhood/ community meetings. Potential impacts would be a decrease in outreach and education, Truck Notifications and abandoned vehicle citations.

**Recommendation #267 – Keep Oakland Clean and Beautiful Supervisory staffing exceeds workload by three (3) positions if previous staffing adjustments are implemented. Three (3) positions should be eliminated through attrition.**

The supervisory staff to employee ratio is currently 1:16. PWA would review and implement Supervisory reductions in line with any staff reductions that are implemented.

**Recommendation #271 – The Administrative Services Manager position authorized in the Facilities and Environment – Assistant Directors Office should be transferred to the Administrative Services Department.**

**Page 422 – A Management Analysis program would be established in the Administrative Department. This would consist of two positions transferred from the Facilities and Environment Department: an Administrative Services Manager and a Clean Community Supervisor. These positions should be reclassified, through attrition, within the Budget and Operations Analyst series.**

PWA is not in agreement with these recommendations. While it is acknowledged that there is a lack of staff in the Agency to provide analysis and analytical support, the positions recommended for transfer currently provide those services to the Department of Facilities and Environment and transferring them to another part of the Agency would not address the overall shortfall. The MCG recommendation would shift the problem, not solve the problem.

**Recommendation #281 – The responsibility for managing all of the City's buildings would be consolidated with the Facilities Manager.**

PWA is not in agreement with this recommendation. PWA does not see any opportunity for organizational efficiencies or savings through a re-organization as proposed and the Audit did not define any data to support the recommendation.

As explained to MCG, the functions reside in two Divisions, Facilities Services (FSD) and Parks and Building Maintenance (PBMD) to address the two distinct areas of building maintenance and operations.

Facilities Services Division provides “direct tenant services” in support of the tenant agencies in large buildings such as City Hall, Dalziel, Lionel J. Wilson, Police Administration Building, Eastmont Substation, Museum, Main Library, MSC, and two senior centers. It is made up of four units, Custodial Services, Building Engineering and Project Design. It also oversees the Citywide Security contract. (Totaling 100 FTE) The Building Maintenance Unit of Parks and Building Maintenance Division (PBMD) has staff consisting of skilled trade carpenters, painters, electricians, plumbers, construction and maintenance mechanics that supports the smaller free-standing buildings including Fire Stations, Recreation Centers, tot lots, branch libraries, and all the fencing, outside restrooms, picnic tables, and many other items related to all City properties. (41 FTE’s) A major portion of the work in Parks and Building Maintenance Division is in the Parks and at Recreation Centers which is why they are in the same Division with the Park and Landscape maintenance staff who work closely together to resolve the many challenges of ongoing vandalism and the aging infrastructure.

**Recommendation #286 – The Engineering & Construction Department should be transferred from Community and Economic Development Agency to the Agency.**

**Recommendation #287 – The engineering staff assigned to Building Services for the purposes of development engineering should be assigned to the Engineering and Construction Department. The staff should continue to be located in the City’s permit center, but report to the manager for the Engineering and Construction Department.**

PWA agrees with this recommendation. However, PWA strongly recommends that these two recommendations be implemented in concert with one another, one recommendation should not be executed without the other.



## Memorandum

To: Dan Lindheim, City Administrator

From: Michael Neary, P.E., Deputy Director

Date: April 14, 2009

Re: Public Works Agency Performance Audit

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Thank you for the opportunity to comment on the subject audit. Following is a brief summary of comments relative to those items in the audit that touch CEDA and the Department of Engineering and Construction (DEC). I have also offered comments relative to the overall issues raised in the audit because there remain very strong linkages between CEDA DEC and the Public Works Agency.

This memo was prepared based on a review of the Audit dated March 12, 2009. We also met with the Auditor on April 2. Following that meeting I provided some additional information, as requested, directly to Mr. Goelitz. Some of that information may have been incorporated into the final version of the audit, not available to me at this time.

### ***Overall Comments***

Overall, the audit presents a complex picture of the Public Works Agency and public works (small p, small w) activities in Oakland and covers an extremely broad spectrum of these activities. One theme that clearly runs throughout the document is that Oakland is significantly under-resourced in the area of infrastructure management, both in maintenance and construction of new or updated elements. Our discussions with member cities of the California Multi-Agency Benchmarking Group, comprised of the seven largest cities in California, support this, with Oakland having the smallest capital improvement program among these cities.

The Audit recommends significant increases in infrastructure investment, though aside from Construction Impact Fees for roadways and use of the Quimby Act for parks (limited to new park construction?) there is little discussion of other potential funding sources. It is not clear whether the audit is recommending that existing City resources (General Purpose Fund) be redirected to infrastructure, new revenues be identified, or whether there is state or federal funding that is available for this purpose. A separate discussion of this issue with strategic recommendations would be very helpful and potentially drive a policy discussion toward resolving these issues.

The City would also benefit from a discussion of what impact the overall condition and the amount of deferred maintenance of Oakland's infrastructure has on the ability to manage the infrastructure adequately. For example, the audit touches on the concept that the City should consider abandoning some areas of responsibility given existing resources. This is a significant proposal that would benefit from a separate, summary level discussion with specific recommendations of what assets should be considered for abandonment, and what options may exist to mitigate the impact of that action on the public.

### ***Specific Comments***

#### Page 94 et. seq., Asset Management

The discussion of asset management provides guidance toward general asset management principles but does not address utilizing information already in the city's Oracle financial system, which is used to depreciate assets in compliance with GASB 34. This data would be useful in planning long-term asset replacement needs. Public Works and DEC staff discussed this issue with staff from the Finance and Management Agency, Controller's Office. We will continue to work with the Controller to develop this further.

#### Page 109, Master Plan for Sanitary Sewer Collection System should be updated.

The audit raises a good question regarding master planning of specific assets within Oakland's infrastructure. In the case of the sanitary sewer system, the audit suggests the need for a master plan for the sanitary sewer collection system. However, the audit does not note that master planning for the sanitary sewer system is regulated by the Regional Water Quality Control Board (RWQCB) and the Region 9 of the Environmental Protection Agency (EPA).

We are currently completing work on an ambitious 25-year program to reduce wet weather related overflows from the sanitary sewer collection system. (Note, the audit references a 20-year plan. This plan was modified to a 25-year plan in the 1990's.) Five years remain on the program which is mandated by the RWQCB under a consent decree. When complete, over 30% of Oakland's sanitary sewer collection system will have been rehabilitated, storm sewer cross connections eliminated, capacity increased and overflows decreased. The audit notes the significant increase in population since the time of the initial study. However, the audit does not note how much of this growth was anticipated nor note that the most significant problem addressed by the I/I correction program is wet weather overflows which are dependent upon the length and condition of collection system pipes and not significantly impacted by population growth.

The annual capital improvement program for sanitary sewers is regulated by the RWQCB and is in compliance with RWQCB requirements. In anticipation of the completion of the 25-year plan, staff is working directly with the various collection agencies within the East Bay Municipal Utilities District (EBMUD), the RWQCB and EPA to establish and plan for future improvements to the collection system. It is anticipated that a new and specific compliance plan for capital improvements to the collection system will be developed in the next two years as a result of this effort.

#### Page 111, Street Rehabilitation

The audit recommends a significant increase in the use of slurry seal in Oakland. The rehabilitation program managed by DEC has already increased the use of slurry seal, which had been essentially eliminated some time ago, in compliance with the Metropolitan Transportation Commission (MTC) guidelines for pavement management. DEC uses the MTC pavement management system "StreetSaver" to program Oakland's annual pavement rehabilitation work. The distribution of the various pavement preservation and rehabilitation tools (slurry, rehabilitation, mill/grind, etc.) is in compliance with MTC guidelines, which is a requirement of continued state and federal funding for this program. We strongly agree that the funding for pavement rehabilitation and maintenance be increased over current baseline appropriations.

Page 295, *City should adopt a policy that requires that operations and maintenance funding be provided in the operating budget for the agency as part of accepting new assets to be maintained.*

We strongly agree with this recommendation and have already taken steps toward a similar policy. DEC works with the Budget Office and the City Administrator and client departments in developing the Capital Improvement Program. This year, DEC developed a new protocol for requesting capital improvement projects that requires an analysis of operating impacts of new capital improvement projects. For example, if a new library is proposed the cost for custodial services, energy, librarian staff and other operating costs are required to be identified as part of the overall cost of the project. These costs are captured in a new database developed by DEC staff, in collaboration with Public Works and the Budget Office. In addition, DEC has recommended that formal consideration of the Capital Improvement Program be moved to the mid-cycle years of the City's budget cycle so that proposed projects may be thoroughly considered by Council. Finally, DEC is working to develop a Capital Improvement Program that is based on 2-, 5-, 10- and 25-year planning horizons. We believe that these changes will address the issues raised in the audit in this regard.

Page 321, *Sewer Service Fund Revenues are being used inappropriately.*

This conclusion is not supported by the facts. By way of background, the fund summary report appearing on Page 323 and used in the financial analysis was prepared by staff in DEC specifically to provide the type of top level summary of fund expenditures that is not available through the Oracle financial system. This same report is prepared and reviewed on a monthly basis and is also used for Funds 1750 and 2211. It was actually developed with the intention of assuring we were using funds properly, to support trend analysis and to plan for future allocations. When I initially met with the Auditor I explained this.

There are several other factors specific to understanding Fund 3100. They include:

- Capital project costs are captured in the bond trustee account and do not show under the "capital organizations" in the summary report
- Project staff in DEC are "master-filed" in "home funds" but charge to specific projects throughout the year.

The audit states that DEC is budgeted at \$10 million, or 32% more than is budgeted for "maintenance and repair" of the system.

Actual staff charges, year-to-date, for DEC are \$4.2 million. Anticipated charges at year-end are \$6.3 million. Of these charges, \$2.5 million is budgeted for Right-of-Way Management activities, with anticipated year-end charges of \$2.3 million. These costs are anticipated to be offset by permit and inspection fee revenues of \$1.6 million. We agree that the non-sewer related costs in this unit would more appropriately be budgeted within the General Purpose Fund or the Development Services Fund.

All staff in DEC, with the exception of the Deputy Director and three Division Managers, are project funded. Because of the way the City currently budgets for project-funded positions, each FTE is "master-filed" within one of several funds in DEC but charges their actual time to

specific projects. For planning purposes it is estimated that 80% of staff time is dedicated to projects, 20% to "non-project" work. However, 100% of their time shows as a budgeted expense within those respective funds. Based on the year-to-date actual costs as of Period 8 (February) we anticipate that total staff costs in DEC to the sewer fund will total \$4 million at the end of this fiscal year for both project and non-project time. Staff is currently designing sanitary sewer projects with a total value of \$23 million, including approximately \$10 million in projects that will be proposed for Federal Stimulus funding.

Non-project activities include:

- Assistance to DIO staff as needed to resolve sewer issues
- Staff to the Technical Advisory Board of East Bay Municipal Utilities District
- Development of the master plan for comprehensive Pump Station upgrades citywide
- Coordination with EPA and Regional Water Quality Control Board on compliance with the City's plan and analysis of proposed changes to that plan

Going forward, staff is working with the Budget Office to establish a Clearing Fund to budget staff who will be assigned to projects, with offsetting revenue from budgeted capital projects. This will eliminate the problems posed by master-filing capital project staff in various funds.

The audit also suggests that Traffic Engineering and Street Design activities are being funded through the Sewer Service Fund. As discussed when we met previously this is because staff who were master-filed in the Sewer Fund moved to these divisions as part of the DEC Rotation Program for Engineers. Actual charges within these groups are minimal and from charges prior to the rotation. For example, Traffic Capital (Org 88363) shows a budget of \$185,303 but actual expenditures are \$22,502 as of February, 2009.

Finally, the audit recommends that the fund manager for the Sewer Fund be in DIO rather than in DEC. This may be due to the interpretation of the financial information discussed above, or due to asset management considerations. In either case, we have discussed this recommendation with the Public Works Agency. Both DEC and Public Works agree that the fund and program manager should remain in DEC due to the long-term planning and analysis needed to manage this program. It should be noted that Public Works and DEC have maintained an ongoing effort to work collaboratively on the sewer program regardless of any organizational differences.

Page 327, Property Owners Should Be Responsible for Repairs to Sidewalk

Last year DEC was successful in moving through Council legislation establishing a revolving fund to pay for repairs to sidewalks that are the responsibility of property owners when those owners refuse to make those repairs in a timely fashion. DEC has also adopted a corridor approach to sidewalk repairs to prioritize repairs with high pedestrian volume. Under this program the City will notify all property owners along a selected corridor of upcoming work. The City will complete repairs at locations that are damaged by City trees or fronting City property. Under this program the property owner may elect to pay the City to have its contractor complete the repairs, at the City's stipulated rate, or hire their own contractor. If a property owner refuses to undertake these repairs, the City will complete them under contract and lien the property, using the revolving fund. We believe that this process will expedite repairs to a significant



Dan Lindheim, City Administrator  
April 14, 2009

amount of sidewalks while providing a higher level of customer service to private property owners who need to make repairs to their sidewalk.

Page 409, Recommendation to move DEC to Public Works

The original intent of the move of DEC to CEDA was to centralize engineering functions in Oakland. As the audit acknowledges, the Engineering Services function (plan review, mapping, etc.) has not yet been combined with DEC. This must take place before reorganization back to Public Works is done. Once that is accomplished we believe the recommendation has merit.

Thank you for the opportunity to comment on this audit. The document creates a baseline from which discussion around Oakland's infrastructure management can begin, and hopefully the policy, management and financial considerations to best manage those assets.

Cc: Walter Cohen





April 27, 2009

**To:** Courtney Ruby, City Auditor, City of Oakland

**From:** Gary Goelitz, Vice President, Matrix Consulting Group

**Subject:** Matrix Consulting Group (MCG) Response to the Public Works Agency Comments Regarding the Public Works Agency Performance Audit

This represents the MCG response to the comments made by the PWA regarding the performance audit of the PWA in their response dated April 3, 2009. In instances in which the PWA response was to agree with the recommendations contained in the performance audit, the MCG did not respond. Examples of this are the PWA response to recommendations #18 and #19. If the response by PWA was a conditional response (PWA agreed with the recommendation under certain conditions), the MCG did respond.

#### **1. PWA Comments Regarding Enhanced Administrative and Management Protocols**

The Public Works Agency stated that “there are certain types of recommendations that are made throughout the audit report that are very good recommendations and management best practices, and that singularly seem easy to implement without a significant impact to staffing resources. However, taken in the aggregate, a different picture emerges. The following example is illustrative:

Plans recommended	16
Planning processes recommended	15
New management reports recommended	10
New policies or updates	20
Studies	2
Audits/assessments/monitoring	5
Inspections/inventories	7
New board & councils	4
Trainings	5
<b>Total</b>	<b>84</b>

While PWA agrees with the vast majority, if not all of these recommendations, they constitute a full 30% of the total recommendations and could not be implemented without a comparable increase in administrative and management analyst support.”

## **MCG Response to PWA Comments Regarding Enhanced Administrative and Management Protocols**

The MCG uses a benchmark of one (1) analyst for each one hundred and seventy-five (175) positions in a local government. For the Agency, this would indicate the need for approximately four (4) analyst positions. Compared with existing levels of analyst staffing, this would indicate that the Agency is authorized two (2) more administrative analyst positions than necessary, excluding the position assigned to the workers' compensation program. There are sufficient **existing** analytical resources available within the PWA to address these recommendations if the implementation of the recommendations and management best practices were made a priority by the PWA.

### **2. PWA Comments Regarding Additional Funding Required**

The audit makes recommendations regarding the level of additional funding that should be appropriated on an annual basis to adequately preserve and renew some of the City's assets. While these figures are presented individually throughout the report, it is important to summarize here:

<b>Category</b>	<b>Annual Amount</b>	<b>Comments</b>
Street Resurfacing	\$30 Million	This represents the minimum amount to keep the pavement condition index at the current level.
Slurry Sealing	\$8.75 Million	To keep streets in good or better condition from deteriorating
Fleet Replacement	\$8.5 Million	This represents the minimum amount. The range is \$8.5 Mil to \$10.5 Mil
Sanitary Sewer Rehab or Replacement	\$7.5 Million	This represents the minimum amount of capital funding.
Traffic Signal Controller Replacement	\$0.5 Million	This represents a minimum amount of capital funding.
<b>Total Recommended Funding</b>	<b>\$55.25 Million</b>	

While the audit recommended the Agency develop long-term plans for the renewal of the rest of the City's assets without specifying an actual amount for the Agency to target, PWA is offering the following estimates based on its knowledge of these assets to serve as reference for the readers:

Category	Annual Amount	Comments
Storm Drainage System	\$13 Million	This allocates \$8 Mil for capital and \$5 Mil for maintenance
Sidewalk Repair	\$4 Million	This takes \$28 Mil in tree-related damage and repairs it over a 7 year cycle
Facilities	\$3.2 Million	This addresses the most pressing deferred maintenance over 5 years
Park Capital Renewal	Not Available	An assessment and capital plan need to be developed
Traffic Signal Replacement	Not Available	An assessment and capital plan need to be developed
<b>Total Known Funding Needs</b>	<b>\$20.2 Million</b>	

While this does not cover all the categories of City assets (such as Parks and Traffic Signals), nor completely address a particular category's needs (facilities does not include capital replacement of buildings beyond their service life), it does nonetheless point to a significant minimum annual funding need of \$75.45 Million, just to address the City's most pressing deferred maintenance needs.

#### **MCG Response to PWA Comments Regarding Additional Funding Required**

The report to the City Council in November 2007 regarding the City's pavement management program did not address the use and application of slurry seal. It only addressed the use and application of pavement overlays. If slurry seal was utilized effectively, it is likely that the amount of funding required for pavement overlay would be reduced and **reduced drastically**. The funding required for the pavement management program to maintain the existing pavement condition index was **a total** of \$30 million; this was **not** \$30 million in additional annual funding. The amount of funding required for slurry seal - \$8.75 million - should be included in the total amount required for the pavement management program – the \$30 million – and not in addition to the \$30 million.

The City is already providing some amount of funding for fleet replacement through the master lease payments. As the MCG notes in the report, the City should increase its funding for the replacement of the equipment fleet by \$5.5 million annually. That recommendation presumes that the lease purchase payments represent an ongoing commitment by the City to fleet replacement, and one that would continue after the master lease payments are completed.

The Sewer Service Fund, if the fund expenditures are appropriate to the purpose of the fund, has sufficient revenues to meet the renewal and rehabilitation requirements of sanitary sewer infrastructure. Ongoing inflation increases would be required to be factored into the rates, but no wholesale increases would be necessary if the fund expenditures are appropriate to the purpose of the fund.

The funding required for stormwater infrastructure needs to consider the funding

provided by the Alameda County Flood Control District to address the needs identified in the master plan. PWA's discussion fails to consider that source of funding, particularly for major projects. The \$5 million required for maintenance, from the perspective of the MCG is unnecessary. The PWA has more than sufficient staffing to address maintenance requirements of the stormwater infrastructure needs. While annual funding would be required for minor capital projects that could be performed by the existing staff, these minor capital projects should not require anything close to \$5 million annually.

As noted, the park capital renewal and traffic signal replacement requirements need to be defined in a formal capital plan. The PWA has not yet developed these plans. However, the MCG included an estimate of the annual cost requirements of a key component of traffic signal replacement – traffic controller replacement.

The comment made by the PWA regarding the minimum annual funding need of \$75.45 million significantly overstates the capital requirements necessary for the reasons noted above.

### **3. PWA Comments Regarding Benchmarking and Industry Standards**

The audit uses benchmarks and industry standards for some of its recommendations, and for others such as illegal dumping, graffiti abatement and weed abatement, for example, it does not. Perhaps none exists for some of these functional areas; nonetheless, this should be clearly noted in the audit report. Furthermore, where benchmarks and industry standards exist, there are challenges in ensuring comparisons are meaningful because there are usually several variables involved.

Take preventative maintenance for streets as an example. Crack sealing is a preventative maintenance practice that is integral to a good street asset management plan. However, it assumes a street asset that is in good condition. If your asset is in a deteriorated condition, you are more likely to be focusing on asset failures such as pothole and base repairs, and not have enough time to address preventative maintenance activities like crack sealing. This holds true for other program areas with assets beyond their service life. The audit fails to factor in the condition of an asset in applying industry benchmarks where appropriate.

Another variable with benchmarks, particularly those involving productivity, is the condition of the equipment and fleet. While the audit addresses the issue that the City has an over-aged fleet, recommends a substantial increase (\$8.5 Mil total) to the fleet replacement budget, and acknowledges the increased demand this places on the Fleet staff, it does not address the impact of an over-aged fleet on program maintenance staff's productivity due to the compartmentalized nature of the report. For example, our sewer power rodders, while not yet exceeding their service life, they are definitely toward the end of it. Consequently, sewer maintenance is reporting increased equipment failures that directly affect the crews' productivity. This also holds true for other program areas that suffer over-aged equipment within their equipment portfolio.

The audit makes recommendations about various equipment changes designed to enhance productivity of our maintenance operations staff but fails to note the impact of the existing over-aged equipment on our staff's productivity.

The audit recommends significant staffing changes, through either proposed reductions, additions or reorganizations. The audit proposes to eliminate 100 position (through attrition) by either outsourcing the function, eliminating the program they support, purchasing additional equipment to increase efficiencies and thus reducing the required staffing levels, converting full time positions to part-time positions, or by making findings that staffing exceeds the workload based on benchmarks or industry standards. Some of the recommendations disregard the City Charter prohibiting the Agency from contracting out work that City staff currently performs. Additionally, PWA Management is concerned that where staff reduction recommendations were proposed for asset maintenance programs based on 'industry benchmarks', no correction was factored in to account for the condition of the assets, as discussed previously.

The audit also recommends the addition of 34 positions. These are either to augment under-staffed program areas (such as traffic signals maintenance, sign maintenance, traffic painting, and skilled building maintenance staff, for example) or to better help the Agency manage and analyze the data its work should generate. Towards this end, additional budget analyst staff, new GIS support staff (Spatial Analysts), along with the return of IT support staff that were recently centralized in the City's Department of Information Technology (DIT) are recommended. Again, PWA Management is concerned that the recommendation for additional maintenance staff associated with deteriorating assets be confirmed as adequate if the benchmark data used was not modified to account for the condition of the assets, as previously discussed.

Finally, while it highlighted some examples of the Agency's strengths, the performance audit "by its nature, focus[ed] on opportunities for improvement." Given this, the Agency will take as a compliment the absence of any discussion about the operations of the Environmental Services Division (ESD) or the Agency's role as an Emergency First Responder. The Agency is proud of the role ESD's work has played in helping secure a Top Ten Green City designation by all of the organizations that rate green cities and is equally proud of its work around emergency preparedness and response.

### **MCG Response to PWA Comments Regarding Benchmarking and Industry Standards**

The MCG did discuss the condition of street assets. The MCG noted that 73% of the City's streets were rated as good or very good. Certainly those streets are good candidates for crack sealing.

The MCG did in fact note the impact of the condition of the fleet on the productivity of the PWA staff. The MCG recommended a new type of pothole patching trucks that would enable a reduction of crew sizes, and recommended the replacement of sanitary sewer equipment, including sewer rodders, sewer jetters, and easement sewer orders, due to the impact of that equipment on crew sizes. The MCG recommended additional

equipment and increases in the asphalt annual budget for the Major Paving Crew to enable improvements in the productivity of that crew.

The MCG did consider in the use and application of its benchmarks the impact of assets. In fact, the MCG drastically reduced its benchmark productivity standards in stormwater, for example, to fit the conditions in Oakland. This also presumes that Oakland's assets are in dramatically worse condition than other cities. This is not the case. Most cities in the Bay Area face the same type of asset condition and funding challenges for asset renewal and rehabilitation as Oakland.

#### **4. PWA Comments Regarding Functional Areas Not Covered**

Finally, while it highlighted some examples of the Agency's strengths, the performance audit "by its nature, focus[ed] on opportunities for improvement." Given this, the Agency will take as a compliment the absence of any discussion about the operations of the Environmental Services Division (ESD) or the Agency's role as an Emergency First Responder. The Agency is proud of the role ESD's work has played in helping secure a Top Ten Green City designation by all of the organizations that rate green cities and is equally proud of its work around emergency preparedness and response.

#### **MCG Response to PWA Comments Regarding Functional Areas Not Covered**

The MCG indicated that it would not analyze those areas of the PWA that seemed to be working well. That was the nature of the analytical process discussed with the PWA Executive Management Team during several meetings.

#### **5. PWA Response to Recommendation #3 - Revising Its Mission Statement.**

PWA believes that this mission statement meets the MCG criteria of a mission statement. However, PWA also believes in and commits to making improvements on a continual basis.

#### **MCG Response to PWA Comments Regarding Recommendation #3**

From the perspective of the MCG, the existing mission of the Agency does not clearly state the purpose of the Agency, identify what the Agency does (what business the Agency is in), why the Agency does it, and why public resources are devoted to the effort. In addition, the Agency has not developed a vision and values statement to accompany its mission statement. That critique is still valid from the perspective of the MCG.

#### **6. PWA Response to Recommendation #4 - Revising Its Vision Statement.**

As part of PWA's Self-Assessment and Accreditation Process with APWA (American Public Works Association) received in August 2006, PWA developed a vision statement as follows: *The Public Works Agency strives to be a reputable and recognized leader in*



*providing services and a source of pride within the community.* PWA believes that this is a sound vision statement. However, PWA also believes in and commits to making improvements on a continual basis.

#### **MCG Response to PWA Comments Regarding Recommendation #4**

From the perspective of the MCG, the vision statement fails to meet the key elements of an effective vision statement identified in the report. It does not describe future service levels, for example, provide the highest quality management and maintenance service, customer service and stewardship of infrastructure, fiscal, and natural resources entrusted to our care. We enhance public health and safety and contribute to the economic viability and livability of Oakland. We are a recognized leader among public works agencies across the country.” It does not discuss its partnership with employees as another example.

#### **7. PWA Response to Recommendation #6 - Revising Its Values Statement.**

With respect to MCG’s suggestions for enhancements, PWA also believes in and commits to making improvements on a continual basis.

#### **MCG Response to PWA Comments Regarding Recommendation #6**

As noted by the MCG, the value statements should be expanded to address financial health (maintain fiscal integrity, undertake sound financing practices and ensure auditable results), partnering with the community (partner with our community, our customers and regional public works interests), stewardship of natural resources (protect the natural environment so its benefits are available to meet today’s needs as well as those of future generations), effectiveness (make the most appropriate use of resources and infrastructure), and equity (ensure fair treatment and service to all). The PWA values do not address these needs.

#### **8. PWA Response to Recommendation #11 - the Agency Should Develop A Communication Plan To Guide Communication With The Media, Residents, Businesses, And Agency Employees.**

PWA agrees that a communication plan should be developed and implemented. This work requires resources.

#### **MCG Response to PWA Comments Regarding Recommendation #11**

As noted earlier, the MCG uses a benchmark of uses a benchmark of one (1) analyst for each one hundred and seventy-five (175) positions in a local government. For the Agency, this would indicate the need for approximately four (4) analyst positions. Compared with existing levels of analyst staffing, this would indicate that the Agency is authorized two (2) more administrative analyst positions than necessary, excluding the position assigned to the workers’ compensation program. From the perspective of MCG,

some of these staff resources could be allocated to the development of a communication plan.

**9. PWA Response to Recommendation #16 – The Human Resources Section of the Agency Should Develop A Training Course Regarding Administration Of The City’s Attendance Management Policy.**

PWA agrees that on-going training for managers and supervisors regarding managing employees relative to the City’s Attendance Management Policy is necessary. However, this work requires additional resources. The Human Resources Section of the Agency is currently limited to two (2) professional human resource employees for 60 managers and supervisors and over 650 employees. MCG sites the benchmark for HR staffing is “one (1) human resources position for each seventy (70) positions in local government (page 389). For the Agency, this would indicate the need for approximately nine (9) human resources positions.”

**MCG Response to PWA Comments Regarding Recommendation #16**

The PWA does not consider in the benchmark cited by the MCG regarding the staff resources available in the City’s Human Resources Department. Regarding the resources available in that department, more than sufficient human resource staff resources are available. Additional human resource staff resources are **not** needed for the PWA or recommended by the MCG for the PWA. Sufficient staff resources are available in the Agency for the development of this policy.

**10. PWA Response to Recommendation #25 – The Agency should adopt a comprehensive policy governing oversight of overtime.**

In January 2008, PWA did issue a directive requiring Assistant Directors review and approve all scheduled overtime. PWA recommends that Oracle payroll codes be created to capture the different overtime usage types. Also, the Recommended Overtime and Compensatory Time Reports listed on pages 82 – 84 appear to be excessive relative to the actual use of overtime in PWA. While many of the reports listed would provide good and useful information, PWA questions the effort required to develop and maintain these reports compared to the benefit of having them.

**MCG Response to PWA Comments Regarding Recommendation #25**

The MCG is aware that the PWA developed an overtime policy. However, the policy consists of two sentences: “effective immediately, I want to ensure that all scheduled overtime work is reviewed and pre-approved at the Assistant Director level, until we can develop the appropriate criteria, along with a system of checks and balances. Please inform you staff and put in place a system to accomplish this.” The MCG cites a number of elements to an effective overtime policy in the report. The existing PWA policy does not include those elements.

The reports recommended by the MCG within the report are those reports necessary to manage a cost that amounts to several million annually. These reports should be developed and utilized if the PWA is to be able to address this cost in each division. As the MCG noted, some divisions are problematic in terms of their overtime usage.

**11. PWA Response to Recommendation #26 – Training Should Be Provided To Employees In Supervisory And Managerial Positions Regarding The Expectations Placed On Them To Manage Overtime/ Compensatory Time. Appropriate Resources Such As Reports And Labor Contracts Should Be Provided To Supervisors To Assist Them In This Obligation.**

PWA agrees that on-going training, analysis and useful reports should be provided to managers and supervisors regarding overtime/compensatory time management. However, current resources are limited, with two (2) professional human resource employees for 60 managers and supervisors and over 650 employees. MCG sites the benchmark for HR staffing is “one (1) human resources position for each seventy (70) positions in local government (page 389). For the Agency, this would indicate the need for approximately nine (9) human resources positions.” This work requires additional resources.

**MCG Response to PWA Comments Regarding Recommendation #26**

The PWA fails to consider in the benchmark cited by the MCG the staff resources available in the City’s Human Resources Department. Considering the resources available in that department, more than sufficient human resource staff resources are available. Additional human resource staff resources are **not** needed for the PWA or recommended by the MCG for the PWA. Sufficient staff resources are available in the Agency for the provision of this training.

**12. PWA Response to Recommendation #28 – Each Section In The Agency Should Develop A Comprehensive, Written Policies And Procedures Manual And Recommendation #29 – Each Section Manager Should Be Assigned Responsibility For The Development Of A Comprehensive, Written Policies And Procedures Manual. The Policy And Procedures Manual Should Be Published To The Agency Intranet.**

PWA succeeded in developing a Personnel Policies and Procedures Manual after a multi-year effort working with the Office of Personnel (Finance and Management Agency). This document is posted on the PWA Intranet site. In addition, PWA has developed Agency Standards (internal policies) and various Standard Operating Procedures (SOPs) that are also housed on the PWA Intranet site. PWA considers these policies and procedures living documents that are continuously improved upon or modified as the needs arise. The documents are intentionally posted on the PWA Intranet not only for PWA employees to access but for all City employees, if they so desire.

### **MCG Response to PWA Comments Regarding Recommendation #28 and #29**

The MCG is recommending the development of policies and procedures at the section – level. While some Divisions have developed or are developing these policies (e.g., Keep Oakland Clean and Beautiful), other Divisions have not. These SOPs need to be developed; the PWA has not fulfilled this need as of yet on an Agency-wide basis.

#### **13. PWA Response to the recommendation to Effectively Deploy the Global Positioning System.**

Reduces Fuel Costs. Idle Time Reduction: By monitoring the length of time an employee is leaving the engine running while stopped, program managers can correct this behavior and reduce fuel consumption. Large vehicles consume an estimated 0.82 gallons of fuel for every hour of idle time, while light duty vehicles consume an estimated 0.5 gallons per hour. PWA agrees. The Agency is in the process of developing an Anti-Idling Policy for off road diesel vehicles and for all City fleet.

### **MCG Response to PWA Comments Regarding to Effective Deployment of the Global Positioning System.**

The items cited by the PWA were the benefits of the effective deployment of a global positioning system, and a recommendation by the MCG.

#### **14. PWA Response to Recommendation #31 – The Administrative Services Department Should Work With Managers And Supervisors In Those Sections In Which Global Positioning Systems Are Deployed To Develop Management Reporting Systems Utilizing The Data Generated By The Global Positioning Systems.**

PWA can carry out this recommendation contingent upon the implementation of the recommendation on page 378 – The three positions that were transferred to the Information Systems Technology Department in Fiscal Year 2007-08 from the Agency should be transferred back to the Agency. An alternative would be for the Department of Information Technology (DIT) to carry out this recommendation.

### **MCG Response to PWA Comments Regarding Recommendation #31**

The implementation of recommendation #31 is **not**, from the perspective of the MCG, dependent upon the IT resources. The PWA has sufficient analytical resources available currently to implement these recommendations. Analytical staff resources are needed to implement this recommendation, not technology staff resources.

**15. PWA Response to Recommendation #33 - The Agency Should Conduct A Systematic Evaluation Of Its Services To Identify Its Core Services.**

The MCG recommendation, as elaborated upon on pages 92 – 93, will likely require the commissioning of a formal, professional survey of Oakland. PWA believes that the survey would be appropriately developed in concert with the Mayor and City Council as the City's policy makers. PWA could constructively use the information gathered from the survey to conduct a core services evaluation, as recommended.

**MCG Response to PWA Comments Regarding Recommendation #33**

There are a variety of tools available to ascertain the perspective of the Oakland communities regarding what are and are not core services for the PWA. It is unlikely that the City will soon have the funding available for a formal, professional survey in Oakland. The PWA should not wait for such funding to become available to initiate the evaluation of its services. It can initiate this evaluation and work with the community groups and its own staff to conduct such an evaluation.

**16. PWA Response to Recommendation #38 - The City's Budget Office Should Modify The Designated Fund Managers To Assign Responsibility For Fund Management To Those Managers Responsible For Managing The Asset.**

Currently, the Budget Office has assigned to PWA fund management responsibility of 22 funds. PWA elected to centralize the fund manager responsibility with the PWA Fiscal Services Manager because it is that individual who best understands the City's budgetary systems and their peculiarities. Within PWA, each fund also has a designated fund "subject expert" that is usually a division level manager, who provides specific guidance and information to the PWA Fiscal Services Manager as needed.

Irrespective of who in PWA is the designated fund manager, the more important issue with the fund management responsibility is that the fund manager has complete authority, backed by the Budget Office and City Administrator, to manage the fund(s). This would include the authority to determine and remove positions that are not appropriately budgeted in the fund(s) based on documented, intended uses of the fund(s), and through an evaluation of core services provided relative to the fund(s).

**MCG Response to PWA Comments Regarding Recommendation #38**

While this issue may seem minor, the MCG believes this issue is paramount in establishing accountability. The PWA Fiscal Services Manager should not be accountable for managing sanitary sewer maintenance operations and maintenance and the associated Sewer Service fund. The Operations Manager for Infrastructure Management should be held accountable. Splitting this responsibility results in fragmentation of accountability. The MCG agrees with the PWA that the fund manager should have complete authority, backed by the Budget Office and City Administrator, to manage the fund(s). This fund manager should not be one manager within the PWA –

the PWA Fiscal Services Manager. It should be those managers responsible for the management of asset operations and maintenance.

**17. PWA Response to Recommendation #44 – The Infrastructure And Operations Department Should Prepare A Long-Term Plan For The Implementation Of The Storm Drainage Master Plan.**

CEDA / DEC has been the lead in implementing the Storm Drainage Master Plan since its inception and are the lead in developing the City's Capital Improvement Program.

**MCG Response to PWA Comments Regarding Recommendation #44**

Much of the implementation of the Storm Drainage Master Plan requires that the staff of the PWA provide services in its implementation such as replacing storm drainage grates with grates that are more bicycle- friendly. In addition, other elements of the Master Plan require that the PWA provide maintenance services to preventively maintain and repair the storm drainage collection system. Those actions require the PWA to be an equal participant in the development of an implementation plan for the Storm Drainage Master Plan. In any case, an implementation plan for the Master Plan has yet to be developed.

**18. PWA Response to Recommendation #45 – The Infrastructure and Operations should develop a work plan to address the small to medium size projects within the high priority capital plan of the Storm Drainage Master Plan utilizing the staff of the Drainage Section.**

MCG's recommendation that "at current staffing levels, the Drainage Section could address many of the high priority capital repairs identified in Appendix O of the Storm Drainage Master Plan." This contradicts other recommendations of eliminating staff (see page 338). Some of the recommended repairs are currently being accomplished and are necessary because of zero capital improvement project dollars. All of these activities are necessary for the life and maintenance of our aged infrastructure. The Storm Drain Master Plan was developed to address flooding complaints and possible property damage from flooding. The Storm Drain Section manages repair lists for storm inlets and pipe repairs. Funding needs to be identified to implement the capital improvement program for the Storm Drain Master Plan. Storm Drainage Section staff addresses small to medium projects as they become priorities.

**MCG Response to PWA Comments Regarding Recommendation #45**

As the MCG explained to the PWA previously, the MCG recommendations regarding staffing reductions were to be implemented via attrition. Until the staffing is reduced through attrition, the existing staffing complement within Storm Drainage could be used constructively to address the capital improvements identified within the Storm Drainage Master Plan.

- 19. PWA Response to Recommendation #49 – The Equipment Services Division should prepare a five-year equipment replacement plan for the review of the operating departments and the Budget Office; recommendation #50 – The Agency should identify alternative sources of funding to meet equipment replacement needs; and recommendation #51 – The City should increase its funding for replacement of equipment fleet by \$5.5 million annually.**

The Equipment Services Division (ESD) currently has a ten-year replacement plan that is six years behind schedule in replacing vehicles and equipment. This schedule is reviewed and modified when evaluating vehicles and equipment for replacement. PWA agrees that alternative funding sources for vehicle/equipment replacement should be sought. The Agency had done this recently in identifying Master Lease interest income and Measure M funds for equipment replacement. However, the critical recommendation is for the City to increase replacement funding by \$5.5 million to \$8.5 million annually to keep current with operating departments' needs and to contain O & M costs.

#### **MCG Response to PWA Comments Regarding Recommendation #49**

ESD should update the replacement schedule on an annual basis.

- 20. PWA Response to Recommendation #62 – The Agency should initially set an objective of eliminating 210 vehicles from the City's fleet.**

PWA disagrees with this recommendation. MCG's audit of PWA began in June 2008, at which it was given a snapshot of the fleet. Since MCG's analysis, ESD has reduced the fleet size by more than 50 units. Furthermore, MCG acknowledges that analyzing fleet utilization is "just the first step in identifying underutilized vehicles". Rightsizing the fleet is a cooperative, collaborative process involving both Equipment Services Division management and staff, and operating departments. ESD will continue to work with user departments through the Fleet Utilization Management Committee to develop recommendations for elimination of underutilized vehicles.

#### **MCG Response to PWA Comments Regarding Recommendation #62**

The reduction of 50 vehicles is a **very minor reduction** in the City's fleet, less than 3%. The City's fleet is extremely underutilized, and the City can no longer afford this fleet given its replacement requirements. It is incumbent on PWA to demonstrate the leadership necessary to accomplish a substantive reduction the number of vehicles in the City's fleet. The reduction of 210 vehicles represents a 12% reduction in the number of vehicles in the fleet. MCG previously worked with a city in California of comparable population as Oakland and accomplished this scale of reduction.

**21. PWA Response to Recommendation #75 – The Agency should develop computer/ hydraulic models for the City’s sanitary sewer stormwater networks.**

PWA does not have any in-house expertise to develop these recommended models; however, CEDA/DEC staff does and they are the lead in developing, maintaining, and updating the computer hydraulic models as necessary.

**MCG Response to PWA Comments Regarding Recommendation #75**

This model is not being updated. The last models were developed as part of the sanitary sewer master plan in the 1980’s. As these master plans are updated, the PWA needs to assure that these models are updated. The PWA staff need to be able to use the model in evaluating the root causes of operations and maintenance problems.

**22. PWA Response to Recommendation #77 – The Infrastructure and Operations Department should prepare a policy study for the consideration of the City Council regarding the level of service for tree trimming.**

Trees that were approved and/or planted by the City are designated “Official”. All other trees growing on the right of way are “Unofficial”. The City accepts full responsibility for the maintenance of Official trees and the repair of all hardscape damage caused by Official trees. Routine maintenance (aesthetic pruning) and repair of hardscape damage caused by unofficial trees is the property owner’s responsibility. Unofficial trees are pruned or removed by City tree crews to abate hazards only. These trees were planted by others or grew naturally. The City provides the necessary service of abating hazards to reduce risk posed by these trees. The number of unofficial trees growing on the public right-of-way is unknown. To determine the right-of-way boundary and inventory those trees on every property would be costly. Accepting full maintenance responsibility would require a significant increase in tree maintenance funding. A policy study is unnecessary. The established tree planting policy has been in effect since being passed by the City Council as Ordinance #188 on April 21, 1932. The Street Tree Plan and its policies were developed by a City Council appointed Tree Policy Task Force and adopted by a City Council resolution on January 27, 1998. Funding is insufficient to accept the maintenance of all trees growing on the public right-of-way along with the corresponding potential liability.

**MCG Response to PWA Comments Regarding Recommendation #77**

The PWA is providing two levels of service at present to the residents and businesses of Oakland. If the tree is located between a curb and a sidewalk, the PWA will trim the street tree. If it is located behind a curb with no sidewalk, then it is the property owners responsibility. If that level of service is acceptable to the City Council, then a policy study is unnecessary.



**23. PWA Response to Recommendation #81 – The City should provide contractual funding on an annual basis for the proactive tree trimming of 7,350 park and street trees annually.**

PWA disagrees with the estimated cost to implement this recommendation. The recent tree pruning contracts were paid by one-time funds generated by unexpected real estate transfer tax revenues in fiscal year 2006. Five contracts were issued. 1,156 street and park trees were pruned. Considering the additional costs of writing and monitoring the contracts, the average pruning cost was \$510 per tree. A review of the Tree Services Division's costs determined that the crews' pruning costs were comparable. If the goal of pruning 7,350 trees by an outside contract was desired, the City Council would need to appropriate more than the amount indicated in the audit report. The average per tree cost to prune 7,350 trees for \$440K would be \$60 per tree. This figure is unrealistically low. An additional Tree Supervisor I would be needed to write and oversee such large pruning contracts. Approximately 30 trees per day would be pruned over the course of a one year contract.

**MCG Response to PWA Comments Regarding Recommendation #81**

The MCG has had the opportunity to evaluate the costs of routine, block-by-block tree trimming for cities in Northern California. The costs are dramatically lower than those cited by PWA. The contractual costs cited by PWA were for major boulevards. The unit costs would, of course, be higher for major boulevards. The PWA does not have any recent experience in the analysis of unit costs for citywide block-by-block tree trimming. An additional Tree Supervisor I would be unnecessary to manage the contract. There are more than sufficient supervisory resources available in the Section.

**24. PWA Response to Recommendation #95 – The role of Equipment Services Division staff assigned to the Hall of Justice should be modified to perform a higher portion of maintenance and repair at the Hall of Justice, reduce the need to transport some of these vehicles to 7101 Edgewater Drive for these services and reduce downtime; Recommendation #96 – The staff of the Police Department should check fluid levels in Police Department vehicles themselves as part of their pre-trip inspection of the vehicle they have been assigned; Recommendation #97 – Establish two Lead Automotive Mechanics and promote two mechanics to these positions. Assign these two Lead Automotive Mechanics to the Division's facility at the Hall of Justice; Recommendation #98 - Construct an equipment maintenance and repair facility at the Hall of Justice; Recommendation #99 – The Equipment Services Division staff assigned to the Hall of Justice should not work day, swing and night shifts, seven days a week. These staff should work a day and swing shift Monday through Friday; and Recommendation #100 – The Equipment Supervisor assigned to the Hall of Justice should be shifted to the 7101 Edgewater Drive facility to reduce the spans of control for other two Equipment Supervisors assigned to that facility.**

PWA disagrees. A higher level of service by Automotive Equipment Service Workers (AESW) requires construction of a maintenance facility (estimated at \$400,000; one-time cost) plus on-going costs of \$24,000 annually to support newly created lead automotive equipment mechanic positions (unsupervised). PWA questions the estimate for the facility costs, which amounts to \$139/s.f.; we recommend this estimate be further refined. In addition to the added expense, MCG's recommendation does not take into account the feasibility of constructing maintenance facility at HOJ is remote due to Caltrans reluctance to construct permanent facilities under an elevated freeway, which is where the current facility is located. Automotive Equipment Service Workers (AESW) have been placed at the Hall of Justice for two purposes: 1) to assure that vehicles are ready and available by completing minor repairs without removing the vehicle from service, and 2) to evaluate vehicles daily for damage, mechanical issues, fluid levels and other critical factors. Given that many of the marked police vehicles are used 24 hours per day, 7 days per week, failure to check fluids for a day or two can cause engine failure. AESW's focus is on the operability of the vehicle. Past experience with Oakland's fleet, as well as information from other municipal police fleets has shown that pre and post inspections by Police Department staff generally consist of walk-around body damage assessments. Furthermore, recommendation to promote two additional Automotive Equipment Mechanics, along with recommendation on page 196 to promote two Automotive Equipment Mechanics to lead positions and shift three to four mechanics to the swing shift would result in more than 50% of the automotive mechanic staff working without direct supervision.

**MCG Response to PWA Comments Regarding Recommendation #95, #96, #97, #98, #99 and #100**

As noted within the report, it is a prevailing practice of cities to take the delivery of repair and maintenance of vehicles to the major customers (e.g., Police Department), and not require the major customer to come to the Equipment Services Division. This is the case in Long Beach, California, Charlotte, North Carolina, Fort Worth, Texas, Sacramento, California, etc. It is not the case in Oakland. The major customers of the Equipment Services Division (e.g., Police Department and Fire Department) have legitimate grievances regarding the level of service provided by the Division. The Division needs to address these grievances by taking its service to its customers. The Equipment Services Division staff based at the Hall of Justice are grossly underutilized and undermanaged, as noted in the report. These staff can be much more effectively utilized to provide maintenance and repair of Police Department vehicles at the Hall of Justice, but lack the facilities to do so.

- 25. PWA Response to Recommendation #108 – The Equipment Services Division should provide point of sale receipts for each transaction. The point of sale receipts should be summarized in monthly reports provided to each department; Recommendation #109 – The Equipment Services Division manager should meet monthly with each department to review monthly reports and discuss the basis and nature of the costs;**

**Recommendation #110 – Major customers should be provided with access to Fleet Focus F/A.**

PWA partially agrees with this recommendation. Transaction detail for all PMs and repairs are available within the fleet management system. The Equipment Services Division disagrees that a POS receipt should be given to the driver of a vehicle at the conclusion of each transaction. Department managers, not individual drivers, are responsible for the costs of their portion of the fleet—summary information, with backup detail, should be presented monthly. Equipment Services Division management is implementing monthly department coordinator meetings to review monthly reports and discuss issues/concerns with user departments. With the upgraded FASuite rollout expected to be completed in April 2009, the Equipment Services Division will provide web access to major customers.

**MCG Response to PWA Comments Regarding Recommendation #108, #109, and #110**

The customers of the Equipment Services Division that the MCG talked to had little idea what they were getting in terms of levels of service and what they were paying for other than in terms of gross costs. If the upgrade of FASuite can provide on-line access to equipment repair and maintenance cost data for major customers, then that solution would provide that information to customers.

**26. PWA Response to Recommendation #112 – The crew size used for service calls and power rodding should be reduced to two (2) persons; and the crew size used for construction and repair should be reduced to four (4) persons supplemented by a backhoe operator when required.**

PWA disagrees with this recommendation. The crew size used for service calls throughout the City of Oakland for sewer related complaints should remain at 3 crew members. This is vital because the crew members have to investigate the complaint and troubleshoot the problem by checking sewer structures in street locations as well as easements. The three-man crews are also responsible for preventing raw sewage from getting into our storm inlets, waterways, and creeks. It takes all three crew members as first responders to contain and prevent sewage from entering any freshwater artery. Hand rodding sewer mains in street areas as well as easements are one of the areas the crew members troubleshoot problems. This action alone takes 3 crew members to perform.

- The Power Rodder requires 3 crew members to operate and position the equipment safely. One crew member (the operator) is elevated on the equipment and away from the manhole where the machine is set up. The other 2 crew members work together with the operator, providing operator and traffic signaling and performing the structure inspection.

- Closed Circuit Television Video (CCTV) must have 3 crew members to operate and set up the equipment. One crew member must operate the computerized equipment while inside the CCTV Unit. The other 2 crew members would prepare and place the camera into the Sewer Main for pipeline inspection. Once the camera is in place, 1 crew member must remain to the rear of CCTV unit, taking instructions from the computer operator inside the CCTV unit while the other crew member inspects all sewer structures where the camera is conducting its video pipeline inspection.
- Due to CAL-OSHA regulations our crew size for street excavations must remain at 5 crew members, backhoe operator and truck driver included. There are several functions that take place while performing spot repairs in the street area involving sewer line replacement. It is essential that all safety devices be in place before excavation. Shoring jacks must be placed in the trench, and depending on the pipe size of the sewer main the pipe itself must be lowered manually into the trench to a crew member. In addition, emergency retrieval equipment must be at the work site in case of an emergency. In order to perform these functions safely there must be at least 5 crew members on all street excavations.

### **MCG Response to PWA Comments Regarding Recommendation #112**

The use of 2-person crews for power rodding and responding to service calls is a practice in use in other cities such as Los Angeles (although when work is performed on major thoroughfares, a 3-person crew size will be used for safety purposes). There is no practical reason why the PWA should not be able to implement this recommendation under the conditions recommended by the MCG. The staff of the PWA are just as capable as the staff of the Wastewater Collection Systems Division of Los Angeles. The MCG would be interested in the opportunity to review that CAL-OSHA document that states that a 5 person crew size must be utilized for sewer construction; the MCG is unaware of any such CAL-OSHA requirement. And in any case, the PWA is using a six person crew for sewer construction, not a five person crew. The MCG did not make any recommendation for reduction in crew size for the CCTV crew.

### **27. PWA Response to page 87 - Productivity of staff assigned to Storm Drain Maintenance Section should be improved.**

#### **Page 87 – Productivity of staff assigned to Storm Drain Maintenance Section should be improved.**

PWA disagrees that the data used in this Audit fully captures the activities performed by the Storm Drain Maintenance crew.

Our Storm Drain staff will not have any problems with productivity as suggested (20+ storm inlets a day).

The challenge lies in the fact that our staff has to respond to a variety of requests besides storm drain maintenance calls, such as:

- Board up requests from Oakland Police Department.
- Citizen request for retrieval of personal property dropped in storm inlets.
- Replacing stolen inlet grates and Manhole covers.
- Emergency mud slide assistance (Covering and sandbagging mud slides)

These additional activities are not taken into account when calculating productivity. However, the Agency fully expects to capture all activities performed by the Storm Drain staff via Cityworks and thus calculate the crew's true productivity.

### **MCG Response to PWA Comments Regarding the need to improve the productivity of staff assigned to storm drainage.**

In this instance, the MCG reviewed the productivity of crews dedicated to cleaning storm drain inlets largely as an all day assignment. The productivity of these crews does not meet productivity benchmarks. The crews were **not** meeting the benchmark of cleaning 20 basins a day. In fact, these crews do not meet productivity benchmarks that were developed and utilized by the PWA in the 1980's, which are much higher than 20 drainage basins per day per crew.

- 28. PWA Response to Recommendation #135 – The crew size used for pothole patching should be reduced to two persons, the crew size used for major paving should be five persons for grinding and seven persons for asphalt overlay, the crew size used for concrete pouring should be reduced to three persons, the crew size used for constructing forms for concrete sidewalks should be reduced to two persons, and the crew size used for sidewalk grinding should be reduced to one person.**

PWA does not object to, nor endorse this recommendation; we will evaluate it further with the help of a new Operations Manager for the Infrastructure Maintenance Division.

We have one, two-person pothole crew and two, three-person pothole crews. Crews work in districts, not by location so it is necessary for safety reasons to have staffing of three's for some crews. When working on major thoroughfares and in high-traffic areas, it is necessary to increase the amount of staff for traffic control by one or two persons for safety.. During the Pothole Blitz, crew size increased because we were performing base repair and patching large stretches of roadway requiring more than one crew.

Our base repair crew resurfaces or reconstructs entire blocks versus 10 X 10 patches. The crew size is correct for the type of work performed. When the crew is repairing small sections of street, the crew is separated into two crews.

When the paving box is in operation the standard person count is two individuals to operate the box and four on the ground – two shovelers, and two rakers. At least one operator is needed for rolling. And a minimum of four people are needed for drivers to deliver the asphalt. If there are low clearances on the block a grounds person may be needed to assist the driver with raising/ lowering the truck bed to avoid damaging overhead wires and low branches. Flaggers may also be required. The average count is thirteen.

Our current Concrete Crew size is four persons – two to pour the concrete and two for demolition and forming. Depending on the size of the pour or demolition the size may increase.

We have three sidewalk grinders and three vacuums. For pedestrian and staff safety, we have crews of twos – one person operates the vacuum and one person operates the grinder.

#### **MCG Response to PWA Comments Regarding Recommendation #135.**

The crew sizes utilized by PWA for street and sidewalk maintenance are, in many instances, larger than benchmarks used by other cities. This includes pothole patching, major paving, concrete pouring, forming concrete, and sidewalk grinding. In fact, these crews, in many instances, do not meet crew size benchmarks that were developed and utilized by the PWA in the 1980's.

#### **29. PWA Response to Recommendation #138 – The Agency should enhance the effective deployment of the Major Paving Crew for street overlay and asphalt grinding, and *not* divert the staff resources to other work activities.**

Mechanical Gutter Cleaning is performed by the Base Repair Crew during the storm season. It is an important and required maintenance operation. It prevents flooding and reduces large slides. Pothole Blitz is when everyone in Street and Sidewalk Maintenance fills potholes and performs minor base repair in designated locations in Oakland.

#### **MCG Response to PWA Comments Regarding Recommendation #138.**

During the wet season and in preparation for the wet season, the Major Paving Crew should be utilized for mechanical gutter cleaning. However, this crew should not be utilized for the Pothole Blitz if the crew size recommendations made by the MCG are implemented. This practice represents a poor use of the Major Paving Crew. This crew should be focused on the grinding and overlay of City streets.

#### **30. PWA Response to Recommendation #146 – The levels of service delivered by the Park Maintenance Section should be adjusted to provide effective**

**turf management, tree / landscape management, irrigation management, and playground management.**

PWA is not in agreement with the MCG analysis of what the adequate staffing level is for Park maintenance and what the associated tasks should be. Litter and travel time factors do not appear to be incorporated into the analysis. PWA cannot use herbicides in parks and most typical park maintenance practices include the use of herbicides for weed control. New mandates for higher levels of litter removal related to “clean water legislation” and the prohibition of green waste being mixed into garbage and going to the landfill will require more labor inputs without additional resources. These reasons point to a need for additional staffing to achieve the “Mode B” service level recommended by MCG.

**MCG Response to PWA Comments Regarding Recommendation #146.**

The MCG has had the opportunity to analyze park maintenance operations in numerous cities in the United States including the City of Los Angeles. The level of authorized staffing, as it exists in fiscal year 2008-09 for park maintenance, is sufficient to deliver a B Level of Service. The delivery of this level of service with this level of staffing will require modifications in management and staffing practices, as noted in the report.

**31. PWA Response to Recommendation #163 – The Keep Oakland Clean and Beautiful Division should acquire twenty (20) additional illegal dumping surveillance cameras.**

Surveillance of environmental crimes such as illegal dumping is being conducted by several cities, counties and special districts throughout the state and country including Oakland. All cameras, whether video or digital have limitations and challenges. If the cameras are effective they can sometimes capture license plates of illegal dumpers. This information may result in invoicing owners of the subject vehicles, and a small claims action if not paid. Based on the current staffing level and workload, additional staff would be required to monitor and maintain cameras, download information, handle invoicing, collections, and provide small claims court and hearing officer support.

**MCG Response to PWA Comments Regarding Recommendation #163.**

The KOCB has more than sufficient staff to implement this recommendation. Its implementation is essential to break the cycle of certain elements that treat Oakland as a location for illegal dumping.

**32. PWA Response to Recommendation #169 – The Facilities Management Division should develop and install a preventive maintenance program for all of the buildings and building components.**

A preventive maintenance plan is an important element in facilities maintenance and can result in reduced maintenance costs in the long run. However, due to lack of capital

funding for City facilities and the backlog of deferred maintenance for many past years, there would be no immediate savings from the implementation of such a program.

The development of a comprehensive preventive maintenance program is labor intensive. It would require additional staff time to establish the levels of services, identify key components, document, train, and develop a computerized database and tracking system. This would also require additional funding as staff is working at full capacity to perform the current workload – a workload that is forecasted to increase as building components continue to fail.

With the planned use of CityWorks to track all maintenance requests, this recommendation can be implemented at that time with the preventive maintenance activities added and tracked in that system. Until such time, staff can, as time permits, continue to add more preventive maintenance activities to their current workload.

#### **MCG Response to PWA Comments Regarding Recommendation #169.**

Not all of the City's facilities suffer from extensive amounts of deferred maintenance. The continued deferral of the implementation of a comprehensive preventive maintenance program will only exacerbate this problem for these types of buildings, and inflate the price tag significantly of renewal and rehabilitation of the City's facilities.

#### **33. PWA Response to page294 - The Facilities Management Division should develop and install a reliability-centered program for facility components.**

PWA disagrees with this recommendation, as a reliability-centered program would not be very helpful at this time given the extent of deferred maintenance in our facilities. The recommendation to spend an additional \$15K annually on an outside contract would not result in any savings in maintenance costs. If this funding was available, it should be spent on the repair or replacement of building components. The items suggested, such as the inspection and testing of fluids, heat and vibration monitoring are all a part of a comprehensive preventative maintenance program and would be routinely performed by maintenance staff. The primary issue with both of these recommendations (page 283) is that without additional capital funding and adequate annual increases for maintenance, a preventative maintenance plan or reliability testing would in no way result in any significant savings of O&M or staff time.

#### **MCG Response to PWA Comments Regarding development of a reliability-centered program.**

Not all of the City's facilities suffer from extensive amounts of deferred maintenance. The continued deferral of the implementation of a comprehensive preventive maintenance program will only exacerbate this problem for these types of buildings, and inflate the price tag significantly of renewal and rehabilitation of the City's facilities.



**34. PWA Response to Recommendation #171 – The Engineering and Construction Department and the Facilities Maintenance Division should develop and implement a facilities commissioning policy.**

PWA agrees with this recommendation; however, additional staff resources would be necessary to implement it. Implementation of an all-inclusive commissioning plan for all new facilities could ultimately save maintenance staff time and operations costs. However, the startup time and staff costs as well as the on-going cost for additional staff to participate in the plan reviews, document preparation, weekly meetings and onsite visits for concurrent projects would need to be evaluated. Additional funding would also be needed. Lastly, there are many issues to be considered such as roles, responsibilities, and funding that would require close cooperation between both agencies.

**MCG Response to PWA Comments Regarding Recommendation #171.**

The MCG believes that there are sufficient staff resources available within the PWA to implement this policy.

**35. PWA Response to Recommendation #172 – The Engineering and Construction Department and the Facilities Management Division should develop an equipment standardization policy.**

PWA agrees with this recommendation; however, additional staff resources would be necessary to implement it.

Current contracting policy does not permit City staff to specify specific brands or models in the bid specifications. City-wide policy changes would be required before staff could implement this recommendation. This recommendation again is labor intensive and would require additional funding for staff time and start up costs.

**MCG Response to PWA Comments Regarding Recommendation #172.**

The MCG believes that there are sufficient staff resources available within the PWA to implement this policy.

**36. PWA Response to Recommendation #173 – The Agency should establish a Facilities Management Advisory Board to serve as a customer council for the Facilities Management Division.**

PWA agrees with this recommendation. All of the suggested actions recommended are currently taking place. The managers of both units are presently developing standardized policies and procedures for their operations. Monthly meetings are scheduled with client agencies to discuss their individual service needs and any outstanding issues.

With the current workload of all City staff, the development of an Advisory Board made up of all the agencies would not be efficient use of time. Each client group has distinct issues related to their facilities. Regular, individual agency meetings would be more effective in making sure that the concerns and expectations of each client agency are met.

In addition, facilities staff is currently reviewing all forms of client communication such as website, emails to all employees, building announcements, published policies and procedures and electronic forms for all services.

As it relates to the cost for services, the internal service charges are not determined by the Facilities Management Division. Rates are determined by the Budget Division subsequent to their fund balancing analysis of the Internal Service Fund (4400) and would not be a part of a discussion with the client agencies.

### **MCG Response to PWA Comments Regarding Recommendation #173.**

Good customer service deliver by internal service funds requires ongoing meetings with customers. Those meetings have not been occurring on a regular ongoing basis. Absent that regular ongoing communication via a Facilities Management Advisory Board. Customer service will continue to be problematic without regular on-going communication.

### **37. PWA Response to Recommendation #176 – The Facilities Management Division should provide point of sales receipts for each transaction. The point of sales receipts should be summarized in monthly reports to each department.**

PWA does not agree with this recommendation. This recommendation goes well beyond the industry standard for providing client agencies/tenants with operational costs. It is current practice for all property management organizations to provide this type of information to their client on an annual basis and is not done at such a low level of detail. Monthly review of the expenditures would not provide a clear picture of the activities being performed by the facilities management units. An annual review would be more beneficial. Even with the use of CityWorks, this would be labor intensive and, if done on a monthly basis would not provide more useful information to either the facilities management staff or the client agencies.

### **MCG Response to PWA Comments Regarding Recommendation #176.**

The Equipment Services Division has already agreed to provide service cost information to their customers using FASuite, their automated maintenance management system. The Division, in their response, noted that Department managers, not individual drivers, are responsible for the costs of their portion of the fleet—summary information, with backup detail, should be presented monthly. Equipment Services Division management

is implementing monthly department coordinator meetings to review monthly reports and discuss issues/concerns with user departments. With the upgraded FASuite rollout expected to be completed in April 2009, the Equipment Services Division will provide web access to major customers.

Given that the Equipment Services Division can provide this service, we believe the Facilities Management Division should be capable of providing the same with implementation of Azteca CityWorks.

**38. PWA Response to Recommendation #177 – The Division Manager for the Facilities Management Division should meet monthly with each department to review the monthly reports and discuss the basis and nature of the costs.**

The recommendation for clients to review fiscal reports on a monthly basis is not based on any industry standard or known practice for this type of facilities management organization, public or private. This recommendation does not take into consideration current fiscal or purchasing processes at the City of Oakland and is not discussed in detail or in context with the current operations of the Divisions. This recommendation would be more relevant if the client agencies are being charged directly for services on a per item billing and not through an internal service fund, as is the case at the City of Oakland. Expenses allocated to various agencies are often not allocated on a monthly basis and some allocated expenses (such as utilities) are not controllable. Building activities are not routine and are often seasonal such as roof leak and heavy summer use. The monthly reporting again would not be useful and is not in keeping with property management standards of annual reporting. Implementation of these recommendations would result in the need for additional funding for staff time and would not result in any saving in maintenance costs or create efficiency.

**MCG Response to PWA Comments Regarding Recommendation #177.**

The customers of the Facilities Management Division are paying for the services of the Division. The costs are allocated to departments in their operating budgets. These customers have a right to know what they are paying for. The Equipment Services Division has already committed to providing this information. The Facilities Management Division should be able to provide this information to its customers, as well.

**39. PWA Response to page 350 - the Use and Application of Vehicle Equivalency Units.**

MCG's computation of 3,600 vehicle equivalents (VE) differs from the VEs computed by the Equipment Services Division (ESD). MCG computed the equivalents based on the average maintenance effort for various classes of vehicles provided by several municipal organizations. This method assumes the average fleet age is within the normal parameters of municipal fleets. The ESD computed VEs of 4,651 for Oakland's

fleet based on the actual amount of maintenance effort expended to maintain the fleet during FY 2007-08. The higher number reflects the additional effort required to maintain a fleet of significantly older vehicles.

**MCG Response to PWA Comments Regarding page 350 - the Use and Application of Vehicle Equivalency Units (VEU's).**

During discussions, MCG explained to the PWA that the use and application of VEU's by the MCG are intended as benchmarks – what the Equipment Services Division should charge for maintenance and repair of a piece of equipment, not what the Division does charge. The MCG adjusted the VEU's that can be handled by a mechanic or mechanic's helper for the age of the City's fleet.

- 40. PWA Response to Recommendation #199 – The Equipment Services Division's charge-back rates should be recalculated, including the hours that staff should be charging to work orders, based upon the cost structure of the Equipment Services Division. Upon the re-calculation of these rates, the charge-back system and proposed rates should be shared and reviewed with customers and the Fleet Advisory Board. This review should occur on an annual basis.**

Equipment Services Division staff is continuing to refine its rates; however, many of the assumptions made by MCG are based on erroneous information. The proposed shop labor rate of \$125 per hour are based on 72,960 labor hours charged to work orders, which is an increase over 2007-08, and equates to approximately 132 labor hours per technician per month.

MCG provided ESD staff with a mix of 97 automotive repair shops and dealerships within the Bay Area as an example of the shop labor rate structure that should be considered by ESD. The list, from Consumer Checkbook, is outdated and does not include truck and construction equipment repair shops. Two automobile dealerships' rates were included in the analysis, even though the dealerships – Broadway Ford and Saturn of Oakland – have both been shuttered for more than two years.

Furthermore, using MCG's data and isolating just the dealerships within Oakland (which meant eliminating the small, independent auto repair shops), yielded an average shop labor rate of \$138.00 per hour (see Attachment A).

An informal telephone survey conducted March 4, 2009, shows the most current labor rate among comparable vendors:

<b>As of March 4, 2009</b>	<b>Labor Rate</b>	
Peterson Tractor	\$ 120.00	
East Bay Ford Truck	\$ 125.00	
San Leandro Honda	\$ 127.00	
FH Dailey Chevrolet Isuzu	\$ 127.50	
Albany Ford/Subaru	\$ 128.00	
Golden Gate Freightliner	\$ 134.00	Median
Marina Buick Pontiac GMC	\$ 134.95	Mode
Walnut Creek Ford	\$ 134.95	
The Ford Store San Leandro	\$ 135.00	
Tec of California	\$ 138.00	
Cummins West	\$ 144.25	
<b>Mean</b>	<b>\$ 131.70</b>	
Stoneridge Chrysler Jeep Dodge	by job	
Dublin Honda	by job	
San Francisco Ford Lincoln Mercury	by job	
Bay Bridge Chrysler Jeep Dodge Kia	by job	

ESD is continuing to refine its commercial markup rate. The fuel mark up has been changed to \$0.09 per gallon. Management charges have been subsumed into the hourly labor rate, thereby eliminating an additional service charge per vehicle per month.

A \$15.00 monthly service charge per vehicle, for a fleet of approximately 1,650 vehicles and equipment would yield \$297,000 in service charges.

### **MCG Response to PWA Comments Regarding Recommendation #199.**

The conclusions reached by the MCG regarding the shop labor rate (the number of hours charged by mechanics and mechanic assistants) were based upon information provided by the PWA. The MCG has not received any other information to indicate that its conclusion regarding the shop labor rate is erroneous. The MCG used a comparison of shop labor rates to obtain a sense of what private sector shops charge. While of interest, the shop labor rate utilized by the Division (1) needs to be based upon its own cost structure, and not a comparison to private sector shops and (2) should be lower than that of the private sector shops since it does charge a “profit” and does not pay local, state, or federal taxes.

The commercial markup proposed by the Division is high vis-à-vis benchmarks.

**41. PWA Response to Recommendation #216 – The Supervising Civil Engineer position in the Infrastructure and Operations Department should be eliminated through attrition.**

PWA does not agree with this recommendation; however, due to budgetary constraints, this position may be eliminated. This position provides invaluable support to the various maintenance sections and performs a variety of project work. There will be a savings from eliminating this position; however, it will not be as significant as estimated because an allocation for staff changes will have to be provided to CEDA/DEC for their work since they are all project funded staff.

**MCG Response to PWA Comments Regarding Recommendation #216.**

Based upon an interview with the incumbent, it did not appear that the incumbent was utilizing a substantial proportion of his time for project-related work. The managers and supervisors of the maintenance sections have sufficient experience to make asset maintenance and repair decisions without the availability of an engineer on an every day basis, and call upon the Department of Engineering and Construction when that assistance is needed, which should be infrequent.

**42. PWA Response to Recommendation #217 – After the above staffing adjustments, the level of staffing within the Streets and Sidewalks Section should not be adjusted: the level of staffing is appropriate to the size of the street network.**

PWA disagrees with this recommendation based on the deteriorated condition of our street network. While our staffing is within the benchmarked range, our street network is among the 10 worst of the 109 cities in the nine Bay Area counties covered by the Metropolitan Transportation Commission. The highly deteriorated condition of our street assets places an additional burden on street maintenance staff. The bulk of the staff's resources and time are directed to respond to street failures (such as pothole & base repairs), allowing little time to provide adequate preventative maintenance, such as crack sealing. This is difficult to capture in benchmarking comparisons.

**MCG Response to PWA Comments Regarding Recommendation #217.**

The City cannot adequately address its problems regarding its street network / pavement condition index with the addition of staff for the Streets and Sidewalks Section. This problem can only be effectively addressed by capital improvement program budget dollars for slurry seal, street overlay, and street reconstruction. Given the scarce dollars available, the City should focus its available and additional financial resources on slurry seal, street overlay, and street reconstruction, and not by adding staff to the Section.

And in any case, the benchmarks for staffing considered the fact that Oakland, like most cities in the San Francisco Bay Area faces problems with the adequacy of capital improvement dollars for its street network.

**43. PWA Response to Recommendation #218 – The staffing of the Tree Maintenance Section exceeds workload by one position. One position should be eliminated through attrition.**

PWA disagrees with this recommendation. The audit report recommends having four tree maintenance crews and a one person crew for watering and young tree pruning. The report states that “a total of fifteen (15) staff would be required.” This figure should not include the (2) Tree Supervisor I FTEs. They would be needed to rove between the five crews, organize work schedules and document work and personnel performance. Therefore, one additional Tree Trimmer FTE should be added to the current level of staffing. This additional position would be assigned to prune (train) young trees. Training young trees is a critical component to developing proper branch structure and improving the long-term viability of street trees. The pruning of young trees should be performed on a more frequent cycle than mature trees. A two person young tree care crew would be much more efficient and significantly improve City street trees. Increasing the number of Tree Trimmers by one position would also allow greater efficiency for production-style, proactive pruning of street trees. The Tree Worker/Driver classification should be eliminated through attrition and those positions should be converted to Tree Trimmers. This entry level position is limited in its work duties. Tree Trimmer classification is more functional and versatile.

**MCG Response to PWA Comments Regarding Recommendation #218.**

The Tree Maintenance Section is slightly overstaffed if (1) proper crew sizes are utilized; (2) a third aerial tower is acquired for the Section; and (3) its mission continues to be focused on responding to emergency requests and not routine block-by-block trimming.

**44. PWA Response to Recommendation #220 – The staffing of the Sanitary Sewer Section exceeds workload by eight (8) positions. Eight (8) positions should be eliminated through attrition.**

PWA disagrees with this recommendation. This Sanitary Sewer staff is responsible for the maintenance and repair of the sanitary sewer collection system by performing work activities such as:

- Hand rodding mains
- Power rodding mains
- Hydro flushing mains
- CCTV inspection of mains
- Responding to complaints
- Sewer main repair

The Sewer Department performs all of the work activities described in your audit. However, there were two functions that were left out. The staff is also responsible for dredging and removing sediment from our trunk lines as well as main interceptors that run throughout the city. This function is known as – **Drag Machine Cleaning**.

This operation is ongoing and requires a four (4) man crew to set up and conduct traffic control in certain situations. This operation entails the placement of very heavy instruments; hence safety precautions are very important during this operation. The department is currently short staffed and (4) additional FTE's are needed to perform this operation.

The other function that the Sewer Department performs is **Pump Station Maintenance**. Staff performs weekly inspections of our eight (8) Pump Stations located in different parts of the city. This work activity involves three crew members who have to set up emergency retrieval equipment, with one crew member entering the "Confined Space" to conduct the pump station inspection. CAL-OSHA Regulations state that three (3) crew members must be present when entering a Permit Required Confined Space. The Authorized Entrant, Attendant, and Entry Supervisor must be on site while performing this function. There is also continuous Atmospheric monitoring being performed by the crew members who are not in the Permit Required Confined Space. Due to staff shortages, we currently have to shut down one of our preventive maintenance crews to perform this function on a weekly basis. The Sewer Department needs (2) additional FTE to perform this operation.

**Page 346-349 –Current staffing levels and Annual Work Program for the Drainage Section (Exhibit 16) as examples of what the Storm Drain Section performs as daily tasks.**

Current staffing levels are needed and are critical in order to maintain our aged Storm Drain infrastructure. The audit uses exhibit and information from the Storm Drain Master Plan. This plan does not reflect the activities the Storm Drain Section accomplishes routinely. There are many other tasks that the Storm Drain Section performs on a daily and seasonal basis. Trying to cover all these tasks listed below as Miscellaneous Storm Water Maintenance is misleading.

- Storm / Drain inlet repair
- Storm / Drain pipe repair
- CCTV pipe inspection and pipe repair locating
- Manufacturing sandbags / delivering sandbags;
- Mud slide assistance(Covering and sandbagging mud slides)
- Replacing stolen inlet grates and Manhole covers
- Manage activities of Contractor for Lake Merritt widgeon grass removal
- Board-up requests from Oakland Police Department
- Citizen request for retrieval of personal property dropped in storm inlets



## **MCG Response to PWA Comments Regarding Recommendation #220.**

The Sanitary Sewer Section is overstaffed if (1) proper crew sizes are utilized; (2) replacement equipment is purchased enabling a reduction in crew sizes; and (3) the work practices are modified as recommended in the report. The City faces significant challenges with sanitary sewer maintenance work practices that the MCG views as insufficient (the amount of mains that are cleaned and treated for roots needs to be significantly increased on an annual basis – and this does not require an increase in staff if proper crew sizes are utilized), inefficient (crew sizes are too large and do not reflect practices in other cities), and ineffective (the City has a high number of sanitary sewer overflows in large part due to an ineffective fats, oils, and grease control program, and inadequate cleaning and root control of mains).

These problems are not the result of insufficient staff. The benchmark used by the MCG would still place the PWA at the higher end of the range – in other words, more staff per mile of main.

### **45. PWA Response to Recommendation #221 – The level of staffing within the Drainage Section exceeds workload and service level requirements by nine (9) positions. Nine (9) positions should be eliminated by attrition.**

PWA disagrees with this recommendation as it contradicts a previous recommendation. On page 109, MCG recommends that Storm Drainage staff complete some of the minor CIP work from the Storm Drainage Master Plan. Yet, here it proposes to eliminate more than half of the Drainage Staff.

It is crucial to keep staffing levels where they are presently in order to provide an adequate level of service in maintaining our Storm Drain infrastructure. There is a sizable investment (\$1.2 Billion) that we need to protect and maintain. There is a need to protect our citizens against property damage from flooding and possible eroding hillsides.

Because of our aged infrastructure, the activities that the Storm Drain staff performs routinely are crucial for maintaining our effectiveness in servicing citizen complaints and repairing our aged infrastructure. Our department needs to continue our daily activities, which include the repair and service of our inlets, pipes, weirs, culverts, V-ditches and waterways.

The PWA Audit speaks to the ability of the Drainage staff to repair and replace damaged storm inlets and pipes (pg 108-109). These repairs are necessary because there are zero capital improvement project dollars allocated to storm drainage facilities presently.

## **MCG Response to PWA Comments Regarding Recommendation #221.**

During previous discussions, MCG explained to the PWA that the MCG

recommendations regarding staffing reductions were to be implemented via attrition. Until the staffing is reduced through attrition, the existing staffing complement within Storm Drainage could be used constructively to address the capital improvements identified within the Storm Drainage Master Plan.

As reflected in the report, the Drainage Section is overstaffed.

**46. PWA Response to recommendation # 224 – the work performed by the Body and Paint Shop should be outsourced and the staff allocated to the Shop eliminated through attrition.**

PWA disagrees with the recommendation to outsource paint and body shop work.

There are various opinions on outsourcing paint and body shop operations within the municipal fleet community. While some have outsourced this function, other Bay Area fleets maintain in-house paint and body shop operations and defend the economical use of such; e.g., City of San Francisco, City of San Jose, Santa Clara County.

Furthermore, outsourcing paint and body shop functions will still require staff to monitor the outside vendor contracts, to prepare repair estimates and work orders prior to delivering the vehicle/equipment to outside contractor, and to inspect and accept repair work when returned to the shopage

The Equipment Services Department's Body Shop works in conjunction with the Machine and Welding Shops to custom design and fabricate specialty parts for the varied specialty equipment within the City's fleet in order to minimize downtime and costs. Body repair for specialty vehicles (e.g., fire apparatus) will increase downtime substantially as specialty vendors are not located in close proximity to Oakland.

**MCG Response to PWA Comments Regarding Recommendation #224.**

As the MCG noted, previous analysis conducted of the Equipment Services Division in 2003 recommended the outsourcing of the work completed by the Body and Paint Shopage The comparative survey conducted by MCG as part of this audit found that all of the other cities that responded to the survey outsourced their body and paint shops. None of the technicians within the Body and Paint Shop met benchmarks for the amount of hours that should be charged to work orders.

**47. PWA Response To Recommendation #225 – The Electrical Construction and Maintenance Planner Position should be eliminated through attrition.**

PWA disagrees with this recommendation. The Electrical Construction and Maintenance Planner position, responsible for tracking and recording data associated with work performed, is essential to the production and output of the Electrical Services program. The planner also performs essential budgetary calculations on behalf of the management team to ensure funding is directed to the appropriate project. Although a

portion of the work can be completed by the supervisory staff, eliminating the planner position could compromise the Supervisors' current job duties (i.e. staff supervision, frequency of field inspections).

The electrical services operations are well planned, coordinated and executed. This is a direct result of the input provided by the planner. Due to the construction-related nature of the work performed by staff, electrical services is able to provide swift and reliable repairs to accident related damages, along with minor retrofit projects involving traffic signal systems. The planning, budgeting, scheduling, execution and review of these projects are directly related to the planner's functions.

#### **MCG Response to PWA Comments Regarding Recommendation #225.**

Based upon an interview with the incumbent, it appears that the primary responsibility of the incumbent is job planning and scheduling for the Traffic Signal and Street Light staff. This includes maintaining the stock in the shop, ordering poles and lamps, ordering materials for construction projects, assigning underground service alerts, scheduling preventive maintenance for traffic signals, scheduling the group relamping of streetlights, etc. The two Electrical Supervisors should fulfill the responsibility with support from the Administrative Assistant II.

#### **48. Recommendation #226 – The Public Works Supervisor II position in the Traffic Maintenance Section should be eliminated through attrition.**

PWA disagrees with this recommendation. There are currently 23 personnel assigned to the Traffic Maintenance Division and two supervisors are needed to schedule, inspect and oversee operations performed throughout the geographic boundaries of the City. Having two supervisors is an operational necessity to manage the delineation and signage work orders and complaints received.

#### **MCG Response to PWA Comments Regarding Recommendation #226.**

This position supervises two positions: an Administrative Assistant II and a Public Works Supervisor I. The Public Works Supervisor I supervises all of the staff assigned to sign maintenance and repair, street striping, and pavement marking maintenance. The only role for the Public Works Supervisor II is to review service requests received from the call center, residents / businesses, and other City agencies, respond to service requests assuring materials are available, respond to e-mails and material received via interoffice mail, etc. There is insufficient supervisory workload to warrant this position. It should be eliminated.

**49. PWA Response to Recommendation #227 – The Administrative Assistant II Position in the Traffic Maintenance assigned to support the Public Works Supervisor II should be eliminated through attrition.**

The position in Traffic Maintenance is actually an Administrative Assistant I and it supports both the Public Works Supervisor I and II. Duties that are performed that cannot be incorporated into Cityworks are listed below:

Assist in maintaining a daily work order database from CEDA personnel assigned to Traffic Maintenance staff in Microsoft Excel.

This duty is not in Cityworks as CEDA does not use Cityworks. This is also true for request from Budget & Finance. We currently receive an average of 18 to 20 requests per day for damaged “No Parking” signs. The Administrative Assistant I will assist in inputting this information in Cityworks.

In addition to the above, the position also performs the following duties:

- Compose correspondence reports and design charts and graphs
- Utilizes word processors, type review, edit and proofread reports and documentation
- Determines proper spelling, grammar, and paragraphing; develop proper formats for forms, edit and review documents as necessary; print final documents and distribute
- Provide routine inquiries from the public and refer or assist in the resolution of problems
- Assist in providing information which may require the general interpretation of Traffic Maintenance policies and procedures
- Follow, interpret and direct basic office procedures such as filing, inventory and maintain supplies, check invoices and packing slips, sort, distribute and route mail, operate office equipment (copiers, fax machines, etc.), maintain petty cash records
- Assist in performing radio/Nextel dispatching, and assists in communicating with non-City agencies (utility companies, etc.)
- Sets appointments and meetings for Traffic staff, makes reservations for City facilities
- Assists the public by providing information concerning fees in the billing and processing of private vehicle accidents that damage Traffic structures

**MCG Response to PWA Comments Regarding Recommendation #227.**

This position maintains a work order database in Microsoft Excel, receives and prints work orders from the Transportation Services Division / CEDA, answers the phones for Traffic Maintenance, orders office supplies, processes vehicle collision reports e.g., knockdowns, and provides general office support. Much of this work is or will be unnecessary since (1) Azteca Cityworks will meet the need for a database of work

orders; (2) the Agency's Call Center receives most of the calls related to traffic maintenance, and (3) other aspects of the work performed by the position, such as receiving and printing work orders from the Transportation Services Division / CEDA could be assigned to the Public Works Supervisor II.

**50. PWA Response to Recommendation #231 - The City should discontinue group re-lamping of streetlights.**

PWA is not in agreement with this recommendation. Street lighting is a very visible and viable asset of the City. Oakland citizens routinely request more streetlights to combat public safety concerns. Our customers demand well-lit streets and expeditious repairs; and Electrical Services tries to meet or exceed these expectations. The proactive re-lamping strategy has resulted in a notable reduction in the number of outage trouble-calls received by the department. Also, the Electrical Services Group routinely tests new products for application in the lighting inventory.

The following list is a sample of the lighting work performed by City forces as part of their regular duties:

- Replaced 125 damaged street light poles
- Repaired 1,049 street light outages found by staff
- Proactively re-lamped 2,212 street lights (began on 1-22-2008)
- Repaired 2,889 street light outages reported by citizens

**MCG Response to PWA Comments Regarding Recommendation #231.**

This is an excellent example of the need for PWA to focus on "core services." Group relamping allocates revenues for delivery of services that are unusual in its line of business while ignoring significant deficiencies in "core services", and is out of step with almost all other public works departments. Most other public works departments will patrol major streets once every month to detect streetlight outages and replace these streetlights, and rely on resident feedback for residential neighborhoods. The funding used for this group relamping could be more effectively utilized elsewhere (e.g., traffic signal preventive maintenance).

**51. PWA Response to Recommendation #238 – The Keep Oakland Clean and Beautiful Division should be responsible for graffiti abatement in or outside of parks.**

PWA is not in agreement with this recommendation. Currently, there are four FTEs in the Parks and Buildings Division who abate graffiti in parks. The audit proposes to shift responsibility to KOCB but without additional staffing. This would not be feasible given the existing workload.

### **MCG Response to PWA Comments Regarding Recommendation #238.**

The KOCB is abating graffiti on private property. The MCG recommends that the process for abatement of graffiti on private property should be modified to place the burden for removal of graffiti abatement on the private property owner. Almost 21% of the graffiti abatement service requests concerned graffiti on private property.

With the reallocation of this responsibility, the KOCB staff will have the capacity to abate graffiti inside or outside of parks.

### **52. PWA Response to Recommendation #240 – Custodial staffing exceeds workload and service level requirements by six (6) positions. Six (6) positions should be eliminated through attrition**

PWA does not agree with this recommendation. The recommendation to delete six custodial staff is based on the use of one industry standards report by IFMA which is made up of various types of facilities and organizations. While the averages can be used as a baseline, it does not fit all organizations. The report lists the other types of special services requiring custodial staff time outside of cleaning such as meeting setups at City Hall, plaza cleaning, setups for media conferences, and support for special events in both the building and the plaza. However, there is no correction or actual adjustment used in the final analysis. With the increasing concerns about the current level of cleanliness in the plaza, this recommendation would greatly affect the ability of staff to meet expectations.

### **MCG Response to PWA Comments Regarding Recommendation #240.**

To evaluate staffing requirements, the MCG utilized survey data from the *International Facility Management Association*. This survey was completed by more than 650 members of the Association comprising city and county governments, educational institutions, the federal government, state governments, insurance companies, electronics and information system companies, etc. The median square footage per custodian was 22,958. This baseline is more conservative than that used by the MCG in other assignments and recognizes the challenges faced in some of the City's facilities. Given the special assignments, a total of six (6) custodian positions should be eliminated. This level of staffing should be supervised with five (5) custodial supervisors, which would result in a span of control of ten (10) custodians.

### **53. PWA Response to Recommendation #243 – The total number of staff allocated to park and landscape maintenance is sufficient to deliver a good level of service. The level of staffing for park and landscape maintenance should be maintained.**

PWA does not agree with this statement.

### **MCG Response to PWA Comments Regarding Recommendation #243.**

The MCG has had the opportunity to analyze park maintenance operations in numerous cities in the United States including the City of Los Angeles. The level of authorized staffing, as it exists in fiscal year 2008-09 for park maintenance, is sufficient to deliver a “B” Level of Service. The delivery of this level of service with this level of staffing will require modifications in management and staffing practices, as noted in the report.

**54. PWA Response to Recommendation #248 – The 6.4 staff allocated to the Office of Parks and Recreation should be reallocated to the Park maintenance Section of the Agency including the LLAD funding for \$364,520.**

PWA does not agree with this recommendation. The ball field preparation function (baseball infield preparation and chalk lining; football and soccer field lining; weeding and litter removal) is closely tied to the user groups who reserve the fields. The field reservations are often in the evenings (adult softball) or late afternoons and weekends (youth leagues). This function requires direct supervision and interactions with user groups and their scheduling. OPR should continue to manage this function alongside the management of scheduling and related matters.

**MCG Response to PWA Comments Regarding Recommendation #248.**

The responsibility for baseball field maintenance and preparation should be reassigned from the Office of Parks and Recreation to the Park Maintenance Section of the Agency. The Section is already responsible for the maintenance of all of the other sports fields such as soccer fields. The Section is already responsible for the maintenance of the grounds surrounding the baseball fields. The existing assignment results in duplication with different staff from the Office of Parks and Recreation and the Park Maintenance Section of the Agency traveling to the same facilities. In addition, the Office of Parks and Recreation is authorized 6.4 full-time equivalent staff for this purpose or the equivalent of a little more than 8% of the staff authorized for the Park Maintenance Section of the Agency to maintain the City’s entire park system.

The Park Maintenance Section of the Agency can more efficiently deploy and utilize the staff assigned for baseball field preparation.

**55. PWA Response to Recommendation #250 – The two (2) full-time custodians assigned to route 4 and the two (2) temporary part-time custodians responsible for the cleaning of standalone restrooms in parks on the weekends should be transferred to the Park Maintenance Section.**

PWA is not in agreement with this recommendation. Custodians were part of park maintenance staff prior to the PWA/OPR re-organization in 2004. The reorganization brought all custodial staff under one manager providing for backfilling, training, supervision and consistent practices.

### **MCG Response to PWA Comments Regarding Recommendation #250.**

The MCG has consistently found that the responsibility for cleaning of restrooms is assigned to park maintenance and not to custodial maintenance. This is done to reduce fragmentation of responsibility between different organizational units, so that the park maintenance manager can be held accountable for all aspects of park maintenance.

The two (2) full-time custodians and the two (2) temporary part-time custodians responsible for the cleaning of standalone restrooms in parks on the weekends should be transferred to the Park Maintenance Section. These positions should be reclassified as Gardener II's, through attrition. The responsibility for cleaning of standalone park restrooms should be assigned to the park maintenance crews assigned to the hubs.

#### **56. PWA Response To Recommendation # 254 – Street sweeping staffing exceeds workload and service level requirements by five (5) positions. Five (5) positions should be eliminated through attrition.**

PWA does not agree with this recommendation; however, the Agency may have to implement it due to budgetary constraints. Positions that are proposed to be eliminated are responsible for removing trash and bulky items that sweepers are unable to pick up (i.e. hard to reach locations such as: dead-end streets, speed bumps, bulb outs, and cul-de-sacs). One FTE is responsible for transporting the roll-off box for disposal of Street Sweeping debris; this position reduces travel miles, fuel usage and improves efficiencies of the Street Sweeper Operators. PWA will review this recommendation in conjunction with its review of miles swept and its realigned operational plan.

### **MCG Response to PWA Comments Regarding Recommendation #254.**

The Section is allocated five (5) staff that drives in front of the street sweepers to remove heavy debris, sweep handicap ramps, etc. This is an atypical service that the MCG has never encountered in another city in the United States in thirty-five (35) years. These other cities have developed more efficient methodologies to meet this need. This is not a service that the Division should provide; the Street Sweeper Operators should coordinate the removal of these objects with their Public Works Supervisor I on as needed basis. These five (5) positions should be eliminated.

#### **57. PWA Response to Recommendation #256 – Electrical painting workload is misallocated and exceeds workload by three (3) positions. Three (3) positions should be eliminated through attrition.**

PWA is not in agreement with this recommendation. If these positions were eliminated, there would be no staff to repaint/remove graffiti from electrical poles and City utility boxes. The Audit recommends that this function be handled by the Electrical Services and Traffic Maintenance Divisions but does not reallocate the staff or funding.



### **MCG Response to PWA Comments Regarding Recommendation #256.**

The responsibility for painting streetlights, traffic signals cabinets, traffic signal poles, etc. should be assigned to the Electrical Services and Traffic Maintenance Division. The Division would have sufficient staff to fulfill this function if the staffing recommendations of the MCG for traffic signal maintenance staffing levels are implemented. The higher need, the “core service” that the PWA should focus on is the preventive maintenance of signalized intersections by signal technicians.

#### **58. PWA Response to Recommendation #257 – Vegetation control staffing exceeds workload and service level requirements by six positions. Six positions should be eliminated through attrition.**

PWA does not agree with this recommendation. The KOCB vegetation cut and clean crews are responsible for paved medians, pathways, excess right-of ways along the street, vacant lots and traffic islands. The crews have recently been trained and deployed to spray in accordance with the City’s Integrated Pest Management (IPM) Policy. The recommendation does not explain how it was determined that six FTE would be sufficient to do the work. If we assume that the recommendation is based on herbicide spraying, it still does not take into consideration the number of locations that cannot be sprayed and would have to be serviced manually. Spraying is limited to defined time frames; hand weeding is still required for all areas including more than 50% of locations that do not qualify for spraying under the IPM policy. The cut and clean staff are also responsible for pre-storming and storm response from October to April each year.

### **MCG Response to PWA Comments Regarding Recommendation #257.**

This staff combats weeds and vegetation entirely with hand tools such as weed eaters, chainsaws, loppers, backpack blowers, brooms, shovels, and rakes. The staff responds to complaints; their services are not typically proactive. Pre-emergent and post-emergent chemicals were not utilized to control these weeds at the time this study was initiated.

As previously discussed, the Division should effectively utilize pre-emergent and post-emergent chemicals to prevent the occurrence of weeds in accordance with adopted City Council policy. The effective and judicious application of pre-emergent and post-emergent herbicides and mulches would enable the elimination of one of these two crews. In addition, the Agency should “pilot” test the use of organic herbicides and mulches for vacant lots to suppress weeds.

#### **59. PWA Response to Recommendation #259 – The vegetation control crew should be reallocated to the Park Maintenance Section.**

PWA does not agree with this recommendation. As described above, this function is unrelated to Park Maintenance.

### **MCG Response to PWA Comments Regarding Recommendation #259.**

The vegetation control crew should be reallocated to the Park Maintenance Section. The Park Maintenance Section managers and supervisors have the requisite pesticide applicators licenses. The comparative survey cities contacted by the MCG as part of this performance audit placed found vegetation control typically located in park maintenance (in association with median maintenance). In addition, these staff can be more effectively utilized, when workload necessitates, assisting in the maintenance of the City's parks, when vegetation control workload decreases based upon measures recommended in the audit.

#### **60. PWA Response to Recommendation #260 – Reclassify through attrition the remaining six positions assigned to the vegetation crew as Gardener II's upon their reassignment to the Park Maintenance Section.**

PWA does not agree with the reduction in this staff as described above.

### **MCG Response to PWA Comments Regarding Recommendation #260.**

Upon their redeployment of the remaining positions to the Park Maintenance Section, these staff should be reclassified as Gardener II's. These staff can be more effectively utilized, when workload necessitates, assisting in the maintenance of the City's parks, when vegetation control workload decreases based upon measures recommended in the audit.

#### **61. PWA Response to Recommendation #264 – The efficiency of illegal dumping waste collection can be enhanced, enabling the reduction of nine (9) positions. Nine (9) positions should be eliminated through attrition.**

PWA does not agree with this recommendation. Detailed information was provided to MCG regarding the staffing levels associated with illegal dumping activities. We have reviewed the recommendation and agree with the acquisition of mini-refuse packers as this is likely to increase efficiencies. However, we do not agree this will eliminate the need for 9 FTEs. The recommendation states that there are a total of 35 positions assigned to illegal dumping. For clarification there are 32 positions which work three shifts. This recommendation only deals with deploying packer trucks and pickup trucks to abate illegal dumping, and removing appliance, tire, and e-waste. It does not address the remaining staff and equipment assigned to other blight- related activities such as abatement of homeless encampments, shrine removals, special event support, illegal dumping in parks, request from OPD for vehicle cleanouts prior to towing, and supervision of work furlough participants on weekends. Furthermore, as illustrated below, in order to cover three shifts at current service levels, 32 FTEs are needed.

Monday thru Friday (13 FTE)  
Saturday (10 FTE)  
Sunday thru Thursday (9 FTE)

The recommendation also states that three of four geographical areas are allocated a 2-person crew with a rear loader mini-refuse packer. For clarification, all four areas have a 2- person crew assigned to large refuse packers, and not mini-refuse packers.

#### **MCG Response to PWA Comments Regarding Recommendation #264.**

There are a number of indications that the present level of staffing for illegal dumping cleanup is not an effective utilization of City financial resources. These indications are presented below.

- The illegal dumping tonnage has declined by 35% over the past six (6) years. The tonnage collected declined somewhat in 2005 and 2006 in comparison to 2002 and 2004, but especially so in 2007.
- The Keep Oakland Clean and Beautiful Division is largely reacting to illegal dumping, and not preventing illegal dumping or aggressively prosecuting people that dump refuse illegally in Oakland. The Division, as noted in the previous chapter, should enhance its proactive approach to illegal dumping. These proactive practices, as noted in the previous chapter, should include:
  - Expanding the use of surveillance cameras; and
  - Increase the community cleanups by neighborhood associations in Oakland to clean up the neighborhoods.
- The efficiency of the methodology utilized to collect illegally dumped refuse can be enhanced. Some 2-person crews are equipped with refuse packers, while other 2-person crews are equipped with overhead loaders and 1-person crews are equipped with pickup trucks.

The MCG recommends a number of adjustments in staffing and methodology for the illegal dumping crews. At present, three of the four areas are allocated a 2-person crew with a rear loader mini-refuse packer; five additional rear loader refuse packers should be acquired. One of these two crews in each geographical area would likely need to rotate out of their rear loader refuse packers to flatbed trucks with lift gates one day a week to collect tires, appliances, and e-waste. The 1-person complaint crews should be eliminated. Each of the four geographical areas are assigned a 1-person complaint crew with a pickup truck. The illegally dumped refuse can be collected more effectively with refuse packers. The Citywide tire and appliance collection crews and the e-waste collection crew should be eliminated. The responsibility for the collection of illegally dumped tires, appliances, and e-waste should be assigned to the crews in the geographical areas.

**62. PWA Response to Recommendation #266 – Litter Enforcement staffing exceeds workload and staffing requirements by three positions. Three positions should be eliminated through attrition.**

PWA does not agree with this recommendation; however, the Agency may have to consider it due to budgetary constraints. Currently there are six positions, two of which are vacant. Under the Audit recommendations, the remaining 3 Litter Enforcement Officers would have to cover 6 SDS areas for enforcement, investigation and community outreach/education. They would have increased numbers of hot spots to monitor; caseloads would increase and each would attend more neighborhood/community meetings. Potential impacts would be a decrease in outreach and education, Truck Notifications and abandoned vehicle citations.

**MCG Response to PWA Comments Regarding Recommendation #266.**

The impact of these six (6) positions does not appear to be significant in terms of preventing illegal dumping or citing people that are illegally dumping refuse in Oakland. These positions can add value, however, should the City pursue the preventive measures recommended including expanding the use of surveillance cameras, which will require observation of the film, and engaging the neighborhood associations in Oakland to clean up and to prevent illegal dumping. The preventive measures do not require six (6) Litter Enforcement Officers. Three (3) of the positions should be eliminated through attrition.

**63. PWA Response to Recommendation #271 – The Administrative Services Manager position authorized in the Facilities and Environment – Assistant Directors Office should be transferred to the Administration Department and page 422 – A Management Analysis program would be established in the Administrative Department. This would consist of two positions transferred from the Facilities and Environment Department: an Administrative Services Manager and a Clean Community Supervisor. These positions should be reclassified, through attrition, within the Budget and Operations Analyst series.**

PWA is not in agreement with these recommendations. While it is acknowledged that there is a lack of staff in the Agency to provide analysis and analytical support, the positions recommended for transfer currently provide those services to the Department of Facilities and Environment and transferring them to another part of the Agency would not address the overall shortfall. The MCG recommendation would shift the problem, not solve the problem.

**MCG Response to PWA Comments Regarding Recommendation #271.**

At the present time, the Agency is authorized six (6) analyst positions in various classifications. These positions, and their roles and responsibilities, are presented in the exhibit following this page. In reviewing the exhibit, it is important to note that one of

these six (6) positions functions as a human resources analyst position; this is the position in the Administration Department assigned to the administration of the Agency's workers compensation program. The Agency is authorized 645 positions overall.

The MCG uses a benchmark of one (1) analyst for each one hundred and seventy-five (175) positions in a local government. For the Agency, this would indicate the need for approximately four (4) analyst positions. Compared to existing levels of analyst staffing, this would indicate that the Agency is authorized two (2) more administrative analyst position than necessary, excluding the position assigned to the workers' compensation program.

The Administration Department should be authorized two (2) analyst positions with responsibility for the following tasks:

- Analyze and develop process, procedures, work simplification, computer applications and methods of achieving intended outcomes;
- Analyze proposals for immediate and long-term policy and fiscal impacts and make recommendations based on findings;
- Conduct analytical studies of complex and sensitive financial, organizational or operational issues;
- Conduct fiscal investigations and prepare written and oral reports with recommendations for presentation to management;
- Coordinate and assemble a variety of financial/statistical information for inclusion in reports and presentations;
- Coordinate and implement programs, policies and procedures (e.g., employee evaluation process, continuous improvement, etc.);
- Participates in the development, execution and/or coordination of specific programs or studies;
- Perform a variety of complex data gathering, analyses, and report writing activities on a special project basis and
- Prepare and present a wide variety of policy reports, proposals, documents and correspondence including, but not limited to costing, expenditure and revenue recommendations, and related issues.

The Agency is unable, at the present time, to engage in any meaningful management analysis give the allocation of analytical staff (e.g., the lack of such staff in the Administration Department).

One of these two positions should be the Administrative Services Manager position authorized in the Facilities and Environment - Assistant Director's Office. The other should be an additional Budget and Operations Analyst III position.

**64. PWA Response to Recommendation #281 – The responsibility for managing all of the City's buildings would be consolidated with the Facilities Manager.**

PWA is not in agreement with this recommendation. PWA does not see any opportunity for organizational efficiencies or savings through a re-organization as proposed and the Audit did not define any data to support the recommendation.

As explained to MCG, the functions reside in two Divisions, Facilities Services (FSD) and Parks and Building Maintenance (PBMD) to address the two distinct areas of building maintenance and operations.

**MCG Response to PWA Comments Regarding Recommendation #281.**

At the present time, the managerial responsibility for managing the maintenance and repair of the City's facilities is fragmented between two different division managers. In fact, this responsibility is so fragmented that staff from the two divisions could be performing maintenance in the same City building. This confuses accountability for managing the maintenance and repair of the City's facilities. It also confuses customers based upon discussions conducted by the MCG.



April 24, 2009

**To:** Courtney Ruby, City Auditor, City of Oakland

**From:** Gary Goelitz, Vice President, Matrix Consulting Group

**Subject:** Matrix Consulting Group (MCG) Response to the Department of Engineering and Construction (DEC) Comments Regarding the Public Works Agency Performance Audit

**1. DEC Overall Comments.** Overall, the audit presents a complex picture of the Public Works Agency and public works (small p, small w) activities in Oakland, and covers an extremely broad spectrum of these activities. One theme that runs clearly throughout the document is that Oakland is significantly under-resourced in the area of infrastructure management, both in maintenance and construction of new or updated elements. Our discussions with member cities of the California Multi-Agency Benchmarking Group, comprised of the seven largest cities in California, support this theme, with Oakland having the smallest capital improvement program among these cities.

The Audit recommends significant increases in infrastructure investment, though aside from Construction Impact Fees for roadways and use of the Quimby Act for parks (limited to new park construction?), there is little discussion of other potential funding sources. It is not clear whether the audit is recommending that existing City resources (General Purpose Fund) be redirected to infrastructure, new revenues be identified, or whether there is state or federal funding that is available for this purpose. A separate discussion of this issue with strategic recommendations would be very helpful and potentially drive a policy discussion toward resolving these issues.

The City would also benefit from a discussion of what impact the overall condition and the amount of deferred maintenance of Oakland's infrastructure has on the ability to manage the infrastructure adequately. For example, the audit touches on the concept that the City should consider abandoning some areas of responsibility, given existing resources. This is a significant proposal that would benefit from a separate, summary-level discussion with specific recommendations of what assets should be considered for abandonment, and what options may exist to mitigate the impact of that action on the public.

## **MCG Response to DEC Overall Comments:**

- The MCG agrees that the City is under-resourced as with respect to the amount of funding provided for rehabilitation and renewal of the assets assigned to the PWA. This would include such assets as streets, stormwater system, sewer system, equipment, traffic signals, etc. The MCG believes that, overall, there is sufficient staff allocated to the PWA for maintenance of those assets, given the level of authorized staffing in fiscal year 2008-09, and that consequently, PWA is **not** under-resourced with respect to staffing..
- Within the report, The MCG recommends new fees including citywide impact fees, the use of RDA funding, etc. These funds can be used for rehabilitation and renewal of assets, not just for construction of new assets. The MCG also recommends that in the longer-term, the General Fund needs to allocate a greater proportion of funding to the rehabilitation and renewal of these assets. The General Fund allocates little in the way of funding for rehabilitation and renewal of assets at the present time.
- The MCG also recommends that the PWA focus its efforts on delivery of its “core services”, and cease delivery of its wide range of services. This focus is intended to enable the PWA to concentrate its resources on those essential services (e.g., street maintenance) that have clearly been underfunded.

## **2. Specific DEC Comments - Page 94 et. seq., Asset Management**

The discussion of asset management provides guidance toward general asset management principles, but does not address utilizing information already in the city’s Oracle financial system, which is used to depreciate assets in compliance with GASB 34. This data would be useful in planning long-term asset replacement needs. Public Works and DEC staff discussed this issue with staff from the Finance and Management Agency, Controller’s Office. We will continue to work with the Controller to develop this further.

## **MCG Response to DEC Comments Regarding Page 94:**

The discussion regarding the asset management system is intended to define the system that needs to be developed to manage the renewal and rehabilitation of the City’s assets. It is a system that does not exist at the present time. The asset information in Oracle is of little value in the absence of an asset management system.

See “The Additional Recommendations” section of this audit report for additional MCG comments regarding the utilization of Oracle’s Assets Module to record all assets, to ensure the effective implementation of GASB 34 and to enable the import and integration of infrastructure inventories into Azteca Cityworks.



### **3. Specific DEC Comments - Page 109, Master Plan for Sanitary Sewer Collection System should be updated.**

The audit raises a good question regarding master planning of specific assets within Oakland's infrastructure. In the case of the sanitary sewer system, the audit suggests the need for a master plan for the sanitary sewer collection system. However, the audit does not note that master planning for the sanitary sewer system is regulated by the Regional Water Quality Control Board (RWQCB) and the Region 9 of the Environmental Protection Agency (EPA).

We are currently completing work on an ambitious 25-year program to reduce wet weather related overflows from the sanitary sewer collection system. (Note, the audit references a 20-year plan. This plan was modified to a 25-year plan in the 1990's.) Five years remain on the program, which is mandated by the RWQCB under a consent decree. When complete, over 30% of Oakland's sanitary sewer collection system will have been rehabilitated, storm sewer cross connections eliminated, capacity increased and overflows decreased. The audit notes the significant increase in population since the time of the initial study. However, the audit does not note how much of this growth was anticipated, nor note that the most significant problem addressed by the I/I correction program is wet weather overflows, which are dependent upon the length and condition of collection system pipes and not significantly impacted by population growth.

The annual capital improvement program for sanitary sewers is regulated by the RWQCB and is in compliance with RWQCB requirements. In anticipation of the completion of the 25-year plan, staff is working directly with the various collection agencies within the East Bay Municipal Utilities District (EBMUD), the RWQCB and EPA to establish and plan for future improvements to the collection system. It is anticipated that a new and specific compliance plan for capital improvements to the collection system will be developed in the next two years as a result of this effort.

#### **MCG Response to DEC Comments Regarding Page 109:**

The MCG did not recommend a master plan for the sanitary sewer system; the MCG recommended that the existing plan, over twenty-years old, needed to be updated. The last two sentences of the DEC response noted "staff is working directly with the various collection agencies within the East Bay Municipal Utilities District (EBMUD), the RWQCB and EPA to establish and plan for future improvements to the collection system. It is anticipated that a new and specific compliance plan for capital improvements to the collection system will be developed in the next two years as a result of this effort." That was the recommendation of the MCG – that the sanitary sewer master plan needs to be updated. The MCG is glad to see that DEC is moving forward on that recommendation. The most serious problem with the sanitary sewer system is the excessive amount of sanitary sewer overflows. These overflows result from insufficient, ineffective, and inefficient maintenance management practices as reflected in the body of the audit report.

#### **4. Specific DEC Comments - Page 111, Street Rehabilitation**

The audit recommends a significant increase in the use of slurry seal in Oakland. The rehabilitation program managed by DEC has already increased the use of slurry seal, which had essentially been eliminated some time ago, in compliance with the Metropolitan Transportation Commission (MTC) guidelines for pavement management. DEC uses the MTC pavement management system "StreetSaver" to program Oakland's annual pavement rehabilitation work. The distribution of the various pavement preservation and rehabilitation tools (slurry, rehabilitation, mill/grind, etc.) is in compliance with MTC guidelines, which is a requirement of continued state and federal funding for this program. We strongly agree that the funding for pavement rehabilitation and maintenance be increased over current baseline appropriations.

#### **MCG Response to DEC Comments Regarding Page 111:**

As noted in the report, the City has 470 centerline miles / 1,402 lane miles of streets in good or very good condition (those streets with a PCI of 60 or above). Typically, these streets should receive a seal coat once every seven (7) years. This would require approximately 67 centerline miles / 200 lane miles of slurry seal be applied to the City's streets every year.

In the January 22, 2007 bid for citywide street resurfacing, a total of 32,250 square yards was slurry sealed. In the September 12, 2007 bid for street resurfacing and slurry seal, 104,340 square yards for slurry seal was included. In the October 20, 2008 bid for street resurfacing for 2007-08, no square yardage was included for slurry sealing. In this two-year period, a total of 136,590 square yards of streets were slurry sealed. This is equivalent to approximately 9.7 centerline miles or 19.4 lane miles. This is equivalent to a 97-year cycle for slurry sealing of all the City's streets. The MCG is unaware of any MTC guidelines that suggest this level of service for slurry sealing is adequate to preventively maintain the City's street system.

#### **5. Specific DEC Comments - Page 295, The City should adopt a policy that requires operations and maintenance funding be provided in the operating budget for the agency as part of accepting new assets to be maintained.**

We strongly agree with this recommendation and have already taken steps toward a similar policy. DEC works with the Budget Office and the City Administrator and client departments in developing the Capital Improvement Program. This year, DEC developed a new protocol for requesting capital improvement projects that requires an analysis of operating impacts of new capital improvement projects. For example, if a new library is proposed, the cost for custodial services, energy, librarian staff and other operating costs are required to be identified as part of the overall cost of the project. These costs are captured in a new database developed by DEC staff, in collaboration with Public Works and the Budget Office. In addition, DEC has recommended that formal consideration of the Capital Improvement Program be moved to the mid-cycle years of the City's budget cycle so that proposed projects may be thoroughly

considered by Council. Finally, DEC is working to develop a Capital Improvement Program that is based on 2-, 5-, 10- and 25-year planning horizons. We believe that these changes will address the issues raised in the audit in this regard.

#### **MCG Response to DEC Comments Regarding Page 111:**

The MCG recommends that the consideration of operations and maintenance funding for new assets be provided in the operating budget for the agency as part of accepting new assets to be maintained. This process should be integrated into the operating budget, the capital budget, and the Council Agenda statements.

The steps being taken by DEC are important steps, but the essential linkage for this policy is the operating budget, not the capital budget. The City needs to link new assets with the operating funding required to operate and maintain these assets in the operating budget.

#### **6. *Specific DEC Comments - Page 321, Sewer Service Fund Revenues are being used inappropriately.***

This conclusion is not supported by the facts. By way of background, the fund summary report appearing on Page 323 and used in the financial analysis was prepared by staff in DEC specifically to provide the type of top level summary of fund expenditures that is not available through the Oracle financial system. This same report is prepared and reviewed on a monthly basis and is also used for Funds 1750 and 2211. It was actually developed with the intention of assuring we were using funds properly, to support trend analysis and to plan for future allocations. When I initially met with the Auditor I explained this.

There are several other factors specific to understanding Fund 3100. They include:

- Capital project costs are captured in the bond trustee account and do not show under the “capital organizations” in the summary report
- Project staff in DEC are “master-filed” in “home funds,” but charge to specific projects throughout the year.

The audit states that DEC is budgeted at \$10 million, or 32% more than is budgeted for “maintenance and repair” of the system.

Actual staff charges, year-to-date, for DEC are \$4.2 million. Anticipated charges at year-end are \$6.3 million. Of these charges, \$2.5 million is budgeted for Right-of-Way Management activities, with anticipated year-end charges of \$2.3 million. These costs are anticipated to be offset by permit and inspection fee revenues of \$1.6 million. We agree that the non-sewer related costs in this unit would more appropriately be budgeted within the General Purpose Fund or the Development Services Fund.

All staff in DEC, with the exception of the Deputy Director and three Division Managers, are project funded. Because of the way the City currently budgets for project-funded positions, each FTE is “master-filed” within one of several funds in DEC, but charges their actual time to specific projects. For planning purposes it is estimated that 80% of staff time is dedicated to projects, 20% to “non-project” work. However, 100% of their time shows as a budgeted expense within those respective funds. Based on the year-to-date actual costs as of Period 8 (February), we anticipate that total staff costs in DEC to the sewer fund will total \$4 million at the end of this fiscal year for both project and non-project time. Staff is currently designing sanitary sewer projects with a total value of \$23 million, including approximately \$10 million in projects that will be proposed for Federal Stimulus funding.

Non-project activities include:

- Assistance to DIO staff, as needed to resolve sewer issues
- Staff to the Technical Advisory Board of East Bay Municipal Utilities District
- Development of the master plan for comprehensive Pump Station upgrades citywide
- Coordination with EPA and Regional Water Quality Control Board on compliance with the City’s plan and analysis of proposed changes to that plan

Going forward, staff is working with the Budget Office to establish a Clearing Fund to budget staff who will be assigned to projects, with offsetting revenue from budgeted capital projects. This will eliminate the problems posed by master-filing capital project staff in various funds.

The audit also suggests that Traffic Engineering and Street Design activities are being funded through the Sewer Service Fund. As discussed when we met previously, this is because staff who were master-filed in the sewer fund moved to these divisions as part of the DEC Rotation Program for Engineers. Actual charges within these groups are minimal and from charges prior to the rotation. For example, Traffic Capital (Org 88363) shows a budget of \$185,303 but actual expenditures are \$22,502 as of February, 2009.

Finally, the audit recommends that the fund manager for the sewer fund be in DIO rather than in DEC. This may be due to the interpretation of the financial information discussed above, or due to asset management considerations. In either case, we have discussed this recommendation with the Public Works Agency. Both DEC and Public Works agree that the fund and program manager should remain in DEC, due to the long-term planning and analysis needed to manage this program. It should be noted that Public Works and DEC have maintained an ongoing effort to work collaboratively on the sewer program regardless of any organizational differences.

## **MCG Response to DEC Comments Regarding Page 321:**

The MCG maintains that some of the charges to the Sewer Service Fund are inappropriate.

- Some of the costs being charged by the Engineering Design and Construction Department to the Sewer Service Fund seem significantly out of proportion to the needs of that fund. The cost of land survey services, for example, are estimated to cost the Sewer Service Fund \$584,000 in fiscal year 2008-09. The costs of Construction Management are estimated to cost \$1,350,000 in fiscal year 2008-09. These costs exceed cost of construction guidelines employed by the MCG for engineering design and construction management relative to the actual construction expenditures for sanitary sewer construction in fiscal year 2006-07 and 2007-08.
- All of Right-of-Way Management is budgeted in the Sanitary Sewer Fund, although much of the costs do not relate to the sanitary sewer system. While revenues are allocated to the fund for services provided by Right-of-Way Management, these revenues do not recover the costs of these services. Sanitary sewer ratepayers are subsidizing development provided by Right-of-Way Management; the subsidy approximates \$1.1 million annually. It is inappropriate for Right-of-Way Management to be budgeted in whole in the Sewer Service Fund; it is inappropriate for this fund to subsidize development. The Right-of-Way Management expenditures should be budgeted in a “clearing fund” and charged to other funds such as the Sewer Service Fund based upon the services provided to that fund.
- The City is charging the Sewer Service Fund \$600,000 annually for office space, in addition to the transfer to the General Fund from the Sewer Service Fund in the amount of \$3.011 million. This is inappropriate since this cost should be reflected in the General Fund transfer. The General Fund transfer from the Sewer Service Fund amounts to an estimated \$2,493,000 for fiscal year 2008-09

The revenues of the Sewer Service Fund should be directed to meeting the capital improvement needs identified in the sanitary sewer master plan. The Sewer Service Fund lacks sufficient funds to continue to address these deficiencies and allow the diversion of the revenues towards the services noted above.

## **7. *Specific DEC Comments - Page 327, Property Owners Should Be Responsible for Repairs to Sidewalk***

Last year DEC was successful in moving through Council legislation establishing a revolving fund to pay for repairs to sidewalks that are the responsibility of property owners, when those owners refuse to make those repairs in a timely fashion. DEC has also adopted a corridor approach to sidewalk repairs to prioritize repairs with high pedestrian volume. Under this program the City will notify all property owners along a

selected corridor of upcoming work. The City will complete repairs at locations that are damaged by City trees or fronting City property. Under this program the property owner may elect to pay the City to have its contractor complete the repairs at the City's stipulated rate, or hire their own contractor. If a property owner refuses to undertake these repairs, the City will complete them under contract and lien the property, using the revolving fund. We believe that this process will expedite repairs to a significant amount of sidewalks, while providing a higher level of customer service to private property owners who need to make repairs to their sidewalk.

#### **MCG Response to DEC Comments Regarding Page 327:**

The MCG recommended that

- The Agency should perform an annual inspection of the sidewalks in residential areas on a rotating basis to identify tripping hazards and prioritize a list of areas to be repaired, based on severity. Property owners should then be notified to make the necessary repairs. State law requires that the City send two notices giving property owners the opportunity to have the work performed themselves. Alternatively, property owners could choose to have the City's contractor perform the work. Before property owners are billed for the repairs, a public hearing would be held to receive any protests regarding the quality, quantity and cost of the sidewalk improvements. Property owners can then choose to pay the City or have the cost included on their County property tax bill.
- The Agency should develop and the City should adopt an ordinance that imposes a "duty" on the property owners for injuries to third parties as a result of the owner's failure to maintain the sidewalk. The City has yet to adopt that legislation.

The response by DEC did not address either of these recommendations.

#### **8. *Specific DEC Comments - Page 409, Recommendation to move DEC to Public Works***

The original intent of the move of DEC to CEDA was to centralize engineering functions in Oakland. As the audit acknowledges, the Engineering Services function (plan review, mapping, etc.) has not yet been combined with DEC. This must take place before reorganization back to Public Works is done. Once that is accomplished we believe the recommendation has merit.

#### **MCG Response to DEC Comments Regarding Page 409:**

With or without the inclusion of the Engineering Services function in DEC, DEC should be transferred to the PWA. It would be preferable, and it is a prevailing practice among peer cities, to include the Engineering Services function in DEC and to locate DEC in the PWA.



April 25, 2009

**To:** Courtney Ruby, City Auditor, City of Oakland

**From:** Gary Goelitz, Vice President, Matrix Consulting Group

**Subject:** Matrix Consulting Group (MCG) Provides Additional Recommendations as as a Result of Follow-up Discussions with PWA and the Department of Engineering and Construction (DEC).

In the discussions with the Public Works Agency and the Department of Engineering and Construction regarding the performance audit of the Public Works Agency, a number of other challenges were raised. The MCG has developed additional recommendations for these challenges. These additional recommendations are presented below.

**1. The Keep Oakland Clean and Beautiful Division Should Work with the City's Real Estate Division To Dispose of Properties Maintained by the Vegetation Control Unit That Do Not Have Long-Term Value to the City.**

The Vegetation Control Unit within the Keep Oakland Clean and Beautiful Division clears weeds and vegetation on a number of City-owned properties that are small or long and narrow. This includes, for example:

Property Location	Size of Property
165 W. MacArthur	4,800 feet by 2 feet
6027 Fortune Way	3,800 feet by 2 feet
98 <sup>th</sup> Avenue / San Leandro	12,500 feet by 2 feet
Crest / McCormick	59,500 square feet
Pardee / Hegenburger	42,700 square feet
Next to 517 98 <sup>th</sup> Avenue	45,500 square feet <sup>1</sup>
98 <sup>th</sup> Avenue / Lyndhurst	2,000 square feet

Property Location	Size of Property
Apgar / MacArthur	2,300 square feet
1148 71 <sup>st</sup> Avenue	3,200 square feet

The Keep Oakland Clean and Beautiful Division should develop a strategy in concert with the Real Estate Division for disposal of these properties for the consideration of the Mayor and City Council. In some instances, the City may wish to retain some of these properties for eventual development by the City (e.g., a park), but in other instances these properties may have no long-term value.

In a number of cases, these properties appear as though their sale would generate significant one-time revenue that could be utilized to assist the City in addressing the City's deferred maintenance backlog. In other instances, some of the properties have little value, are more of a nuisance to the City in terms of their ongoing maintenance workload, and should be quitclaimed to the adjacent property owners.

**Recommendation #288: The Keep Oakland Clean and Beautiful Division should develop a strategy, in concert with the Real Estate Division, for disposal of these properties for the consideration of the Mayor and City Council.**

- 2. The PWA Should Work With The Alameda County Flood Control District To Identify Those Capital Improvement Projects In The Stormwater Master Plan That The District Should Address With The Funding Resources Available To The District.**

The Agency should work with the Alameda County Flood Control District to clearly identify those projects in this master plan that will be addressed by the District. The District has its own funding source. The funding derived from the residents and businesses must be spent in Oakland. There are a number of large projects that should be addressed by the District. This responsibility should be clarified in a written agreement between the Agency and the District.

**Recommendation #289: The Agency should work with the Alameda County Flood Control District to clearly identify those projects in the Drainage Master Plan that will be addressed by the District. This allocation of projects to the District should be clarified in a written agreement between the Agency and the District.**

- 3. The City's General Fund Should Increase The Funding For Asset Renewal And Replacement.**

As noted elsewhere in this report, the City's General Fund contribution is less than that of other public works departments in similar cities in California. In Long Beach, for example, the general fund provides 17% of the operating funds for the Public Works Department. In Anaheim, the general fund provides 19% of the operating funds of the



Public Works Department. In Fresno, the general fund provides 26% of the operating funds of the Public Works Department. In Sacramento, the general fund provides 22% of the operating funds of the Transportation Department (Sacramento does not have a Public Works Department). In Santa Ana, the general fund provides 5% of the operating funds of the Public Works Department (this lower proportion of general fund contribution in Santa Ana results from inclusion of a water utility within the Department that significantly increases departmental expenditures and reduces the proportion of general fund expenditures).

The Matrix Consulting Group does not recommend that the City of Oakland increase its General Fund contribution to enable the Agency to increase its staffing. The level of authorized staffing in the Agency, at the present time (April 2009) is sufficient overall to deliver a good level of service. The Matrix Consulting Group does, however recommend that the City increase the General Fund contribution to enable the renewal and replacement of those assets that are not funded by enterprise funds. These assets would include parks, streets, sidewalks, traffic signal controllers, regulatory signs, etc. While the City faces a number of difficult choices in the long-term, ignoring the renewal and replacement of these assets will have significant and deleterious financial impacts. The cost of slurry seal per square yard is approximately 2% to 3% of the costs of reconstructing a street, for example. It is much less expensive to maintain a street in good condition, than to reconstruct one.

**Recommendation #290: The leadership of the Agency should work with the City's Budget Office, Finance Department, the Mayor and the City Council to develop long-term financial strategies to increase the amount of General Fund expenditures for asset renewal and replacement.**

**4. The City Should Utilize Oracle's Asset Module To Record All Assets At The Time The Assets Are Accepted By The City.**

In June 1999, Governmental Accounting Standards Board (GASB) Statement 34 (or GASB 34) was published. GASB 34 requires state and local governments to begin reporting the value of their infrastructure assets, including roads, bridges, water and sewer facilities, and dams, in their annual financial reports on an accrual accounting basis. Accrual accounting methods are generally the standard utilized in the private sector. In reviewing a corporate annual report, the reader should expect to see an accounting of the remaining useful value of all assets. By bringing public agencies in line with these accounting norms, GASB 34 has the potential to make local governments' overall financial condition more comprehensible to the public, investors, creditors, and the agencies themselves. GASB 34 has been incorporated into the accreditation standards of the American Public Works Association.

The principal purpose of Statement 34, then, is to "improve the accountability of governments to their citizens by providing better, more accessible information about the

condition and costs of capital assets.”<sup>1</sup> Ultimately, the intent of the new standards will encourage better stewardship of public resources. By reporting the value of public assets over time, local governments will make their improvements - or lack of improvements - to public assets more apparent.

The effective implementation of GASB 34 by the City requires two modifications in existing approaches. First, the City should record the value of the assets at the time the City accepts the asset. Second, as the Agency deploys Azteca Cityworks, the Oracle Asset Module should be linked to Azteca Cityworks to enable the import and integration of infrastructure inventories, comprehensive GASB-34 inventory and reporting for all system(s) assets for which the Agency is responsible.

**Recommendation #291: The City should record the value of the assets at the time the City accepts the asset.**

**Recommendation #292: The Oracle Asset Module should be linked to Azteca Cityworks.**

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<sup>1</sup> Terry K. Patton and Penny S. Wardlow, “Why Infrastructure Reporting?” GASB Action, Vol. 16, No. 5, May, 1999

# **Summary of the Focus Group Meetings**

## **CITY OF OAKLAND, CALIFORNIA**



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**July 2008**

## **FOCUS GROUPS**

As part of the management study of the Public Works Agency, the project team conducted group meetings with Oakland residents. Participants included residents, members of community-based organizations, and representatives from neighborhood groups. The objective of these group meetings was to obtain the attendees' perceptions about the services provided by the Public Works Agency.

All groups were solicited through the Neighborhood Crime Prevention Council list-serves.

The Matrix Consulting Group facilitated four focus groups over a one month period as presented below.

- One group meeting was held in the Allendale neighborhood, located in the central region of the City. Sixteen residents participated.
- One group meeting was held in Sobrante Park at the Arroyo Viejo Recreation Center, located in the eastern region of the City. Thirteen residents participated.
- One group meeting was held in Temescal at the Bushrod Recreation Center, located in the northern region of the City. Sixteen residents participated.
- One group meeting was held in the Lakeshore neighborhood at a local church, located in the Lake Merritt/Downtown area of the City. Sixteen residents participated.

All meetings were conducted on a confidential basis in order to obtain candid feedback. Public Works Agency staff did not attend these meetings. The City Auditor initiated the meeting. Gibson & Associates and Matrix Consulting Group staff facilitated the community input portion of the focus groups. The meetings lasted about 1.5 hours each. A total of 61 residents shared their perspectives on the Public Works Agency at the four group meetings.

The focus group meetings were intended to elicit views and opinions in relation to the services that the Public Works Agency provides to Oakland residents. Questions addressed satisfaction with these services, and more specifically the responsiveness, accessibility, and quality of services. The focus group meetings provided an opportunity for residents to discuss each of the different services that the Agency provides, including:

- Streets lights and electrical services;
- Environmental compliance and stewardship of natural resources;
- Enhancing the City's cleanliness through the Keep Oakland Clean and Beautiful Program (illegal dumping and graffiti abatement);
- Recycling and solid waste programs;
- Sanitary sewer maintenance;
- Storm drain maintenance;
- Street and sidewalk maintenance;
- Street sign maintenance;
- Tree services; and
- Park maintenance.

Participants were provided with a list and given the opportunity to discuss any of the service areas. It is important to note that a variety of service areas were discussed in each group and participants did not comment on each area. Street and sidewalk maintenance, Tree Services, Park Maintenance, and Keep Oakland Clean and Beautiful received the greatest amount of discussion at these meetings.

In considering the results, the reader must bear in mind that unlike documents and statistics, the views expressed by individuals are subjective and may reflect

personal biases. Nonetheless, these comments are important since residents have first-hand experience as customers of Agency services. A second important consideration is that in analyzing the material, it may not be as important to determine whether a particular response is "correct" as it is to simply acknowledge the response.

**1. PARTICIPANTS CITED SEVERAL AREAS OF SATISFACTION WITH THE SERVICES PROVIDED BY THE PUBLIC WORKS AGENCY.**

Although one of the main goals of the focus group meetings was to identify opportunities for improvement, participants cited several areas in which they were satisfied with the services provided by the Public Works Agency. These comments are presented below.

- Residents experienced responsive and high quality services from Keep Oakland Clean and Beautiful, especially with respect to the Agency's addressing illegal dumping and graffiti. The graffiti abatement kits were appreciated.
- The maintenance of several parks in Oakland was rated highly, including Lake Merritt, Arroyo Viejo, Madison Square, Sheffield Village, and the Splash Pad.
- Some residents were satisfied with the quick turn-around time for inspecting sidewalks, removing hazardous tree conditions, and repairing street lights.
- Many residents were satisfied with the customer service at the Call Center.
- Several representatives of neighborhood organizations and other community-based organizations had developed positive working relationships with the Public Works Agency and were very satisfied with the level of collaboration and resolution of concerns in their neighborhood.

Overall, there were a number of services that the Agency delivers that participants believed were responsive.

**2. PARTICIPANTS REPORTED THAT THE PUBLIC WORKS AGENCY DOES NOT PROVIDE PROACTIVE MAINTENANCE SERVICES, BUT INSTEAD, REACTS TO SERVICE REQUESTS.**

Most participants concurred that the Public Works Agency is complaint-driven and does not anticipate and prevent problems in each of its services. City residents were not satisfied with the overall maintenance of the City's infrastructure and natural resources. Comments related to this finding are presented below.

- The participants indicated that problems related to graffiti, median maintenance, potholes, streetlights, tree removal and trip and fall hazards were not addressed proactively. The participants believed the Agency relies on residents, rather than Agency staff, to identify and relay concerns.
- The participants indicated that because the Agency was complaint-driven, higher income neighborhoods tend to get a higher level of service because they have time to advocate the resolution of their problems with the Agency until their problem is resolved. It was also perceived that residents in higher income neighborhoods were also more likely to organize their neighbors, work with existing organizations, or call on elected officials to get concerns resolved. It was perceived that the Agency did not appear to have a strategy for addressing problems in neighborhoods where many residents do not lodge complaints or engage in advocacy.
- The participants indicated that the division of roles and responsibilities between the Community and Economic Development Agency (CEDA) and the Public Works Agency were unclear. It was perceived that locating Engineering in CEDA, along with the responsibilities associated with long-term capital improvements to the City's infrastructure limited the effectiveness of PWA in responding to problems with assets. Residents do not know who to call for problems that fall within the jurisdiction of CEDA.
- The participants indicated that employees appear to respond only to the complaint they have been given, rather than taking initiative to report and address problems in service areas outside their immediate area of responsibility. Residents cited several instances in which Agency employees were observed repairing a certain problem in the neighborhood, but ignoring other clearly visible issues- for example repairing one pothole that had been called in, but failing to repair others on the same block. Residents stated that Agency employees do not appear to report problems that fall within or outside their service area that they may observe as they go about their work.

- The participants indicated that City-owned trees do not appear to be on any kind of regular pruning and trimming schedule. Residents wanted information on tree trimming activities by neighborhood to be available annually. Residents questioned why trees by Lake Merritt receive regular pruning, while those in their neighborhoods do not.
- The participants indicated that Tree Maintenance should prioritize the development of an urban forest management plan, as well as more proactively plan for the maintenance of trees planted through the tree planting program. Residents were concerned about the impact of newly planted trees on a division that does not regularly maintain existing trees.
- The participants indicated that storm drain maintenance does not appear to be on any kind of regular maintenance schedule. Residents requested information about a schedule of maintenance for storm drains, by neighborhood.
- The participants indicated that maintenance of the City parks was limited and not on a regular schedule. While some participants noted that they had developed relationships with the Parks program that resulted in regular maintenance, many felt that there should be regular maintenance regardless of one's relationship or neighborhood. Residents were concerned about the lack of maintenance of developer-installed landscaping on City streets and medians once responsibility is transferred to the City.

Overall, the comments suggested that Oakland residents view the Agency as complaint-driven and reactive. Residents suggested that the Agency develop a schedule for regular maintenance in each of its service areas and share that information with Oakland residents. While most were opposed to adding a position responsible for proactively identifying problems, they wanted Agency employees to take greater ownership for identifying and relaying concerns to the appropriate agency or division as they go about their daily work in the City.



**3. PARTICIPANTS REPORTED THAT THE PUBLIC WORKS AGENCY'S LEVEL OF SERVICE, QUALITY OF WORK, AND RESPONSIVENESS WERE INCONSISTENT.**

Participants in the focus groups agreed that the level of service, quality of work and overall responsiveness of the Agency were inconsistent within service areas and across the Agency. Each report of a positive experience with the Agency in a particular area was often followed by other reports of experiences that fell below customer expectations and vice versa. Individual participants also reported having had a positive service experience in one instance, followed by a less-than-satisfactory experience with the resolution of a subsequent complaint. Comments related to this finding are described below:

- The participants were generally satisfied with the timeliness of response of the graffiti abatement program, though the recent spike in tagging had left many complaints unresolved. Residents wanted to know if the program was responsible for addressing graffiti on private property, foreclosed properties, and in areas where there is no resident available to report concerns.
- The participants, while satisfied with the quick turn-around for complaints related to illegal dumping, believed that litter and illegal dumping were not consistently addressed in East Oakland neighborhoods, especially in those areas without sidewalks, in empty lots, or in front of vacant properties and businesses. One East Oakland property owner reported that they were told that it would take 2-4 weeks for the Agency to remove a toilet that had been dumped and was being used by homeless people.
- The participants indicated improper tree trimming and pruning of City-owned trees. Requests for service had been unanswered, trees were over-pruned (especially older trees) or topped, or only half of a tree was pruned (residents were told that another Agency or company was responsible such as Pacific Gas and Electric). Others reported that they had been told by Agency employees that they could only trim a few trees in the park due to limited resources.
- The participants indicated that tree trimming services performed by Davy's Tree Service and other contractors were improper.
- The participants indicated that the length of time required for responses to complaints about trip and fall hazards caused by City-owned trees was too long.

While many participants noted the lack of funds to repair city sidewalks, they did not understand how the City prioritizes sidewalk repairs or what funds are available for making these repairs.. The length of time to actually complete a repair (2 weeks, according to residents) was viewed as too long.

- The participants indicated that the quality of pothole repair was poor. Potholes were filled, rather than squarely cut and or insufficiently tamped down, and within a month had receded or eroded. Residents who had observed pothole repairs noted that the crews seemed too large, sometimes having more than four staff members. Residents reported that potholes requested for filling during the pothole blitz were not filled.
- The participants indicated that the contractors responsible for repairing and repaving streets left supplies and debris at the work site after work appeared completed; it was removed after residents called in to complain. Residents were concerned about the quality of work completed by contractors, as well as the poor quality of City streets in general.
- The participants indicated that some streets that had been recently repaved were not heavily trafficked or thoroughfares; residents shared concerns that streets may have been repaved to gain political favor, instead of addressing high priority concerns.
- Some participants were satisfied with the maintenance of parks and open spaces in their neighborhood, but many were not. Some felt that the City should more proactively manage vegetation in open spaces, whereas others observed that the park maintenance was limited to “emptying the trash can.”
- The participants indicated that while Call Center customer service was positive and courteous, follow-up from Agency employees in resolving a complaint was inconsistent and slow.
- Residents noted that the Call Center computer system forces employees to request information that should not be required (i.e. a street address for Lake Merritt). For example, the Call Center requested the streetlight pole number.
- The participants expressed frustration with not being able to know where their complaint fell on the list of priorities, since Call Center employees do not have such information available. On the other hand, participants also acknowledged that residents tend to flood the Call Center with calls about their specific problem in order to get a response, even if it is not an emergency or a high priority.
- About half of the participants had relied upon their City Council member’s office to get a complaint resolved, after poor follow-up through the Call Center.

- The participants indicated satisfaction with the streetlight repair program. Some wanted program staff to identify and repair malfunctioning streetlights, whereas others noted that problems are most evident during the evening hours, when staff were not on duty.
- The participants indicated that employees and managers were responsive and effective, particularly by those individuals representing community-based organizations or neighborhood groups, whereas those without personal relationships with Agency programs or staff viewed employees as inefficient, unmotivated and inaccessible.

The participants indicated that the quality of services and response time are uneven.

The participants requested more information about the Agency's decision-making process with respect to addressing problems in each service area. While participants acknowledged a lack of human and fiscal resources, they also emphasized that the quality of service frequently falls below their expectations, given existing resources.

Participants provided the following suggestions to improve consistency of services:

- An improved system for tracking the status of concerns and a mechanism for relaying that information to residents;
- Improved management, such as increased presence of management in the field/on-site; and
- Employee incentives to increase productivity and ownership of the City's infrastructure.

Participants also wanted additional information about the quality of services provided by contractors, and ongoing program monitoring and evaluation of the Agency in each of its service areas. Finally, participants also recognized the limitations facing the Agency and noted that the Agency needs to better partner with the communities themselves and promote prevention (especially around littering, recycling, and graffiti) in order to begin to move from a complaint-driven model.

**4. PARTICIPANTS REPORTED INSUFFICIENT COMMUNICATION AND TRANSPARENCY FROM THE PUBLIC WORKS AGENCY REGARDING STAFFING, BUDGETARY CONCERNS, AND PERFORMANCE MEASURES FOR EACH SERVICE AREA.**

In general, participants perceived that the Agency was understaffed, underfunded and inefficient in using existing human and fiscal resources, though most participants noted that these were merely perceptions because data on the Agency's staffing levels, budget and workload is not available to them. Participants concurred on the need for greater dialogue, communication and transparency between the Agency and Oakland residents. A number of recommendations were surfaced by residents to improve the effectiveness of the Agency. Specific comments and recommendations are presented below.

- The Public Works Agency does not routinely meet with the neighborhood associations to discuss the services the Agency provides, the level of service, the impact of limited funding, etc.
- Participants requested additional forums to communicate and partner with the Agency, both in relation to the overall status and plan for the Agency, as well as to address neighborhood concerns. The Agency should look at the Police Department's problem-solving programs with the Neighborhood Crime Prevention Councils and replicate those structures to improve relationships with Oakland residents. Community-based organizations currently rely on individual relationships to get things done, but wanted the Agency as a whole to recognize them as partners and use these partnerships more strategically (i.e. to generate additional funding.)
- Participants identified a need for more communication about the status of individual complaints/requests from the Agency, particularly for those service areas with substantial backlogs, such as sidewalk repair, tree pruning, and graffiti abatement. Submitting a request was hit or miss; Call Center staff had little information regarding the status or priority level of a given complaint.
- Participants indicated that additional publicity regarding the Agency's service areas, contact information, Call Center, and website was needed, especially for those lacking Internet access or limited English proficient residents. Participants wanted more information regarding the areas that homeowners are responsible for, versus those that fall within the jurisdiction of the Agency.

- Participants concurred that the Agency is underfunded and understaffed, citing the reductions in staff over the past 30 years. However, many viewed the use of existing resources as inefficient and wanted greater accountability from the Agency, requesting that performance measures, data on workload, budgets, and organizational structure be made available to residents.
- There was a shared perception by participants that the Public Works Agency does not provide equal levels and quality of service across the diverse neighborhoods in Oakland. Residents attributed this to higher levels of advocacy in upper income neighborhoods, preferential treatment, community characteristics, and/or the “broken windows theory.” Some participants felt that the City government, Agency employees, and residents themselves let the City’s infrastructure and environment degrade in low-income neighborhoods to such a level that problems become intractable. The Agency should take a more proactive and preventive approach through partnerships with residents, young people, volunteers, local businesses and community-based organizations. Arroyo Viejo Park was cited as an effective model for this type of collaboration.
- While participants were highly satisfied with the quality of work performed by Agency employees in some instances, the participants believed that the Agency as a whole could improve its efficiency. Crew sizes appeared too large, ranging from three (3) to eight (8) employees and the use of employees was not cost-effective. Participants reported a variety of instances in which crew members were idle, while others completed the work, or situations in which crew members were observed sitting in their trucks “doing nothing” for extended periods of time. Requests for data on workload and service delivery in different neighborhoods were not available from managers.
- Participants expressed concern that Agency employees were not properly trained, supervised or mentored, resulting in a lack of ownership in caring for the City’s infrastructure. There was a perception by participants that employees are not sufficiently trained and motivated to do a superior job.
- Participants indicated that the Agency does not provide contact information to other agencies that may be responsible for resolving resident concerns, such as CEDA or Pacific Gas and Electric. Participants requested that Agency staff have information readily available to refer residents appropriately.

While some participants voiced concerns about the under-funding of the Public Works Agency, many also expressed frustration about the lack of efficiency, transparency, and accountability. Residents expressed concern that taxpayer dollars were not being well used and that before additional funds are allocated, existing

resources should be maximized. According to some participants, the work of the Agency is informed by political priorities and a desire to curry favor with certain constituencies, as opposed to the pressing infrastructure needs of the City. Participants recommended that City leadership and Agency leadership take a more strategic and long-term approach to repairing and maintaining the City's infrastructure, with a focus on increasing efficiency, securing additional funding, and identifying appropriate organizational structures for the Agency and CEDA to work together effectively.

**5. SPECIFIC CONCERNS REGARDING THE SERVICES PROVIDED BY THE PUBLIC WORKS AGENCY.**

A number of participants had specific concerns regarding the services provided by the Public Works Agency. The specific concerns are grouped by the type of service provided by the Agency in the paragraphs below.

- **Streetlights**

- Pedestrian walkways need adequate lighting, similar to the new light system on Broadway Auto Row;
- Monte Vista Neighborhood has asked for more lighting and received no response from the Agency;
- Bicycle trails and lanes need more light;
- High Street/Nimitz Freeway underpass – several streetlights are out in this area and have not been replaced;
- Response time to streetlight outages takes a week, and the response time had been much quicker in the past;
- Lights frequently blink on and off in the Seminary area; and
- Lakeshore – Grand Avenue area needs better lighting.

- **Recycling**

- Residents of the Multi-Unit housing location requested green recycling bins and received no response from the Agency;
- After regular scheduled garbage pick-up, bins are thrown into the middle of the sidewalk in the Monte Vista neighborhood- unsafe for handicapped/blind residents;
- Community would like to start recycling of commercial concrete, construction debris and sand;
- Renter of Multi-Unit complexes are required to call the landlord for bulky waste – requesting residents need to have direct contact to have waste removed; and
- Need to advertise more and locally to inform residents of official recycling center locations.

- **Keep Oakland Clean and Beautiful**

- Street sweepers drive through neighborhoods too fast, never at 5 to 7 miles per hour, which is the suggested speed limit;
- Abandoned autos are left unattended on Oakland streets for too long (at least 1 month);
- Stickers providing contact information on how to report graffiti are needed on utility poles-has not happened;
- Graffiti is more prominent on neighborhood utility boxes (e.g., EBMUD, and Comcast) - who is responsible for removing graffiti on these boxes?; and
- Seminary Avenue utility boxes have lots of graffiti.

- **Streets and Sidewalks**

- Lake Merritt – Sinkholes;
- Serious potholes for two block stretch on San Pablo- never repaired;
- Potholes need to be checked for consistently reoccurring potholes;
- Clayton Court – Potholes increasing in size;

- Poor patchwork is causing continuous potholes;
  - Jackson St/8<sup>th</sup> and 9<sup>th</sup> Church Street (down all those streets) – underlying layers are exposed;
  - Dangerous potholes;
  - Brookdale/ east of Coolidge – took crown out of the street, thus limiting the ability of stormwater to drain properly; and
  - 35<sup>th</sup> Avenue above Foothill- Utility dug up newly paved street (3 weeks afterward)- Utility Code enforcement.
- **Sanitary Sewers**
    - Ransom and 38<sup>th</sup> Avenue have back-up problems and residents are getting the run-around when reporting incidents of backup or flooding;
    - Sewers are not being fixed: only the small back-up is addressed, rather than the main problem causing the backup;
    - East Oakland sewer systems get backed-up frequently;
    - Hayes Street residents continuously report that water and sewage is backing up in their basements-no response from the Agency;
- **Parks and Median Maintenance**
    - Park maintenance employees are not receiving appropriate training – employees butcher plants;
    - 4000 Piedmont – African Ira plants, flowers need staff with horticulture training;
    - Walking along trails at Miller Park - has a lot of dry vegetation that needs to be cut – it is unsafe;
    - The Glen Creek Park in the Monte Vista area – park maintenance staff should stay out of park due to new native plants, since the park maintenance employees butcher plants;
    - Excessive trash in park bins not being picked up-residents empty the bins themselves;



- Garbage men don't stop because they see the bin empty – but it is emptied not by the Agency, but by residents;
- Garbage trucks break sprinkler heads when the trucks drive over the turf to remove trash at Lake Merritt Park, Mosswood Park, and Marston Campbell Park in West Oakland;
- **Tree Maintenance**
  - West Oakland – tree roots have broken up the concrete (dangerous);
  - Getting trees trimmed takes up to one-year - 75<sup>th</sup> Avenue East Oakland;
  - Roots are lifting up sidewalks and residents can easily hurt themselves, as a result;
  - Trees are not planted by the City, but are considered City trees and residents are being held liable for damages that the tree causes in front of their houses;
  - Oakland needs to analyze the long-term costs of tree planting and develop work plans to maintain the urban forest;
  - Why aren't rubber inserts utilized for sidewalks to address the problem with tree roots?;
  - Tree maintenance workers are not trained on tree maintenance and trimming; and
  - Tree maintenance workers topped the trees on 10<sup>th</sup> Avenue - three blocks of trees that blocked or impeded streetlights.

# **Summary of the Results of the Employee Survey**

**CITY OF OAKLAND,  
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**July 2008**

## **EMPLOYEE SURVEY**

As part of the performance audit of the Public Works Agency, the Matrix Consulting Group conducted a confidential employee survey to obtain the perceptions of the employees of the Agency regarding staffing, operations, management, leadership and organizational performance.

### **1. THE SURVEY WAS DISTRIBUTED TO ALL OF THE EMPLOYEES OF THE PUBLIC WORKS AGENCY.**

After distributing the employee survey to all the employees of the Public Works Agency, 454 employees provided a response. This represents a response rate of 81% (based on the number of filled positions within the Agency). The number of respondents in each Division is presented in the table below.

<b>Current Assignment</b>	<b>Number of Respondents</b>	<b>% of Total</b>
Administration	31	6.8%
Electrical Services and Traffic Maintenance	33	7.3%
Equipment Services	45	9.9%
Infrastructure Maintenance	104	22.9%
Environmental Services	17	3.7%
Facilities Services	58	12.8%
Keep Oakland Clean and Beautiful	71	15.6%
Park and Building Services	95	20.9%
<b>Total</b>	<b>454</b>	<b>100%</b>

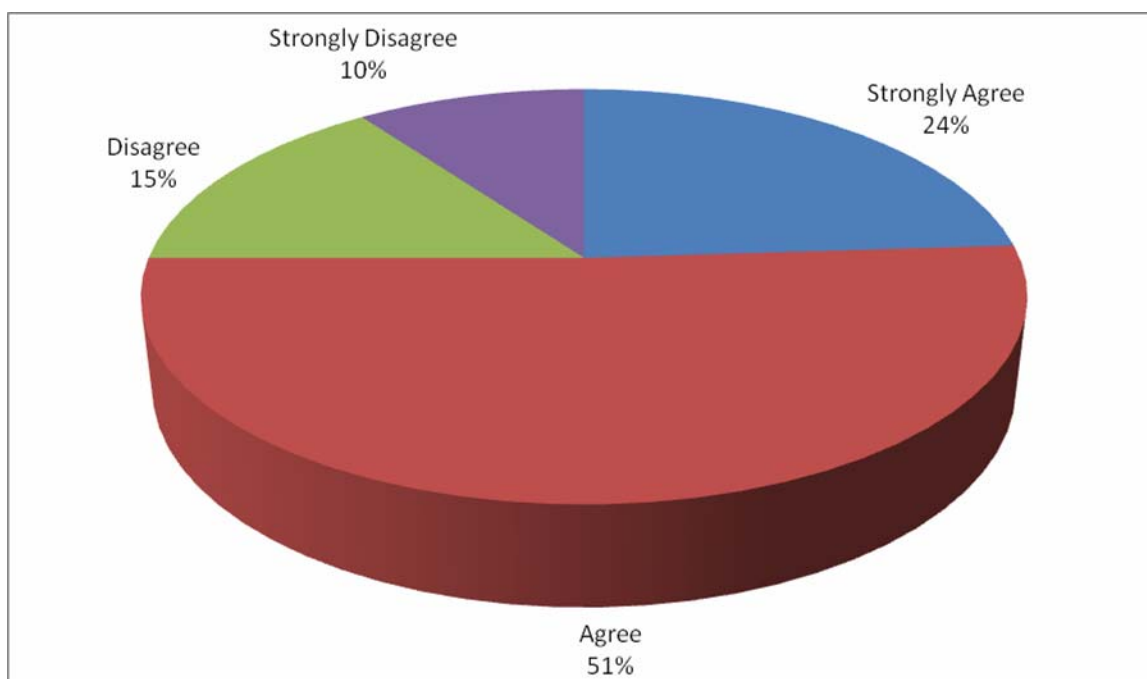
The survey was prepared by the Matrix Consulting Group. The survey contained 43 multiple-choice questions that covered a wide range of topics regarding the management, organization, and operation of the Public Works Agency. Employees were asked to respond to each statement by selecting “neither agree nor disagree,” “strongly agree,” “agree,” “disagree,” or “strongly disagree.” Surveys were administered over a two-week period to each division; a make-up session was also held to help reach as

many employees as possible. Results were analyzed by topic area, by division, and agency wide (???). Eight (8) surveys that were left blank or had the same response for each item were discarded. For individual items, blank or multiple responses were not included in the analysis.

**1. OVERALL, EMPLOYEES CITED A HIGH NUMBER OF POSITIVE ASPECTS OF THE PUBLIC WORKS AGENCY.**

In reviewing the responses to the questionnaire, it is important to look at the pattern of responses for the entire group versus that for the individual responses.

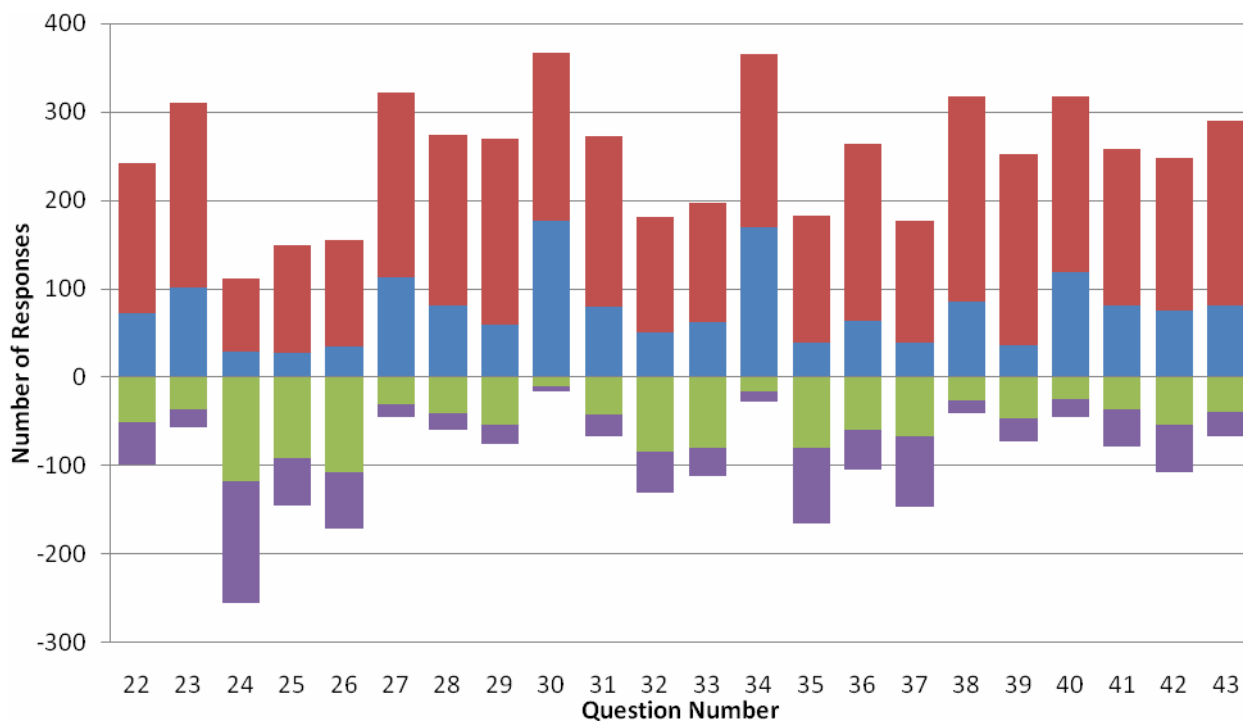
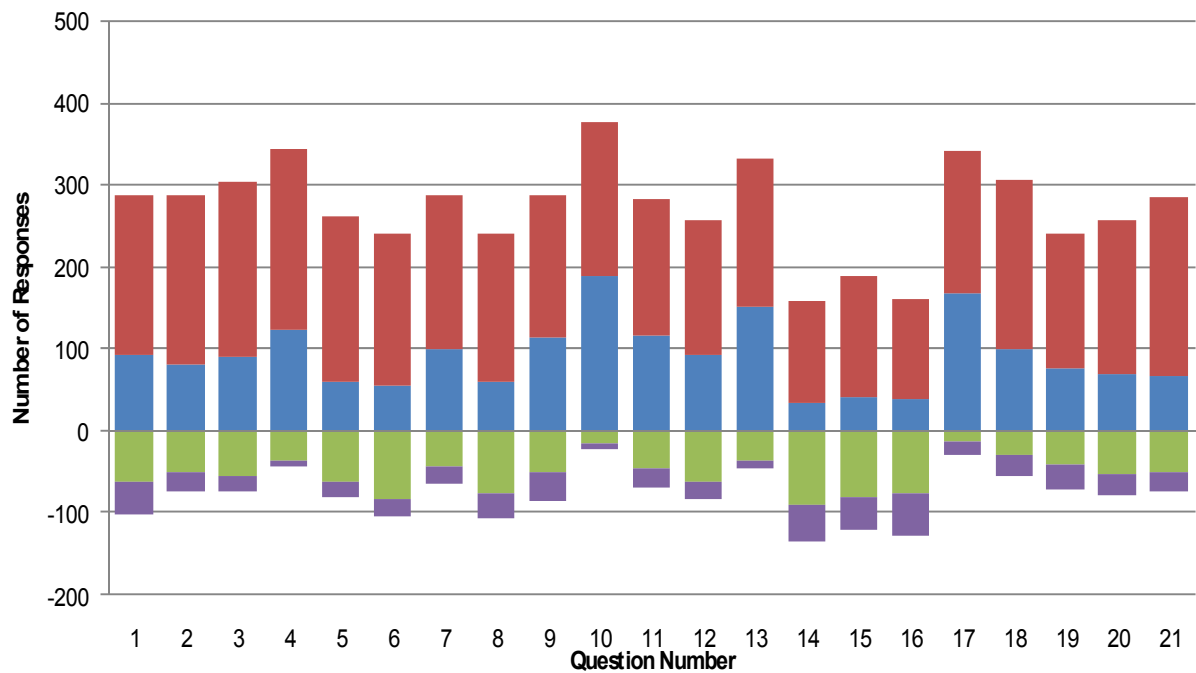
The chart below summarizes the overall distribution of responses to statements in the employee survey. It should be noted that the chart does not include responses in which the employees selected “no response” or did not make a selection.



The response pattern for all statements in the first section of the employee survey indicates employees had relatively high levels of agreement with the various survey statements. Approximately, 75% of responses were positive (either “somewhat

agree” or “strongly agree); 25% were negative (either “somewhat disagree” or “strongly disagree.”).

To gain a more detailed sense of the responses from the employee survey, it is useful to look in more detail at the statements that elicited the strongest positive and negative responses. The chart, found below, plots the actual number of positive and negative responses for each statement. Statement numbers are shown along the bottom of the chart. Neutral responses are excluded.



The chart, above, presents the positive and negative responses for each statement provided in the first section of the employee survey. The positive responses (e.g.,

“agree” and “strongly agree”) are plotted *above* the X-axis. The negative responses (e.g., “disagree” and “strongly disagree”) are plotted *below* the X-axis. The chart provides an overall visual representation of the response to each statement. It allows strongly positive or negative responses to be singled out. It is important to note that 42 out of the 43 items were positive statements about the Agency or divisions. Key findings are highlighted below

**(1) Employees Noted That Safety Concerns Are Adequately Prevented And Addressed By The Public Works Agency.**

There were five questions in the employee questionnaire regarding safety. These five questions and the responses are presented in the table below. The number on top is the raw data and the bottom number represents the percentage.

Question	Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree
2. Safety hazards are quickly corrected once brought to the attention of supervisors in my work unit.	24 5.5%	50 11.5%	74 17%	205 47.1%	82 18.9%
5. The Public Works Agency periodically inspects and corrects safety hazards and unsafe work conditions.	19 4.2%	61 13.6%	106 23.7%	203 45.3%	59 13.2%
13. The safety of employees in my work unit is a priority to the supervisors and managers.	9 2%	37 8.4%	63 14.3%	181 41%	151 34.2%
19. The Public Works Agency has a safety committee that produces solutions to employee safety problems	31 7%	41 9.3%	132 29.8%	162 36.6%	77 17.4%
40. The safety of employees in my work unit is a priority to the supervisors and managers in the Agency.	21 4.8%	25 5.7%	75 17.1%	199 45.4%	118 27%

Important points to note regarding these responses are presented below.

- 65% of employees agreed with the statement in question #2 that “Safety hazards are quickly corrected once brought to the attention of supervisors in my work unit.” 17% disagreed and 17% neither agreed nor disagreed.
- 75% agreed with the statement in question #13 that “The safety of employees in my work unit is a priority to the supervisors and managers.” 10% disagreed and 14% neither agreed nor disagreed.
- 64% agreed with the statement in question #19 that “The Public Works Agency has a safety committee that produces solutions to employee safety problems.” 30% neither agreed nor disagreed, while 16% disagreed.
- 73% agreed with the statement in question #40 that “The safety of employees in my work unit is a priority to the supervisors and managers in the Agency.” 17% neither agreed nor disagreed, while 10% disagreed.

Most respondents rated the Division-level response to addressing safety concerns more highly, but were less sure about the Agency-wide approach to preventing and addressing safety concerns. While more than half agreed that a safety committee exists, nearly a third chose a neutral response, suggesting that they may be unaware of such a committee.

**(2) Employees Are Satisfied With The Level Of Career Development, Skill Building And Training Offered Through The Public Works Agency.**

There were four questions in the employee questionnaire regarding career development and training. These four questions and the responses to each are presented in the table below. The number on top is the raw data and the bottom number represents the percentage.

Question	Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree
11. I have been given a real opportunity to improve my skills in my work unit.	22 5%	46 10.5%	88 20.1%	167 38.1%	115 26.3%
21. I receive the training I need to do an effective job in my work unit	23 5.4%	50 11.8%	68 16%	217 51.1%	67 15.8%
22. My immediate supervisor	47	52	93	170	72



Question	Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree
does an effective job of coaching and mentoring me.	10.8%	12%	21.4%	39.2%	16.6%
41. I am given real opportunities in my work unit to improve my skills through formal training (such as classes, seminars, tuition reimbursement, etc.)	42 10.1%	37 9%	78 18.8%	177 42.8%	80 19.3%

Important points to note regarding these responses are presented below.

- 74% of the respondents agreed with the statement in question #11 that “I have been given a real opportunity to improve my skills in my division.” 16% disagreed with the statement, while 20% neither disagreed nor agreed with the statement.
- 66% of the respondents agreed with the statement that in question #21 that “I receive the training I need to do an effective job in my work unit.” 17% disagreed with the statement, while 16% neither disagreed nor agreed with the statement.
- 56% of the respondents agreed with the statement in question #21 that “My immediate supervisor does an effective job of coaching and mentoring me.” 23% disagreed with the statement, while 21% neither disagreed nor agreed with the statement.
- 62% of respondents agreed with the statement that in question #41 that “I am given real opportunities in my work unit to improve my skills through formal training (such as classes, seminars, tuition reimbursement etc.)” 19% disagreed with the statement and another 19% neither agreed nor disagreed.

Most respondents were satisfied with the extent of training and skill development opportunities available in the Public Works Agency within their division. Some respondents were concerned about the lack of mentoring and coaching from their direct supervisors.

**(3) Most Employees Have The Tools And Equipment They Need To Do Their Jobs, Although The Quality Of Vehicles Was Rated Less Favorably.**

There were two questions in the employee questionnaire regarding the quality of Public Works Agency equipment. These two questions and the responses are

presented in the table below. The number on top is the raw data and the bottom number represents the percentage.

Question	Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree
36. I have the tools and equipment I need to efficiently perform my job.	46 10.5%	60 13.7%	69 15.7%	201 45.8%	63 14.4%
37. The vehicles assigned to my work unit are in good condition.	79 18.5%	68 15.9%	105 24.5%	137 32%	39 9.1%

Important points to note regarding these responses are presented below.

- 59% of the respondents agreed the statement in question #36 “I have the tools and equipment I need to efficiently perform my job.” 24% of the respondents disagreed with the statement, while 16% of the respondents neither agreed nor disagreed with the statement.
- 34% disagreed with the statement in question #37 that “The vehicles assigned to my work unit are in good condition.” 41% agreed and 25% neither agreed nor disagreed.

While most employees have the equipment and tools they need to efficiently perform their jobs, employees indicated that vehicles in their units are in poor condition.

**(4) Most Employees Think That The Public Works Agency Is A Good Place To Work.**

There were two questions in the employee questionnaire regarding the organizational culture and morale within the Public Works Agency. These two questions and the responses are presented in the table below. The number on top is the raw data and the bottom number represents the percentage.

Question	Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree
7. My work with the Agency gives me a feeling of personal accomplishment.	22 5%	43 9.7%	90 20.4%	187 42.3%	100 22.6%
17. I am proud to work for the Agency.	15 3.5%	13 3%	65 15%	173 40%	167 38.5%

Important points to note regarding these responses are presented below.

- 65% of the respondents agreed the statement in question #7 “My work in my division gives me a feeling of personal accomplishment.” 20% of the respondents neither agreed nor disagreed with the statement, while 15% of the respondents disagreed with the statement.
- 79% of the respondents agreed the statement in question #1 “I feel proud to work for the Agency.” 15% of the respondents neither agreed nor disagreed with the statement, while 7% of the respondents disagreed with the statement.

Most respondents believe that the Public Works Agency is a good place to work.

**(5) Most Employees Were Satisfied With The Level Of Teamwork In The Work Unit And Are Most Concerned About The Fair Division Of Labor Among Their Co-Workers And Relationships With Other Divisions.**

There were two questions in the employee satisfaction questionnaire regarding employee-involvement in decision-making within the Public Works Agency. These three questions and the responses are presented in the table below. The number on top is the raw data and the bottom number represents the percentage.

<b>Question</b>	<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Neither Agree or Disagree</b>	<b>Agree</b>	<b>Strongly Agree</b>
23. The employees in my work unit help each other out when someone falls behind or gets in a tight spot.	21 4.9%	37 8.6%	62 14.4%	209 48.6%	101 23.5%
35. Workload is evenly balanced among the employees in my work unit.	86 20.2%	80 18.8%	78 18.3%	143 33.6%	39 9.1%
39. The working relationships between the different work units in the Agency are generally good.	25 5.8%	48 11.2%	104 24.2%	217 50.6%	35 8.2%

Important points to note regarding these responses are presented below.

- 72% of the respondents agreed the statement in question #23 that “The employees in my division work to help each other out when someone falls behind or gets in a tight spot.” 13% of the respondents disagreed with the statement, while 14% of the respondents neither agreed nor disagreed with the statement.

- 43% of the respondents agreed with the statement in question #35 that “The workload is evenly balanced among the employees in my work unit.” 39% of the respondents disagreed with the statement, while 18% of the respondents neither agreed nor disagreed with the statement.
- 59% of the respondents agreed the statement in question #39 “The working relationships between the different work units in the Agency are generally good.” 17% of the respondents disagreed with the statement, while 24% of the respondents neither agreed nor disagreed with the statement.

Overall, most respondents believed that there was good teamwork in their units, although they were concerned that work was not always evenly divided throughout the team. While most indicated that working relationships across divisions were good, some rated them poorly.

**(6) Most Employees Were Satisfied With The Level Of Authority They Had Within Their Division And Were Most Concerned With Their Participation In Agency Decision-Making.**

There were two questions in the employee questionnaire regarding the decision-making in the Public Works Agency. These two questions and the responses are presented in the table below. The number on top is the raw data and the bottom number represents the percentage.

<b>Question</b>	<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Neither Agree or Disagree</b>	<b>Agree</b>	<b>Strongly Agree</b>
15. I am satisfied with my participation in Agency decisions.	41 9.4%	80 18.3%	129 29.4%	146 33.3%	42 9.6%
43. I have the authority I need in my work unit to do my job efficiently.	28 6.5%	40 9.3%	74 17.1%	210 48.6%	80 18.5%

Important points to note regarding these responses are presented below.

- 43% of the respondents agreed the statement in question #15 that “I am satisfied with my participation in Agency decisions.” 28% of the respondents disagreed with the statement, while 29% neither agreed nor disagreed with the statement.
- 67% of the respondents agreed the statement in question #43 that “I have the authority I need in my work unit to do my job efficiently.” 16% of the respondents

disagreed with the statement, while 17% neither agreed nor disagreed with the statement.

While most respondents were satisfied with their levels of authority in their work units, they were most concerned with their participation in Agency decision-making. Less than half were satisfied with their participation at the Agency level.

**(7) While Employees Were Satisfied With Management Within Their Own Division, They Had Concerns About The Overall Leadership And Direction Of The Agency.**

There were ten questions in the employee questionnaire regarding the leadership and management of the Public Works Agency. These ten questions and the responses are presented in the table below. The number on top is the raw data and the bottom number represents the percentage.

Question	Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree
1. I receive recognition from my immediate supervisor when I do a good job.	41 9.1%	61 13.6%	59 13.2%	195 43.4%	93 20.7%
4. My immediate supervisor is accessible when I need him / her.	7 1.6%	36 8.3%	48 11%	220 50.6%	124 28.5%
9. My immediate supervisor is open and honest with me.	36 8.1%	50 11.3%	71 16%	173 39.1%	113 25.5%
14. Management of the Agency takes action on employee ideas to improve the operation of the Agency.	45 10.7%	90 21.4%	126 30%	125 29.8%	34 8.1%
16. The management of the Agency takes a genuine interest in the employees of the Agency.	51 12.2%	76 18.1%	132 31.5%	122 29.1%	38 9.1%
20. Management of the Agency encourages reporting important information up-the-chain-of-command, even if it is bad news.	25 5.6%	53 11.9%	110 24.7%	188 42.3%	69 15.5%
25. Management of the Agency provides a clear picture for me of where the Agency is headed.	54 12.6%	92 21.5%	133 31.1%	122 28.5%	27 6.3%
26. I am kept well informed of what is happening in the Agency.	63 14.2%	109 24.6%	116 26.2%	121 27.3%	34 7.7%
29. My work unit has clear, well-	21	55	89	210	59

<b>Question</b>	<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Neither Agree or Disagree</b>	<b>Agree</b>	<b>Strongly Agree</b>
written policies and procedures to guide my day-to-day work.	4.8%	12.7%	20.5%	48.4%	13.6%
42. I am adequately recognized and appreciated for my work efforts by my immediate supervisor.	53 12.2%	55 12.6%	80 18.3%	174 39.9%	74 17%

Important points to note regarding these responses are presented below.

- 64% of respondents agreed with the statement in question #1 that “I receive recognition from my immediate supervisor when I do a good job.” 23% disagreed with the statement, while 13% neither agreed nor disagreed.
- 79% of respondents agreed with the statement in question #4 that “My immediate supervisor is accessible when I need him/her.” 10% disagreed with the statement, while 11% neither agreed nor disagreed.
- 65% of respondents agreed with the statement in question #9 that “My immediate supervisor is open and honest with me.” 19% of respondents disagreed, while 16% neither agreed nor disagreed.
- 38% of respondents agreed with the statement in question #14 that “Management of the Agency takes action on employee ideas to improve the operation of the Agency.” 30% disagreed with the statement, while 31% neither agreed nor disagreed.
- 38% of respondents agreed with the statement in question #16 that “The management of the Agency takes a genuine interest in the employees of the Agency.” 34% disagreed with the statement, while 31% neither agreed nor disagreed.
- 58% of the respondents agreed with the statement in question #20 “Management of the Agency encourages reporting important information up-the-chain of command, even if it is bad news.” 17% of the respondents disagreed with the statement while 25% neither agreed nor disagreed with the statement.
- 35% of respondents agreed with the statement in question #25 that “Management of the Agency provides a clear picture for me of where the Agency is headed.” 34% of employees disagreed with the statement, while 31% neither agreed nor disagreed.
- 39% of respondents disagreed with the statement in question #26 that “I am kept well informed of what is happening in the Agency.” 35% agreed with the statement, while 26% neither agreed nor disagreed.

- 62% of the respondents agreed with the statement in question #29 that “My division has clear, well-written procedures to guide my day-to-day work.” 17% of the respondents disagreed with the statement, while 21% of the respondents neither agreed nor disagreed with the statement.
- 57% of respondents agreed with the statement in question #42 “I am adequately recognized and appreciated by my immediate supervisor for my contributions in my division.” 25% of the respondents disagreed with the statement, while 18% of the respondents neither agreed nor disagreed with the statement.

Most employees are satisfied with the management within their divisions and the supervision they receive from their immediate supervisors. In general, the Agency promotes reporting information up the chain-of-command; however, employees have concerns about the leadership of the Agency as a whole, for they do not have a clear sense of where the Agency is headed and did not indicate that the interests of employees were valued by leadership.

**(8) While Employees Were Generally Satisfied With Their Division’s Customer Service And Performance, They Were Concerned About Appropriate Staffing Levels, Management Of Workflow And Organizational Efficiency.**

There were fifteen questions in the employee questionnaire regarding the management of the performance of the Public Works Agency. These fifteen questions and the responses are presented in the table below. The number on top is the raw data and the bottom number represents the percentage.

Question	Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree
3. Employees in my work unit are willing to confront and solve problems (rather than sweep them under the rug).	20 4.5%	54 12%	73 16.2%	213 47.3%	90 20%
6. My work unit has effective decision-making processes (no undue delays).	22 5.1%	82 18.9%	89 20.6%	185 42.7%	55 12.7%
8. In my work unit, the work is well organized (such as smooth work flow, etc.).	31 7.2%	76 17.8%	81 18.9%	179 41.8%	61 14.3%

**CITY OF OAKLAND, CALIFORNIA**  
**Performance Audit of the Public Works Agency**

<b>Question</b>	<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Neither Agree or Disagree</b>	<b>Agree</b>	<b>Strongly Agree</b>
10. I understand what is expected of me in my job in my work unit.	6 1.4%	15 3.5%	31 7.2%	188 43.8%	189 44.1%
12. I am encouraged to be innovative on my job in my work unit such as trying new ways of doing things.	21 4.9%	61 14.1%	92 21.4%	164 38%	93 21.6%
18. A high level of performance is expected of employees of the Agency.	26 6.1%	28 6.6%	67 15.7%	206 48.2%	100 23.4%
24. We have enough employees in my work unit to handle the workload.	138 31.2%	119 26.9%	75 16.9%	83 18.7%	28 6.3%
27. I am encouraged to use my own initiative and judgment when carrying out my job in my work unit.	14 3.3%	32 7.5%	61 14.2%	209 48.8%	112 26.2%
28. I have a clear understanding of the mission and goals of the Agency.	19 4.3%	42 9.4%	110 24.7%	193 43.4%	81 18.2%
30. Customer service is a top priority in my work unit.	6 1.4%	11 2.5%	52 11.9%	190 43.6%	177 40.6%
31. My work unit operates efficiently.	24 5.7%	43 10.1%	85 20.1%	193 45.5%	79 18.6%
32. My work unit has the clerical and secretarial support it needs to accomplish its goals and objectives efficiently and effectively.	46 10.4%	85 19.3%	130 29.5%	130 29.5%	50 11.3%
33. My work unit is frequently in a crisis mode due to workload that exceeds staff resources.	32 7.3%	81 18.6%	126 28.9%	135 31%	62 14.2%
34. My work unit provides a high level of service to the residents of Oakland.	12 2.7%	17 3.8%	52 11.7%	196 43.9%	169 37.9%
38. The employees in my work unit are dedicated to meeting customer expectations.	14 3.2%	27 6.1%	83 18.8%	232 52.6%	85 19.3%

Important points to note regarding these responses are presented below.

- 67% of the respondents agreed with the statement in question #3 that “Employees in my division are willing to confront and solve problems (rather than sweeping them under the rug).” 17% of the respondents disagreed with the statement, while 16% of the respondents neither agreed nor disagreed with the statement.
- 55% of the respondents agreed with the statement in question #6 that “My work unit has effective decision making processes (e.g., no undue delays in



making decisions).” 24% of the respondents disagreed with the statement, while 21% of the respondents neither agreed nor disagreed with the statement.

- 56% of the respondents agreed with the statement in question #8 that “In my division, the work is well organized (e.g., smooth work flow, etc).” 25% of the respondents disagreed with the statement, while 19% of the respondents neither agreed nor disagreed with the statement.
- 88% of the respondents agreed with the statement in question #10 “I understand what is expected of me in my job in my division.” 5% of the respondents disagreed with the statement, while 7% of the respondents neither agreed nor disagreed with the statement.
- 60% of the respondents agreed with the statement in question #12 “I am encouraged to be innovative on my job (trying new ways of doing things) in my division.” 19% of the respondents disagreed with the statement, while 21% of the respondents neither agreed nor disagreed with the statement.
- 72% of the respondents agreed with the statement in question #18 that “a high level of performance is expected of employees in my division.” 13% of the respondents disagreed with the statement. 16% neither agreed nor disagreed.
- 58% of respondents disagreed with the statement in question #24 that “We have enough employees in my work unit to handle the workload.” 25% agreed with the statement, while 17% neither agreed nor disagreed.
- 75% of respondents agreed with the statement in question #27 that “I am encouraged to use my own initiative and judgment when carrying out my job in my work unit.” 11% disagreed with the statement, while 14% neither agreed nor disagreed.
- 61% of respondents agreed with the statement in question #28 that “I have a clear understanding of the mission and goals of the Agency.” 14% disagreed with the statement, while 25% agreed with the statement.
- 84% of respondents agreed with the statement in question #30 that “Customer service is a top priority in my work unit.” 4% disagreed, while 12% neither agreed nor disagreed with the statement.
- 64% of respondents agreed with the statement in question #31 that “My work unit operates efficiently.” 16% disagreed with the statement, while 20% neither agreed nor disagreed.
- 53% of the respondents agreed with the statement in question #6 “The organization of my division is well suited to its responsibilities.” 20% of the

respondents disagreed with the statement, while 27% of the respondents neither agreed nor disagreed with the statement.

- 41% of respondents agreed with the statement in question #32 that “My work unit has the clerical and secretarial support it needs to accomplish its goals and objectives efficiently and effectively. 30% disagreed, while 29% neither agreed nor disagreed with the statement.
- 45% of respondents agreed with the statement in question #33 that “My work unit is frequently in a crisis mode due to workload that exceeds staff resources.” 26% disagreed, while 29% neither agreed nor disagreed with the statement.
- 82% of respondents agreed with the statement in question #34 that “My work unit provides a high level of service to the residents of Oakland.” 6% disagreed, while 12% neither agreed nor disagreed with the statement
- 72% of respondents agreed with the statement in question #38 that “The employees in my work unit are dedicated to meeting customer expectations.” 9% disagreed with the statement, while 19% neither agreed nor disagreed.

Overall, employees are satisfied with the performance, problem-solving and service provided to City residents by their divisions; however, respondents expressed concerns regarding the level of staffing in relationship to their workload, the number of support staff available in their units, overall management of workflow, and organizational efficiency. Almost half of respondents indicated that their division was frequently in a crisis mode.

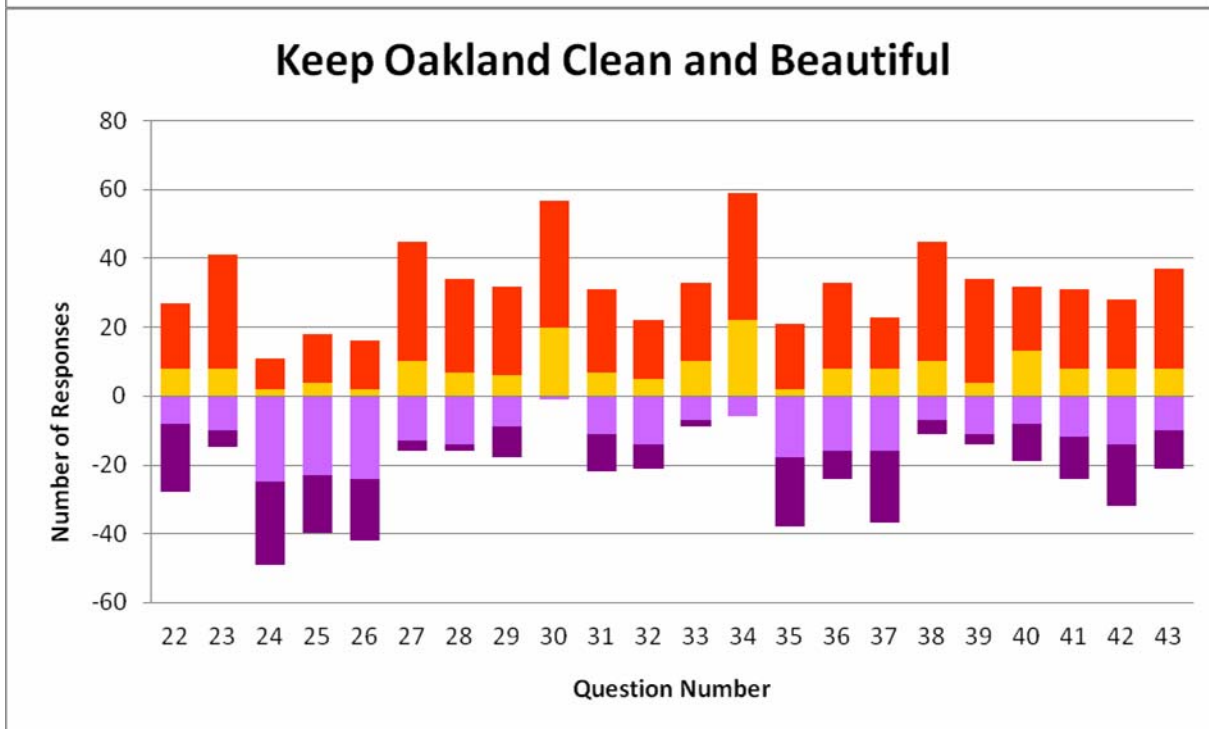
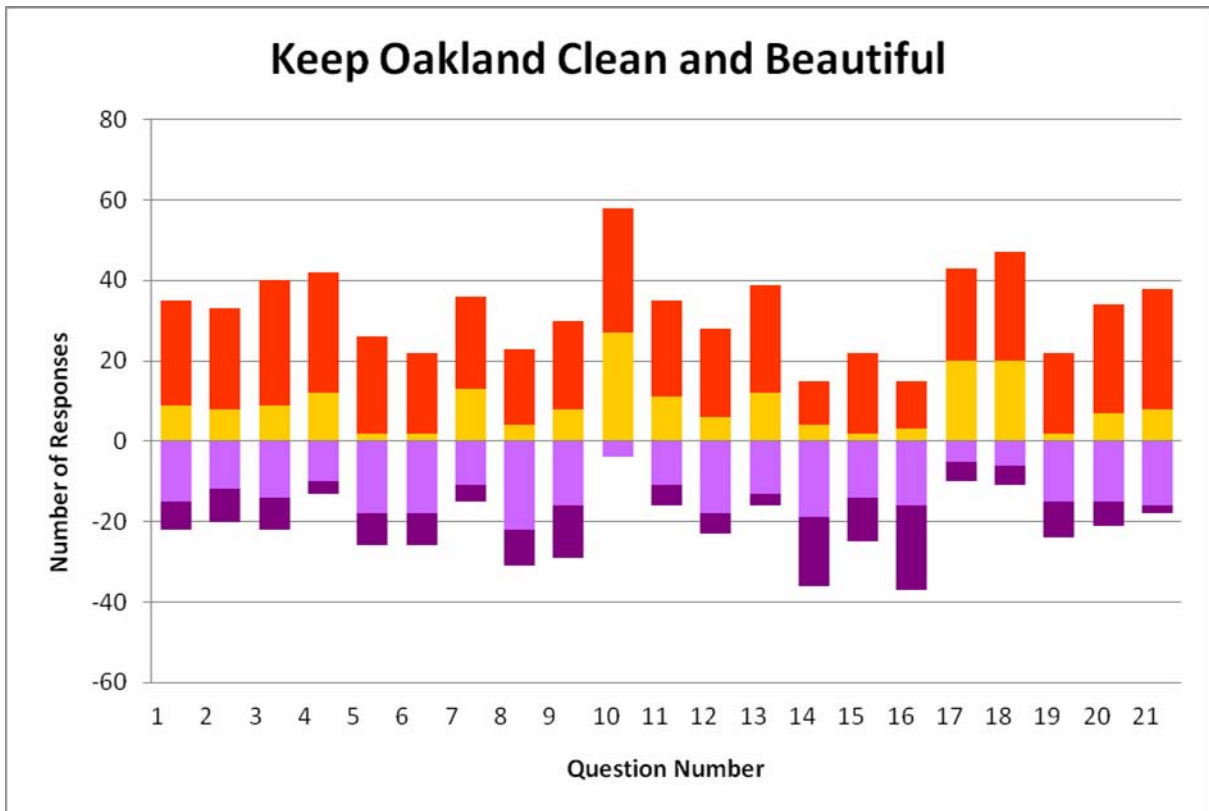
**(9) While Results By Division Generally Did Not Vary Significantly From The Agency-Wide Results Reported Above, There Were A Few Areas With Notable Differences.**

While most results by division generally mirrored the overall results, there were some notable areas of divergence. Employees from the Administration and Environmental Services Divisions viewed the Agency as a whole more favorably in most areas, while employees from the Keep Oakland Clean and Beautiful Division viewed the Agency more negatively in most areas. Infrastructure Maintenance Division employees were

concerned about the condition of tools, equipment and vehicles. Notable differences by topic area and division are reported below:

- Administration and Environmental Services divisions rated most areas more highly than what is reflected in the Agency-wide results, with more than 50% of employees agreeing on most items addressing safety, career development, teamwork, work environment, decision-making, leadership and performance.
- The Keep Oakland Clean and Beautiful division rated most areas less favorably than what is reflected in the Agency-wide results, with fewer than 50% agreeing with over 65% (28) of the items in the questionnaire. Employees expressed greater areas of concern in every topic area, except for teamwork. They were especially concerned with leadership and management of the Agency.
- The Infrastructure Maintenance Division employees were concerned about the condition of Agency tools, equipment and vehicles, with 45% disagreeing with the statement in question #37 that “I have the tools and equipment I need to efficiently perform my job.” 32% agreed and 16% neither agreed nor disagreed with the statement.

The table below outlines the positive and negative responses from the Keep Oakland Clean and Beautiful Division.



The chart below summarizes the overall distribution of responses to statements to which employees were asked to select a response. It should be noted that the chart does not include responses were the employees selected “no response” or did not make a selection.

	Sales
Strongly Agree	16%
Agree	44%
Disagree	24%
Strongly Disagree	16%

To resize chart data range, drag lower right corner of range.

16% Strongly Agree

In the Keep Oakland Clean and Beautiful Division, disagree/strongly disagree responses comprised 40% of results, whereas agree/strongly agree responses comprised approximately 60% of results.