

**Management and Performance Audit
of the Public Works Department
CITY OF SAN LUIS OBISPO, CALIFORNIA**

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1. INTRODUCTION AND EXECUTIVE SUMMARY

The report, which follows, presents the results of the management and performance audit of the Public Works Department conducted by the Matrix Consulting Group.

This first chapter introduces the analysis – outlining principal objectives and how the analysis was conducted – and presents an Executive Summary.

1. AUDIT SCOPE AND OBJECTIVES.

The project team conducted a comprehensive organization and management analysis of the Department's existing operations, service levels, infrastructure management, and staffing levels. The analysis was to be fact based and include all aspects of service provision by the Department. The analysis focused on:

- Core services: Identifying the core and high priority services performed by Public Works to establish the framework for future structure and operations.
- Organizational and management structure from top to bottom: Reporting relationships, spans of control, staff authority, staffing levels (including vacant positions), age distribution.
- Outsourcing and insourcing opportunities: Identifying key opportunities by function, other City or private organization comparisons.
- Operations: Process efficiency, resource deficiency or redundancy, new equipment or technology opportunities.
- Information technology: Leveraging technology for operational improvements.
- Best management practices and performance measures: Identification of performance management tools and professional organizations, benchmarking against accepted standards and identifying current levels of service.
- Trend analysis: Identifying the most likely trends (positive and negative) that the Department will face in the future.
- Community relations and customer service: Internal and external customers,

service request program efficiencies, response time evaluation, opportunities for changes in service delivery, cost reductions, improvements, metrics of customer satisfaction.

- Exploring other issues that are discovered. If during the course of interviews an issue is identified that involves another department, initiating discussions to fully understand it.
- Recommendations for change: Prioritized recommendations, cost/savings associated with each recommendation, a suggested timeline, and an implementation plan.

The approach that the Matrix Consulting Group utilized in meeting this scope is portrayed below.

- Develop an understanding of the key issues impacting the Public Works Department. The Matrix Consulting Group conducted interviews with Public Works Department staff at all levels of the Department. Interviews focused on goals and objectives, management systems, the use of technology, the levels of service provided by the Department, the resources available to provide those services, etc.
- Develop a profile of the Public Works Department. The Matrix Consulting Group conducted interviews with Departmental staff and other key staff in the City to document the current organization of services, the structure and functions of the Department, budgets, workload data, management systems, inventory of the infrastructure, etc.
- Conduct a comparison of the Public Works Department program and practices to 'best management practices.' The best management practices included comparisons to the American Public Works Association's, *Public Works Management Practices Manual*, and the experience of the Matrix Consulting Group. The project team also conducted a comparative survey of services in other cities to compare the Public Works Department's programs and practices to these other cities.
- Evaluate the staffing, organization structure, and service levels in the Public Works Department. This included interviews with key staff to develop an understanding of the current service delivery model, evaluation of the adequacy of current service levels, work practices, work planning and scheduling systems, productivity and staffing levels, the plan of organization, and asset management.

The objective of this assessment was to identify opportunities for improvement in the operational and economic efficiency of the Department and practical opportunities for enhancing the quality of its product and services.

2. THE PUBLIC WORKS DEPARTMENT EMPLOYS A NUMBER OF BEST PRACTICES.

An organizational and management analysis by its nature focuses on opportunities for improvement. However, there are a number of strengths in the Public Works Department. Examples of these strengths are portrayed below.

- The Public Works Department will be installing the EnerGov Asset Management Suite in 2011 that will automate the management of infrastructure assets, inventory control, purchasing, maintenance, work orders, inspections and condition investigations.
- The City has been a Tree City USA recipient for twenty-eight (28) years and has been awarded two (2) International Society of Arboriculture Gold Leaf Awards.
- An inspection by the Matrix Consulting Group of four (4) City parks found the parks to be in good condition, overall, given the absence of funding for minor capital outlay. Some aspects of the parks were not in good condition, but this reflects the absence of funding for minor capital outlay.
- Street preventive maintenance is on an eight-year zone-based maintenance program in which all street-related maintenance services are performed i.e., pavement, curb and gutter, sidewalks, regulatory signs, etc.
- The City uses seal coats to preserve streets, and applies these seal coats, on the average, every eight years.
- The pavement condition index of the City's streets is 74 (out of 100).
- The City uses the American Public Works Association MicroPaver database for its pavement management system.
- The bulbs used in the streetlight fixtures are high-pressure sodium. These bulbs are energy efficient.
- Fleet Services consistently meets manufacturer recommendations for preventive maintenance and turnaround time for completing repairs and maintenance is good.

- The City has begun the preparation of a five-year capital improvement program budget.
- Engineers and construction inspectors that are assigned to capital projects charge the actual time worked to those projects using a project accounting system.
- The parking meter collections process is designed as a “touchless” system that restricts collectors from access to the collections.
- The City has implemented e-ticketing systems for parking citations, which includes a handheld device.
- A traffic impact fee has been adopted based upon a Transportation Master Plan.
- The Transit Division has prepared a two-year financial plan.
- The Transit Division provides transit data in a number of creative applications including viewing transit data via Facebook, e-mail messages, Twitter, etc.

These strengths provide a sound basis for further enhancements.

4. SIX-POINT AGENDA FOR CHANGE

The assessment of the Public Works Department identified 300 recommendations for improvement that the Matrix Consulting Group believes should provide the basis for change in the Public Works Department in the coming years.

These recommendations fall into six (6) major improvement areas including:

- Accountability;
- Asset management;
- Maintenance management;
- Administrative and management structure;
- Preventive maintenance of the infrastructure;
- Cost effective service delivery.

Each of these major points in the improvement agenda are briefly summarized below.

(1) Accountability

The driving force behind any high performing organization is clear direction and the accountability systems that communicate and translate that direction into action. The Public Works Department has made initial efforts to provide that direction and the management systems such as the planned deployment of EnerGov. Overall, however, many of the managers and supervisors in the Department have little information that is easily and readily accessible with which make key service delivery and budgetary decisions. The Public Works Department 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 infrastructure. The department is limited in its ability to address these challenges as a result of the lack of management systems. The management of the Public Works Department needs to enhance the management systems within the Department through such tools as:

- Development of a strategic plan to provide direction for the Department over the next three to five years;
- Development of goals, objectives, and performance measures beyond those included in the City's budget;
- The development of formal work planning and scheduling systems;
- The development of more comprehensive capital project management systems;
- The reduction of plan check cycle time objectives for Engineering Development Review;
- The development of additional and enhanced service level agreements with internal customers of the services delivered by the Department i.e., Utilities, Police, Fire, Parks and Recreation, etc.; and

- Development of reporting systems within EnerGov to report actual versus planned performance as defined in the objectives and performance measures for the Department.

The Public Works Department should employ these management systems to make the Department a place where its performance is centered around performance measures and data generated by EnerGov to drive its operations.

(2) Asset Management

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

- The infrastructure is aging, and much of it exceeds its life span.
- 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 Public Works Department should improve its asset management practices. These improvements include such measures as:

- Development of an asset management policy;
- Clarification of accountability among departmental managers and supervisors regarding responsibility for management of each class of assets i.e., streets, facilities, fleet, parks, urban forest, etc.;
- Completion of an asset inventory for all of the assets entrusted to the Department;

- Conducting periodic asset condition assessments;
- Development of five-year plans for the renewal and rehabilitation of parks, facilities, and traffic signals.

The City has faced significant financial constraints over the past six fiscal years, and continues to face these constraints. The consulting team is concerned that appropriate levels of funding are not being provided for the renewal and rehabilitation of the parks, facilities, and traffic signals assets, and that reductions in funding have been made in the past several years that impede the sustainability of these assets.

(3) Maintenance Management

Today there is significant interest in efficient and effective maintenance management systems. This interest stems from increasing costs of materials, and the increasing scarcity of revenues. How public works departments are combatting this situation is by making more effective and efficient use of existing resources. One of the most successful techniques involves applying maintenance management concepts – a systematic approach to getting more work done with the dollars available.

Indeed, the last American Public Works Association International Public Works Congress and Exposition in August 2010, there were two presentations regarding local governments that had successfully deployed maintenance management systems. Effective deployment of these systems is not a matter of size: smaller organizations than the San Luis Obispo Public Works Department have successfully deployed maintenance management systems.

The Public Works Department will be deploying EnerGov in 2011. This information system is the foundation of an effective maintenance management system.

However, much work remains to be done, even after the system goes live. The work that remains to be done including such actions as the following:

- Development of a complete inventory of the work activities performed by the Public Works Department in the maintenance of the City's infrastructure;
- Definition of the levels of service to be provided in maintaining assets i.e., how often should streets be swept, drain inlets cleaned, signalized intersections preventively maintained, etc.;
- Performance standards for each work activity to define the best way to accomplish each activity in terms of the optimum crew size and equipment complement, the major materials needed and the preferred procedure for doing the work, and the expected amount of work to be accomplished each day;
- An annual work program and calendar needs to be developed to define annual workloads (i.e., amount of traffic signal cabinets that will be preventively maintained) by work activity;

The deployment of the EnerGov Asset Management Suite is an essential step in enhancing the ability of the Public Works Department to manage the maintenance and repair of City assets, but much work remains to be done to effectively utilize that investment in EnerGov to manage the maintenance and repair of City assets.

(4) Administrative and Management Structure

The Matrix Consulting Group evaluated the plan or organization of the Public Works Department from a number of vantage points including resource utilization, communication and coordination, agility and flexibility, human capital, and clarity of accountability.

There is an opportunity to enhance the structure of the department. The major changes in the plan of organization include the elimination of a supervisory position in the Urban Forestry Division, the reallocation of the responsibility for the maintenance and repair of the Fire Department's fleet from the Fire Department to the Public Works

Department, the assignment of the responsibility for the management of the maintenance and repair of all City facilities to the Public Works Department, and, in the long-term, the consolidation of the Fleet Services Division and the Facilities Maintenance Division under one division head and upgrading of existing positions in the two divisions to act as lead workers. The purpose of this proposed streamlining of the administrative and management organization is to reduce the administrative overhead given the spans of control in the divisions.

In fiscal year 2011-12, the consulting team recommends that the City evaluate the consolidation of the Public Works Department and the Utilities Department. The consulting team believes that a number of advantages will accrue to the City by consolidating these two departments including the facilitation of cooperation among different programs and work groups, concentration of core competencies i.e., asset management, enhanced accountability, improved ability to coordinate the totality of the City's CIP, the emphasis of the "unity of command" principal, and the broadening of management and supervisory spans of control, the opportunity for significant administrative cost / overhead reduction, the opportunity for sharing of scarce or specialized resources, the improved ability to re-allocate resources to meet shifting workload demands, and the standardization of common administrative practices.

(5) Preventive Maintenance of the Infrastructure

San Luis Obispo taxpayers have a significant investment in streets, sidewalks, traffic signals, signs, stormwater collection systems, urban forest, facilities, etc. Preserving these assets prolongs their useful life and reduces the long-term

maintenance and rehabilitation costs. This is the primary objective of preventive maintenance.

The Public Works Department is not preventively maintaining each of the asset types on a routine ongoing basis. The Public Works Department needs to pursue a coordinated and comprehensive effort to ensure the efficient and effective preventive maintenance of those assets assigned to the department. This includes such efforts as:

- A comprehensive preventive maintenance program for the City's facilities including a heating, ventilating, and air condition preventive maintenance program, roof preventive maintenance program, an electrical component replacement program, and a plumbing component replacement program; and
- The restoration of a preventive maintenance program for the City's signalized intersections and the signal controllers.

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 Public Works Department – one that is utilized to judge the effectiveness of the Department's management.

(6) Cost Effective Service Delivery

The Public Works Department faces a number of challenges including fiscal limitations and decaying infrastructure. The effective response of the Department to these challenges requires that the Department 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.

A number of services that are currently delivered by the Public Works Department should be opened up for managed competition from the private sector. These initially include park maintenance and street maintenance. The consulting team does not believe that it is clear that outsourcing park maintenance has reduced operating costs for the City; that is why the consulting team is recommending managed competition.

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

- Reducing the crew size used for tree trimming from three-persons to two persons;
- Reducing the size of the City's fleet to eliminate underutilized vehicles; and
- Temporarily reallocating the Senior Civil Engineer, in part, from the Engineering Development Review Division to the Capital Projects Design Division given the significant reduction in development-related workload, and assigning the Senior Civil Engineer capital projects.

At the same time, the consulting team is recommending an increase of one position in the Department: a Building Maintenance Technician. The addition of this position is important to enable the City to preventively maintain the City's facilities.

The Public Works Department should take steps to assure that it fully recovers its costs for services it delivers on behalf of the enterprise funds and should fund the provision of street sweeping services through solid waste fees.

5. SUMMARY OF RECOMMENDATIONS

The Matrix Consulting Group has prepared this summary of the recommendations contained in the attached report. This summary is presented in the table following this page. A second table, presented after the summary of the recommendations, includes those recommendations with a cost impact. These recommendations are, in some instances, duplicates of recommendations presented in the first table – the summary of recommendations, but this format was requested by the Public Works Department.

Recommendation #1: The Public Works Director should review the proposed plan of implementation and the summary of recommendations contained in this report, modify the plan of implementation as appropriate, and submit the revised plan of implementation to the Office of the City Manager.

SUMMARY OF RECOMMENDATIONS

No.	Recommendation	Time Frame for Implementation	Responsibility
Chapter 1 – Introduction and Executive Summary			
1.	The Public Works Director should review the proposed plan of implementation and the summary of recommendations contained in this report, modify the plan of implementation as appropriate, and submit the revised plan of implementation to the Office of the City Manager	4 th Quarter 2010-11	Public Works Director
Chapter 2 – Asset Management			
2.	The Public Works Department should develop an asset management policy and procedure for the consideration of the Mayor and City Council.	1 st Quarter 2011-12	Public Works Director
3.	In the development of an asset management policy and procedure, the Department should clarify accountability for the management of each of the assets under its stewardship. Responsibility should be assigned to the Department's first-line supervisors, and these first-line supervisors should be held accountable for managing each specific type of asset assigned to the Department.	1 st Quarter 2011-12	Public Works Director
4.	The Department should establish an asset management council to facilitate a coordinated asset management approach.	2 nd Quarter 2011-12	Public Works Director
5.	The Capital Projects Design Division should assist the Department's first-line supervisors in fulfilling their responsibilities as asset managers. This should include the provision of training to these first-line supervisors in asset management.	1 ^{2nd} Quarter 2011-12	Supervising Civil Engineer
6.	The Public Works Director should assign staff, as appropriate, the responsibility for working with the supervisors of the Urban Forestry, Street Maintenance, Park Maintenance, and Facilities Maintenance Divisions to document the inventory data available working with these first-line supervisors to make the data available for entry into the EnerGov Asset Management Suite, and for developing plans for the collection of inventory data that is not readily available.	2 nd Quarter 2011-12	Public Works Director
7.	The Public Works Department should work with the Finance Department to ensure that the current replacement value utilized for those assets entrusted to the Public Works Department are accurate and reflect the "modified" accounting approach.	3 rd Quarter 2011-12	Public Works Director
8.	The Department should conduct periodic asset condition assessments of the assets under its stewardship.	4 th Quarter 2011-12	Public Works Director
9.	The Transportation Operations Division should prepare a five-year traffic signal asset preservation plan that includes replacement of mast arm assemblies, junction boxes, concrete foundations that the controller cabinet and signal posts are set on, or the underground conduit, and signal controllers. This plan should be updated annually. This plan should be integrated into the City's	2 nd Quarter 2011-12	Transportation Operations Manager

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No.	Recommendation	Time Frame for Implementation	Responsibility
	capital improvement program.		
10.	The Park Maintenance Division should develop a five-year asset preservation plan for the renewal and rehabilitation of the City's parks. This plan should be updated annually. This plan should be integrated into the City's capital improvement program.	2 nd Quarter 2011-12	Park Supervisor
11.	The Facility Maintenance Division should develop a five-year asset preservation plan for the renewal and rehabilitation of the City's buildings. This plan should be updated annually. This plan should be integrated into the City's capital improvement program.	2 nd Quarter 2011-12	Facility Maintenance Supervisor
Chapter 3 – Maintenance Management			
12.	The Public Works Director should assign staff, as appropriate, to work with the first-line supervisors of the Urban Forestry, Street Maintenance, Park Maintenance, and Facilities Maintenance Divisions to define the work activities performed by their Divisions including the activity, the activity description, and the unit of measure.	1 st quarter 2011-12	Public Works Director
13.	The Public Works Director should assign staff, as appropriate, to work with the first-line supervisors of the Urban Forestry, Street Maintenance, Park Maintenance, and Facilities Maintenance Divisions to define the service level standards for the work activities performed by the Department.	1 st quarter 2011-12	Public Works Director
14.	The Public Works Director should assign staff, as appropriate, to work with the first-line supervisors of the Urban Forestry, Street Maintenance, Park Maintenance, and Facilities Maintenance Divisions to develop performance standards for the work activities performed by the Department.	1 st quarter 2011-12	Public Works Director
15.	The Public Works Director should assign staff, as appropriate, to work with the first-line supervisors of the Urban Forestry, Street Maintenance, Park Maintenance, and Facilities Maintenance Divisions and with the Information Technology Division to develop an annual work program for each Division, and to develop reporting systems to report budget to actual.	1 st quarter 2011-12	Public Works Director
16.	The Public Works Director should assign staff, as appropriate, to work with the first-line supervisors of the Urban Forestry, Street Maintenance, Park Maintenance, and Facilities Maintenance Divisions and with the Information Technology Division to develop and deploy formal work planning and scheduling systems in the Urban Forestry, Street Maintenance, Park Maintenance, and Facilities Maintenance Divisions using the EnerGov Asset Management Suite.	1 st quarter 2011-12	Public Works Director
17.	The Public Works Director should assign staff, as appropriate, to work with the first-line supervisors of the Urban Forestry, Street Maintenance, Park Maintenance, and Facilities Maintenance Divisions and with the Information Technology Division to develop and deploy a monthly performance report comparing planned versus actual performance and costs. This monthly report should	1 st quarter 2011-12	Public Works Director

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No.	Recommendation	Time Frame for Implementation	Responsibility
	be developed using the EnerGov Asset Management Suite.		
18.	The Public Works Director should assign staff, as appropriate, to consult with the first-line supervisors of the Urban Forestry, Street Maintenance, Park Maintenance, and Facilities Maintenance Divisions and with the Information Technology Division to develop a budget proposal for fiscal year 2011-12 to acquire and deploy handheld data entry devices.	1 st quarter 2011-12	Public Works Director
19.	The Public Works Director should assign staff, as appropriate, to consult with the first-line supervisors of the Urban Forestry, Street Maintenance, Park Maintenance, and Facilities Maintenance Divisions and the GIS Supervisor to develop a formal written policy and procedure for the crews of these Divisions to update asset inventories.	1 st quarter 2011-12	Public Works Director
20.	The Public Works Maintenance Supervisor position in the Urban Forestry Division should be eliminated through attrition. The vehicle assigned to this Public Works Maintenance Supervisor should be eliminated at the same time as this position.	1 st quarter 2011-12	Public Works Director
21.	The Arborist / Urban Forester should be assigned responsibility for the supervision of the City's Urban Forestry Division. The compensation of the position should be adjusted to reflect these new responsibilities.	1 st quarter 2011-12	Public Works Director
22.	The Urban Forestry Division should utilize a 2-person crew for tree trimming on residential streets. On arterial streets, a 3-person crew should be utilized if additional traffic control is utilized. This crew should work on clearing obstructions to traffic devices, streetlights, responding to service requests and low-limb work, and block-by-block tree trimming.	1 st quarter 2011-12	Public Works Director
23.	The two temporary tree maintenance worker positions should be converted to one (1) full-time Tree Trimmer 1 position.	1 st quarter 2011-12	Public Works Director
24.	The Public Works Department should contract for block-by-block tree trimming and park tree trimming of 900 to 1,000 trees annually to supplement the work of its own Tree Trimmers.	1 st quarter 2011-12	Public Works Director
25.	The talents and skills of the two (2) Tree Trimmers should be more effectively managed for block-by-block trimming of street and park trees.	1 st quarter 2011-12	Deputy Director / City Engineer
26.	This tree trimming crew should typically set aside two workdays a week for responding to service requests. The other two or three workdays should be set aside for block-by-block trimming of street and park trees (except for emergency service requests).	1 st quarter 2011-12	Deputy Director / City Engineer
27.	A one-person crew should be utilized to trim street and park trees that are 10 feet in height or less <u>and</u> have a diameter at breast height of 6 inches or less. These are trees that should be able to be trimmed from the ground using hand tools. These trees should be trimmed once every three years.	1 st quarter 2011-12	Deputy Director / City Engineer

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No.	Recommendation	Time Frame for Implementation	Responsibility
28.	The Arborist / Urban Forester should establish daily work output expectations for block-by-block tree trimming for mature trees with a 2-person crew, tree trimming of young trees with a 1-person crew, and for the 2-person crew responding to service requests.	1 st quarter 2011-12	Deputy Director / City Engineer
29.	The Arborist / Urban Forester should develop a tree planting plan to replace stumps, dead trees, and trees in poor condition as identified in the inventory of street and park trees.	2 nd quarter 2011-12	Arborist / Urban Forester
30.	The funding required for the implementation of the tree planting plan should be developed as part of the fiscal year 2012-13 recommended budget by the Public Works Department.	2nd quarter 2011-12	Deputy Director / City Engineer
31.	The Arborist / Urban Forester should include an element to the tree planting plan that would gradually address the City's potential exposure with Eucalyptus, Ash, Liquidambar, and Coast Live Oak species.	1 st Quarter 2011-12	Arborist / Urban Forester
32.	The Urban Forestry Division should develop and install a formal work planning and scheduling system.	1 st Quarter 2011-12	Arborist / Urban Forester
33.	The Arborist / Urban Forester should develop a website for the Urban Forestry Division on the Public Works Department's website.	3 rd Quarter 2011-12	Arborist / Urban Forester
34.	The Arborist / Urban Forester should develop and implement a public relations and public information program focused on regularly informing and educating city residents about the benefits and value of the urban forest.	4 th Quarter 2011-12	Arborist / Urban Forester
35.	The Arborist / Urban Forester should work with the Deputy Public Works Director to establish a tree foundation for San Luis Obispo that would be a non-profit 501 c (3) organization dedicated to growing healthy urban forest in San Luis Obispo.	1st Quarter 2012-13	Arborist / Urban Forester
36.	The service levels proposed for mature tree care, hazard tree abatement, young tree care, new tree planting, and tree removal and replacement in this report should be adopted by the Public Works Department after their review by the Tree Committee and the City Council.	1st Quarter 2012-13	Arborist / Urban Forester
37.	The Urban Forestry Division should use EnerGov to monitor its compliance with these levels of service.	1st Quarter 2012-13	Arborist / Urban Forester
38.	The City should maintain responsibility for maintenance of street trees using its own staff or its contractors.	1 st quarter 2011-12	Deputy Director / City Engineer
39.	The Public Works Department should not acquire a stump grinder. The Department should continue to outsource this service.	1 st quarter 2011-12	Deputy Director / City Engineer
Chapter 5 – Park and Landscape Maintenance			
40.	The span of control for the Park Maintenance Supervisor meets metrics, and the plan of organization for the Park Maintenance Division should not be modified.	1 st quarter 2011-12	Deputy Director / City Engineer
41.	The responsibility for the management of park and landscape maintenance contracts should be assigned to the Park and Landscape Maintenance Division	1 st quarter 2011-12	Deputy Director / City Engineer
42.	The Park Maintenance Supervisor should be held accountable for the quality of maintenance for all of the City's park and landscaped facilities regardless of whether	1 st quarter 2011-12	Deputy Director / City Engineer

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No.	Recommendation	Time Frame for Implementation	Responsibility
	these facilities are maintained by staff of the Park and Landscape Maintenance Division or by contractors.		
43.	The Public Works Department should utilize managed competition to determine whether it should continue to outsource park and landscape maintenance or should insource these services.	3 rd quarter 2011-12	Deputy Director / City Engineer
44.	The number of authorized staff in the Park and Landscape Maintenance Division should not be increased pending completion of a managed competition.	1 st quarter 2011-12	Deputy Director / City Engineer
45.	The City and the County explore intergovernmental contracts or cooperation in the maintenance of their park systems with the County and with the School District.	3 rd quarter 2011-12	Deputy Director / City Engineer
46.	The City should continue the responsibility for maintenance of the City's parks and landscaped areas using its own staff.	1 st quarter 2011-12	Deputy Director / City Engineer
47.	The Park Maintenance Division should work with the Parks and Recreation Department to formalize its volunteer program into an adopt-a-park program.	4 th quarter 2011-12	Deputy Director / City Engineer
48.	The Public Works Department should develop a policy for the consideration of the City Council regarding acceptance of sound walls, frontages, and medians that defines the circumstances under which the City will accept such facilities and the circumstances, and those circumstances in which a homeowners association should be responsible for these facilities.	1 st quarter 2011-12	Deputy Director / City Engineer
49.	The Public Works Department should meet with relevant homeowner associations to negotiate the reassignment of responsibility for the maintenance of sound walls, frontages, and medians that largely serve subdivisions.	3 rd quarter 2011-12	Deputy Director / City Engineer
50.	The Public Works Department should enhance the processes and tools used to manage the contracts for maintenance of parks and landscape facilities and cleaning of restrooms.	3 rd quarter 2011-12	Deputy Director / City Engineer
51.	The Public Works Director should direct staff, as appropriate, should develop a formal written procedure for managing park, landscape, and restroom maintenance in consultation with the Parks Supervisor and the Deputy Director / City Engineer.	1 st quarter 2011-12	Deputy Director / City Engineer
52.	The Parks Supervisor should develop a comprehensive inventory of parks and facilities.	1 st quarter 2011-12	Deputy Director / City Engineer
53.	The Park Maintenance Supervisor should document the information in the ArcGIS Shapefiles regarding parks and landscape facilities so that this data can be input into EnerGov, and utilized to program maintenance of these facilities.	1 st quarter 2011-12	Deputy Director / City Engineer
54.	The Park Maintenance Supervisor should develop formal service level standards appropriate for each of the parks maintained by the staff of the Parks and Landscape Division. These service level standards should be provided to the staff of the Division.	1 st quarter 2011-12	Deputy Director / City Engineer
55.	The Park Maintenance Supervisor should develop quality standards for the maintenance of the City's park system.	1 st quarter 2011-12	Deputy Director / City Engineer
56.	The Parks Supervisor should develop an annual calendar	1 st quarter 2011-	Deputy Director

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No.	Recommendation	Time Frame for Implementation	Responsibility
	for park maintenance activities.	12	/ City Engineer
57.	The Park Maintenance Supervisor should develop a bi-weekly schedule that relies on route sheets and work orders.	1 st quarter 2011-12	Deputy Director / City Engineer
58.	Route sheets, or route-based work orders, should be utilized for the routine work that is performed each week in multiple locations in the maintenance of parks and landscaped areas using a single work order issued by EnerGov.	1 st quarter 2011-12	Deputy Director / City Engineer
59.	Work orders should be issued using EnerGov for that work that is not routinely performed each week such as aerifying turf, fertilizing turf, trimming trees in parks, etc.	1 st quarter 2011-12	Deputy Director / City Engineer
60.	The Parks Supervisor should conduct park condition assessments every six months and issue work orders to correct problems identified during his condition assessment of parks.	1 st quarter 2011-12	Deputy Director / City Engineer
61.	The Park Maintenance Supervisor should develop a prioritized five-year minor capital outlay plan for parks and landscape facilities.	1 st quarter 2011-12	Deputy Director / City Engineer
62.	The Public Works Director should direct the preparation of a City Manager Report for the consideration of the Public Works Director, Finance Director, and City Manager regarding how funding sources and other resources available for park maintenance, rehabilitation, and development could be expanded. Upon consideration, these alternatives should be presented to the City Council for its deliberation.	1 st quarter 2011-12	Deputy Director / City Engineer
63.	The Public Works Department should acquire additional equipment to reduce staff hours required for the maintenance of sports fields.	1 st quarter 2012-13	Deputy Director / City Engineer
64.	The Park Maintenance Supervisor should further evaluate opportunities to reduce the use of irrigated water, and develop a written proposal for the consideration of the Public Works Director and the Office of the City Manager that identifies the costs and benefits of reducing the use of irrigated water replace regions of existing sod with native grasses or plants, and enhanced maintenance practices.	2 nd quarter 2011-12	Parks Supervisor
65.	The Parks Supervisor should develop a policy for the consideration of the Public Works Director, the Office of the City Manager, and the City Council that would establish a differential level of service for those sound walls frontages, and medians whose maintenance cost is funded via a landscape and lighting district versus those that are not.	3rd quarter 2011-12	Parks Supervisor
66.	The Parks Supervisor should develop a status report for the consideration of the Public Works Director regarding the status of the implementation of each of the recommendations in the report developed by the <i>International Sports Turf</i> Consulting regarding the maintenance of sports fields at Damon Garcia. For those recommendations with an operating or capital expense associated with the recommendation, the Park Maintenance Supervisor should develop a budget request	2 nd quarter 2011-12	Parks Supervisor

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No.	Recommendation	Time Frame for Implementation	Responsibility
	for fiscal year 2011-12.		
67.	The Parks Supervisor should report the status regarding the extent to which the tasks defined in the annual maintenance calendar in the report developed by the <i>International Sports Turf Consulting</i> are being consistently accomplished.	2 nd quarter 2011-12	Parks Supervisor
68.	The Park Maintenance Division and the Utilities Department work together to develop specific measures to address the use of recycled wastewater and its impact on plants in parks. This should include the consideration of odium blocker and the replacement of plant materials. The costs associated with sodium blocker and the replacement of plant materials should be the burden of the Utilities Department.	3rd quarter 2011-12	Parks Supervisor
69.	The Park Maintenance Division and the Parks and Recreation Department should work together to develop a service level agreement for the services provided by the Division on behalf of the Department.	2 nd quarter 2011-12	Parks Supervisor
Chapter 6 – Fleet Services			
70.	The plan of organization for the Fleet Maintenance Division should not be modified in the short-term.	1 st quarter 2011-12	Public Works Director
71.	In the short-term, the Fire Department should focus on its mission and, initially, outsource maintenance of light-duty and support vehicles to the Fleet Services Division.	2nd quarter 2011-12	Office of the City Manager
72.	In the long-term, the Office of the City Manager should work with the Public Works Department and the Fire Department to transition the responsibility for fire apparatus maintenance to the Fleet Services Division including transferring the Fire Vehicle Mechanic position.	2nd quarter 2011-12	Office of the City Manager
73.	When the Fire Vehicle Mechanic position becomes vacant, the position should be reclassified as Heavy Equipment Mechanic.	Unknown	Office of the City Manager
74.	The Public Works Department should maintain the existing level of staffing for the Fleet Services Division at three (3) Heavy Equipment Mechanics.	1 st quarter 2011-12	Public Works Director
75.	Routine maintenance and repair of the City's fleet should continue to be performed by the three (3) Heavy Equipment Mechanics. Work that requires specialized expertise or equipment such as engine or transmission overhauls should continue to be outsourced.	1 st quarter 2011-12	Public Works Director
76.	The Public Works Department should explore alternative service delivery, particularly insourcing of fleet maintenance and repairs for other public sector agencies.	3rd quarter 2011-12	Fleet Services Supervisor
77.	The Public Works Director should direct staff to develop a fleet policy that clearly sets forth the City's fleet size management policy and procedure for the consideration of the Public Works Director and the City Manager.	1 st quarter 2011-12	Public Works Director
78.	The fleet policy should include criteria for the purchase and assignment of sport utility vehicles.	1 st quarter 2011-12	Public Works Director
79.	The fleet size policy and procedure should include other aspects that encourage the use of fuel-efficient vehicles.	1 st quarter 2011-12	Public Works Director
80.	The Office of the City Manager should lead a collective effort of Departmental Management, the Finance and	3rd quarter 2011-12	Office of the City Manager

No.	Recommendation	Time Frame for Implementation	Responsibility
	Information Services Department, and the Fleet Services Division in a reduction of the number and size of equipment in the City's fleet.		
81.	The Office of the City Manager, the Finance and Information Services Director, and the Public Works Director should work with departmental management to reduce the City's fleet by 10% (excluding the Fire Department).	3rd quarter 2011-12	Office of the City Manager
82.	The Office of the City Manager, the Finance and Information Services Director, and the Public Works Director should work with departmental management to evaluate the extent of heavy equipment in the City's fleet, determine which heavy equipment should be eliminated from the fleet and the "pool", what equipment should be rented instead when needed, and agree on which equipment should continue to be "pooled" in a heavy equipment "pool."	3rd quarter 2011-12	Office of the City Manager
83.	The Fleet Services Supervisor should initiate training and develop training plans to enable the Heavy Equipment Mechanics to obtain EVT and ASE certification.	3rd quarter 2011-12	Fleet Services Supervisor
84.	The Fleet Services Supervisor should work with the Human Resources Department to modify the Heavy Equipment Mechanic classification to require ASE certification (or obtaining the certification within two years of appointment).	3rd quarter 2011-12	Fleet Services Supervisor
85.	The Public Works Director should work with the Human Resources Department to evaluate the costs and benefits of financial incentives for EVT and ASE certification.	1 st quarter 2011-12	Public Works Director
86.	The Fleet Services Supervisor should set an objective of an average of 125 working hours charged to work orders per month per Heavy Equipment Mechanic (this excludes leave).		
87.	The Fleet Supervisor should review the monthly direct-billed hours report to ensure accountability for all Heavy Equipment Mechanics, and report actual adherence to this objective to executive management of the Public Works Department on a monthly basis.	1st quarter 2011-12	Fleet Services Supervisor
88.	The Fleet Supervisor should use the fleet management information system to develop time guidelines for completing repair and maintenance of equipment.	4th quarter 2011-12	Fleet Services Supervisor
89.	The Fleet Supervisor should develop formal written priorities for repair and maintenance of equipment and adopt these priorities in a formal written policy and procedure.	1st quarter 2011-12	Fleet Services Supervisor
90.	The Fleet Supervisor should develop and install a more formal work planning and scheduling system using the fleet management information system.	1st quarter 2011-12	Fleet Services Supervisor
91.	The Fleet Services Division should provide information to their customers on a monthly basis regarding the costs for equipment maintenance, repair, and utilization.	1st quarter 2011-12	Fleet Services Supervisor
92.	The Fleet Services Division should develop and adopt service level agreements with its customers.	1st quarter 2011-12	Fleet Services Supervisor
93.	The Fleet Services Division should develop an alternative	2nd quarter	Fleet Services

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No.	Recommendation	Time Frame for Implementation	Responsibility
	fuel policy for consideration of the City Manager.	2011-12	Supervisor
94.	The Fleet Services Division should be established as an internal service fund.	1st quarter 2012-13	Public Works Director
95.	The responsibility for processing Fleet Services Division invoices and attaching them to work orders in the Square Rigger fleet management information system should be assigned to the Administrative Assistant III or the Public Works Temporary Worker at the corporation yard.	1 st quarter 2011-12	Public Works Director
96.	The Public Works Department should acquire an additional Square Rigger license for the Administrative Assistant III or the Public Works Temporary Worker at the corporation yard.	1st quarter 2011-12	Fleet Services Supervisor
97.	The organizational units located at the corporation yard should make arrangements for the unloading of these supplies and materials at the corporation yard, possibly including the requirement that the vendor unload these supplies and materials.	1 st quarter 2011-12	Public Works Director
Chapter 7 – Facilities Maintenance			
98.	The plan of organization for the Facilities Maintenance Division should not be modified in the short-term.	1 st quarter 2011-12	Public Works Director
99.	The responsibility for the maintenance and repair of the Parks, Golf, Bus Yard, and Water Treatment Administrative facilities should be assigned to the Facilities Maintenance Division.	1 st quarter 2012-13	Public Works Director
100.	The departments or divisions that currently maintain their own buildings – Parks Maintenance, Transit, Utilities, and Golf - have budgeted funds to maintain their buildings. These funds should be transferred to the Facilities Maintenance Division.	1 st quarter 2012-13	Public Works Director
101.	The cost allocation plan should be revised so that funding is allocated to the Facility Maintenance Division so that it can properly maintain these buildings. This will impact only those facilities utilized by enterprise funds. That includes the facilities used by Golf, Transit and the Utilities Department.	1 st quarter 2012-13	Public Works Director
102.	The Building Maintenance Technician assigned to swimming pool maintenance should be assigned responsibility for the maintenance and repair of additional buildings beyond the facilities at Sinsheimer Park.	1 st quarter 2011-12	Public Works Director
103.	The Facility Maintenance Supervisor should assign work orders to the Building Maintenance Technician assigned to swimming pool maintenance for the maintenance and repair of facilities beyond those facilities at the swimming pool.	1 st quarter 2011-12	Public Works Director
104.	The City should authorize an additional Building Maintenance Technician position for the Facilities Maintenance Division.	1 st quarter 2012-13	Public Works Director
105.	The Public Works Department should cancel the contract for maintenance and repair of the heating, ventilating, or air conditioning equipment should be eliminated when the recommended Building Maintenance Technician position is filled.	1 st quarter 2012-13	Public Works Director
106.	The Facility Maintenance Division should not change the	1 st quarter 2012-	Public Works

No.	Recommendation	Time Frame for Implementation	Responsibility
	existing balance of contractors and in-house staff with the exception of preventive maintenance of its heating, ventilating, and air conditioning components.	13	Director
107.	The Public Works Department should explore facility maintenance and repair intergovernmental contracts with the County, with the School District, or the Federal Government.	3rd quarter 2012-13	Public Works Director
108.	The Facilities Maintenance Division should conduct formal condition assessments every three to five years of primary City facilities and use these assessments to develop a written, five-year plan for building component replacement.	3rd quarter 2012-13	Facilities Maintenance Supervisor
109.	The City should allocate approximately 1.5% to 3% of current replacement value of City buildings (excluding the value of land) to building component replacement on an annual basis.	3rd quarter 2012-13	Public Works Director
110.	The City should allocate approximately 1% to 2% annually to ongoing facilities maintenance and repair including major maintenance.	3rd quarter 2012-13	Public Works Director
111.	The Facilities Maintenance Division should develop a five-year capital replacement plan for minor capital outlay.	3rd quarter 2011-12	Facilities Maintenance Supervisor
112.	The City should develop funding plans to address deferred capital replacement requirements for City buildings.	3rd quarter 2011-12	Public Works Director
113.	The Facilities Maintenance Division should enhance the preventive maintenance program for City buildings by establishing an electrical component preventive maintenance program, expanding the plumbing preventive maintenance program, and expanding the preventive maintenance of the heating, ventilating, and air conditioning systems.	1 st quarter 2012-13	Facilities Maintenance Supervisor
114.	The Facilities Maintenance Division should develop recommendations for the consideration of the Public Works Director to establish a Predictive Testing and Inspection program.	1 st quarter 2012-13	Facilities Maintenance Supervisor
115.	The Predictive Testing and Inspection program should only include, initially, the use of infrared thermography.	1 st quarter 2012-13	Facilities Maintenance Supervisor
116.	As the Facilities Maintenance Division gains experience with infrared thermography, it should expand the use Predictive Testing and Inspection to include lubricant and wear particle analysis and vibration monitoring and analysis.	1 st quarter 2013-14	Facilities Maintenance Supervisor
117.	The Facilities Maintenance Supervisor should develop, install, and assure the utilization of a work planning and scheduling system by the supervisors of the Facilities Maintenance Division.	1 st quarter 2011-12	Facilities Maintenance Supervisor
118.	The Facilities Maintenance Supervisor should set an objective of an average of 125 working hours charged to work orders per month per Heavy Equipment Mechanic (this excludes leave).	1 st quarter 2011-12	Facilities Maintenance Supervisor
119.	The Facilities Maintenance Supervisor should review the monthly direct-billed hours report to ensure accountability	2 nd quarter 2011-12	Facilities Maintenance

No.	Recommendation	Time Frame for Implementation	Responsibility
	for all Heavy Equipment Mechanics, and report actual adherence to this objective to executive management of the Public Works Department on a monthly basis.		Supervisor
120.	The Public Works Director should direct staff, as appropriate, to develop and present a financial policy and procedure to the Public Works Director, Finance and Information Services Director, and City Manager that would establish the Facility Maintenance Division as an Internal Service Fund.	1 st quarter 2012-13	Public Works Director
121.	The Facility Maintenance Division should be established as an Internal Service Fund.	1 st quarter 2012-13	Facilities Maintenance Supervisor
122.	The Facilities Maintenance Supervisor should assure that formal energy audits are conducted for all of the City's primary buildings.	2nd nd quarter 2012-13	Facilities Maintenance Supervisor
123.	The Facilities Maintenance Division should develop and install a methodology for prioritizing work orders, and report the response time by priority (as well as by type of work order, department, building, etc.).	1 st quarter 2011-12	Facilities Maintenance Supervisor
124.	The Facilities Maintenance Supervisor should develop new service level agreements with the Facilities Maintenance Divisions major customers such as the Utilities Department and Parks and Recreation Department, etc., and enhance the existing service level agreements with the Police Department and Fire Department.	3rd quarter 2011-12	Facilities Maintenance Supervisor
125.	The costs incurred by the Facilities Maintenance Division in the maintenance and repair of parking structures should be included in the cost allocation plan.	1 st quarter 2011-12	Finance Director
Chapter 8 – Street Maintenance			
126.	The plan of organization for the Street Maintenance Division should not be modified.	1 st quarter 2012-13	Public Works Director
127.	The Public Works Department should maintain the existing number of staff for signal and street lighting maintenance: two (2) Signal and Street Lighting Technicians.	1 st quarter 2012-13	Public Works Director
128.	The City should maintain the current level of staffing for street sweeping at one (1) Heavy Equipment Operator.	1 st quarter 2012-13	Public Works Director
129.	The Public Works Director should direct staff, as appropriate, to resolve the significant discrepancy between the curb miles reported swept in the Department's performance indicators and the curb miles reported as swept by the Street Maintenance Division.	1 st quarter 2012-13	Public Works Director
130.	The Heavy Equipment Operator should complete a work order for the street sweeping activities that he performed that reports the work hours spent sweeping, the curb miles swept, and the tons of material collected. This reporting should begin immediately, and not wait for the deployment of EnerGov.	1 st quarter 2011-12	Streets Supervisor
131.	The work output indicator for the concrete crew should be changed to square feet of concrete from linear feet.	1 st quarter 2011-12	Streets Supervisor
132.	The Street Maintenance Division should capture work output for each asphalt maintenance work activity in its	1 st quarter 2011-12	Streets Supervisor

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No.	Recommendation	Time Frame for Implementation	Responsibility
	summary work output reports.		
133.	The work activity – new paving – should be segregated into multiple work activities i.e., skin patch, micro-surfacing and full-depth reconstruction.	1 st quarter 2011-12	Streets Supervisor
134.	The Public Works Department should utilize managed competition to determine whether it should outsource street maintenance services or continue to insource these services.	3rd Quarter 2011-12	Public Works Director
135.	The Public Works Department should explore street maintenance and repair intergovernmental contracts with the County and with the School District.	1 st quarter 2011-12	Streets Supervisor
136.	The annual operating costs of street sweeping, including depreciation, should be funded through solid waste fees.	1st Quarter 2011-12	Public Works Director
137.	The Street Maintenance Supervisor should develop a replacement plan for the consideration of the Public Works Director that is based upon the inventory of signal cabinets and proposes a five-year replacement plan for signal controllers.	3rd Quarter 2011-12	Streets Supervisor
138.	Traffic signal controllers should be replaced at approximately fifteen (15) year intervals.	3rd Quarter 2011-12	Streets Supervisor
139.	The Street Maintenance Division should restore a comprehensive preventive maintenance program for signalized intersections upon filling of the second Signal and Street Lighting Technician.	1st Quarter 2011-12	Streets Supervisor
140.	The Street Maintenance Division and the Traffic Engineering Division should continue to collaborate in the development of a sign inspection program to enable implementation of the requirements of the Manual on Uniform Traffic Control Devices.141.	1st Quarter 2011-12	Streets Supervisor
141.	Based upon the results of the sign inspection program, the Street Maintenance Division should develop a proactive program to replace signs that do not meet retroreflectivity minimum requirements.	2nd Quarter 2011-12	Streets Supervisor
142.	The Street Maintenance Supervisor should develop and install a formal work planning and scheduling system using the EnerGov Asset Management Suite.	3rd Quarter 2011-12	Streets Supervisor
Chapter 9 – Engineering Services			
143.	The plan of organization for Engineering Services should not be modified.	1st Quarter 2011-12	Public Works Director
144.	The Supervising Civil Engineer and the Engineering Construction Manager should each assume responsibility for the project management or the construction management of projects equivalent to one-half of their available work hours.	1st Quarter 2011-12	Deputy Director / City Engineer
145.	The balance of projects designed by consulting engineers versus the staff of the Capital Projects Design Division should be modified. The staff of the Division should design a greater proportion of the projects. The ratio – in terms of construction cost – should more closely approximate 55% consulting engineers and 45% the staff of the Division – in terms of construction cost - <u>based upon the 2009-11 capital improvement program.</u>	1st Quarter 2011-12	Deputy Director / City Engineer
146.	The balance of projects inspected by consulting engineers	1st Quarter	Deputy Director

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No.	Recommendation	Time Frame for Implementation	Responsibility
	versus the staff of the Construction Management Division should be modified. The Division should outsource more of its construction inspection and management workload to consulting engineers <u>based upon the 2009-11 capital improvement program.</u>	2011-12	/ City Engineer
147.	The Engineering Inspector I assigned to inspection of encroachment permits should allocate 55% of his available work hours for the inspection of capital improvement projects, and 45% to the inspection of encroachment permits.	1st Quarter 2011-12	Deputy Director / City Engineer
148.	The Capital Project Design Division should develop a capital improvement project procedures manual.	3rd Quarter 2011-12	Supervising Civil Engineer
149.	The Capital Project Design Division should develop an on-line capital improvement project management guide i.e., the guide should be published to the Division's Intranet).	4th Quarter 2011-12	Supervising Civil Engineer
150.	The Supervising Civil Engineer should provide training of Engineering Services management, engineering, technical, construction and support personnel to strengthen their project management skills in delivering the City's design and construction programs on schedule, within budget and within scope.	1st Quarter 2012-13	Supervising Civil Engineer
151.	The project management training should be required of the professional and paraprofessional staff in Engineering Services.	1st Quarter 2012-13	Supervising Civil Engineer
152.	The Public Works Director should direct staff, as appropriate, to develop a formal written policy and procedure that clarifies responsibility for managing all of the engineering aspects of the delivery of the City's capital projects from "cradle to grave" as being assigned to the Capital Projects Design Division.	1st Quarter 2011-12	Public Works Director
153.	The Public Works Director should direct staff, as appropriate, to develop a formal written policy and procedure that clarifies responsibility for managing all of the engineering aspects of the delivery of the City's capital projects from "cradle to grave" as being assigned to the Capital Projects Design Division. The City similarly should adopt this policy and procedure.	1st Quarter 2011-12	Public Works Director
154.	The Capital Projects Design Division should be assigned responsibility for managing the design of the capital projects including preparation of project scoping plans, critical path method schedules, staffing plans for the design and construction management of the projects, monitoring the performance of consulting engineers, processing the payment requests of consulting engineers, etc. so that the design occurs within the budget and schedule defined within the project scoping plan.	1st Quarter 2011-12	Public Works Director
155.	The Capital Projects Design Division should prepare a project plan before the commencement of the design of a capital project.	1st Quarter 2011-12	Supervising Civil Engineer
156.	The project engineer in the Capital Projects Design Division assigned to the design of a project should complete a ~~de~~ preliminary design for each significant and complicated capital improvement project when the design	1st Quarter 2011-12	Supervising Civil Engineer

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No.	Recommendation	Time Frame for Implementation	Responsibility
	is no more than 10% to 20% complete. The preliminary design should be reviewed with the Project Owner.		
157.	The Capital Projects Design Division and the Construction Management Division should utilize cost of construction guidelines to determine the staffing requirements for each capital improvement program project in terms of person hours required for design and construction inspection.	1st Quarter 2011-12	Deputy Director / City Engineer
158.	"Billability" targets should be established for staff of the Capital Projects Design Division and the Construction Management Division.	1st Quarter 2011-12	Deputy Director / City Engineer
159.	The project accounting system should be utilized to monitor the performance of the staff of the Capital Projects Design Division and the Construction Management Division against these targets.	1st Quarter 2011-12	Deputy Director / City Engineer
160.	The Capital Projects Design Division should prepare a bi-monthly capital improvement program project status report i.e., every two months.	2 nd Quarter 2011-12	Deputy Director / City Engineer
161.	The monthly capital improvement program project status report should be updated and posted to the Public Works Department web site each month.	2 nd Quarter 2011-12	Deputy Director / City Engineer
162.	The Supervising Civil Engineer / Capital Projects Design and the Engineering Construction Manager / Construction Management should prepare a resource loaded project schedule for all of the capital projects that will be designed and inspected during that fiscal year.	2nd Quarter 2011-12	Deputy Director / City Engineer
163.	The City should use force account construction for capital projects smaller than \$25,000.	2nd Quarter 2011-12	Deputy Director / City Engineer
164.	The Capital Projects Design Division should use different and simpler approaches for the design of small capital projects.	3rd Quarter 2011-12	Deputy Director / City Engineer
165.	The Capital Projects Design Division should utilize pre-qualified contractors for the small capital projects based upon task orders issued by the Division.	3rd Quarter 2011-12	Deputy Director / City Engineer
166.	When engineering design and construction inspection / management is provided by the Capital Projects Design Division or the Construction Management Division, the costs of design and construction inspection / management should be based upon actual costs as reflected in the project accounting system, and not the cost allocation plan.	3rd Quarter 2011-12	Deputy Director / City Engineer
167.	A City Manager Report should not be required to be required for fund transfers. These fund transfers should be approved by the Finance Department based upon simplified fund transfer documents, and not a City Manager Report.	1st Quarter 2011-12	Deputy Director / City Engineer
168.	The review of the draft design of capital projects should not be sequential: it should be concurrent.	1st Quarter 2011-12	Supervising Civil Engineer
169.	The City should delegate limited change order authority to the Public Works Director.	3rd Quarter 2011-12	Office of the City Manager
170.	The change order process should be based upon a threshold: the Supervising Civil Engineer of Capital projects Design should be able to approve construction change orders below a certain dollar or % threshold. Once	3rd Quarter 2011-12	Public Works Director

No.	Recommendation	Time Frame for Implementation	Responsibility
	the construction change order reaches a certain dollar or % threshold, it should require the approval of the Deputy Director / City Engineer. The Public Works Director should approve construction change orders once it exceeds another and higher dollar or % threshold		
171.	The Public Works Department should not be able to approve any change orders in excess of the contingency. Those change orders should require the approval of the City Council.	3rd Quarter 2011-12	Office of the City Manager
172.	The Public Works Director should direct staff, as appropriate, to formalize this delegated authority in a policy and procedure adopted by the Public Works Department.	3rd Quarter 2011-12	Public Works Director
173.	The Capital Projects Design Division should routinely and consistently conduct 30% / 60% / 90% design plan and specification reviews with Construction Management and the capital project owner.	1st Quarter 2011-12	Supervising Civil Engineer
174.	The Public Works Director should direct staff, as appropriate, to develop a policy and procedure for the conduct of the 30% / 60% / 90% design plan and specification reviews with Construction Management and the capital project owner.	1st Quarter 2011-12	Public Works Director
175.	The Capital Projects Division should work with the Planning Division to specifically identify the capital projects contained in area plans or specific plans, the funding required for these projects, the source of funding, and develop capital project budget requests for the area plans. The Public Works Department should review these requests and the possible projects with the City Council in a goal setting session for the five-year capital improvement program.	3rd Quarter 2011-12	Supervising Civil Engineer
176.	The Capital Project Design Division should develop and adopt a service level agreement with the Utilities Department regarding the delivery of capital project design and construction inspection / management services.	2nd Quarter 2011-12	Supervising Civil Engineer
Chapter 10 – Engineering Development Review Division			
177.	The plan of organization for the Engineering Development Review Division should not be modified.	1st Quarter 2011-12	Public Works Director
178.	The Supervising Civil Engineer should continue to be assigned responsibility for providing actual development review services (i.e., plan checking of permits, developing correction lists, developing conditions of approval, etc.) in support of staff.	1st Quarter 2011-12	Supervising Civil Engineer
179.	Eliminate the two (2) temporary positions (0.8 full-time equivalent positions).	1st Quarter 2011-12	Public Works Director
180.	Assign the Supervising Civil Engineer a greater proportion of development-related workload.	1st Quarter 2011-12	Deputy Director
181.	Assign the Senior Civil Engineer on a part-time basis to the Capital Projects Design Division.	1st Quarter 2011-12	Deputy Director
182.	The temporary Permit Technician position should be filled permanently, but as an Engineering Technician, and assigned additional development-related workload.	1st Quarter 2011-12	Deputy Director
183.	The Supervising Civil Engineer for the Engineering	1st Quarter	Supervising

No.	Recommendation	Time Frame for Implementation	Responsibility
	Development Review Division should evaluate the workload faced by the Division on a continual basis, and, if the workload exceeds the capacity of the Division, the Supervising Civil Engineer should outsource the plan checking to consulting engineers.	2011-12	Civil Engineer
184.	The Engineering Development Review Division should issue a Request for Proposals for consulting engineering development review services to enable outsourcing of plan review when the workload exceeds the capacity of the Division.	1st Quarter 2011-12	Deputy Director
185.	The Planning Division should work with the Public Works Department to revise the criteria for the routing of land use permits to the Engineering Development Review Division to eliminate those types of permits that would not benefit from a plan check by the Engineering Development Review Division.	1st Quarter 2011-12	Community Development Director
186.	The Planning Division should work with the Engineering Development Review Division to develop standard conditions for those minor land use permits not routed to the Division, and rely on the use and application of these standard conditions.	1st Quarter 2011-12	Community Development Director
187.	The Building and Safety Division should work with the Public Works Department to develop criteria for the routing of land use permits to the Engineering Development Review Division to eliminate those types of permits that would not benefit from a plan check by the Engineering Development Review Division.	1st Quarter 2011-12	Community Development Director
188.	The Building and Safety Division should work with the Division to develop standard conditions for those minor building permits not routed to the Engineering Development Division, and rely on the use and application of these standard conditions.	1st Quarter 2011-12	Community Development Director
189.	The responsibility for plan checking of on-site drainage and grading should continue to be plan checked in the Engineering Development Review Division until such time as the Building and Safety Division employs a licensed engineer for plan checking. At that time, a workload assessment should be conducted to evaluate whether the Division is capable of assuming this workload, and eliminate the "handoff" of site / grading plans to the Engineering Development Review Division.	1st Quarter 2011-12	Deputy Director
190.	The Engineering Development Review Division should enhance its existing and develop additional application guides for each of its engineering permits including grading permits, parcel maps, tract maps, public improvement plans, etc.	2 nd Quarter 2011-12	Supervising Civil Engineer
191.	The Engineering Development Review Division should publish the enhanced and additional engineering permit application guides to its web site.	2 nd Quarter 2011-12	Supervising Civil Engineer
192.	The Engineering Development Review Division, in plan checking land use permits, should focus on the engineering standards, and not provide comments relevant to other division's codes and standards i.e.,	1 st Quarter 2011-12	Deputy Director

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No.	Recommendation	Time Frame for Implementation	Responsibility
	building code, uniform fire code, etc.		
193.	The plan check cycle objectives for the Engineering Development Review Division for final and parcel maps, improvement plans, lot line agreements should be reduced to twenty (20) workdays for first plan check; second and subsequent plan checks should be half that amount or ten (10) workdays.	1 st Quarter 2011-12	Supervising Civil Engineer
194.	The plan check cycle time for grading permits should be ten (10) workdays for the first plan check; second and subsequent plan checks should be half that amount or five (5) workdays. The plan check cycle time for private utility permits should be five (5) workdays for the first plan check, and half that amount for second and subsequent plan checks should be half that amount or three (3) workdays. The cycle time for traffic impact study plan checks should be ten (10) workdays for the first plan check; second and subsequent plan checks should be half that amount or five (5) workdays.	1 st Quarter 2011-12	Supervising Civil Engineer
195.	These cycle time objectives should be published to the Division's website and identified in the Division's application guides.	1 st Quarter 2011-12	Supervising Civil Engineer
196.	The actual cycle time by type of permit should be published to the Division's web site on a quarterly basis.	2 nd Quarter 2011-12	Supervising Civil Engineer
197.	The Supervising Civil Engineer in the Engineering Development Review Division should be held accountable for the management of the amount of workdays required by the Division for plan checking and for monitoring performance against the cycle time objectives on a regular basis.	2 nd Quarter 2011-12	Supervising Civil Engineer
198.	The Supervising Civil Engineer should plan, schedule, and manage the processing of permit applications by the Engineering Development Review Division using the EnerGov Land Management Suite.	3rd Quarter 2011-12	Supervising Civil Engineer
199.	The Supervising Civil Engineer should be held accountable for the ongoing maintenance of this open case inventory and the completion of the processing of permits by their staff in accordance with the cycle time objectives.	3rd Quarter 2011-12	Supervising Civil Engineer
200.	The staff of the Engineering Development Review Division should meet with the applicant for engineering permits to discuss issues that have been found during the first or subsequent plan checks for large, complex or potentially controversial applications.	2 nd Quarter 2011-12	Supervising Civil Engineer
201.	The Engineering Development Review Division should provide training to consulting engineers and developers regarding its engineering permit submittal requirements.	2nd Quarter 2011-12	Supervising Civil Engineer
202.	The Engineering Development Review Division should provide feedback and assistance after each submittal when consulting engineers are involved in the development of the application and when they encountered particular problems meeting submittal requirements.	1st Quarter 2011-12	Supervising Civil Engineer
203.	The Engineering Development Review Division should	4rth Quarter	Supervising

No.	Recommendation	Time Frame for Implementation	Responsibility
	publish to its web site a list of the most common corrections encountered during the plan checking of engineering permits.	2011-12	Civil Engineer
204.	The Engineering Development Review Division should publish on a regular basis "Client Assistance Memos" to its web site and e-mail these Client Assistance Memos to consulting engineers, contractors, and traffic engineers that subscribe to these documents.	1st Quarter 2012-13	Supervising Civil Engineer
205.	The Engineering Development Review Division staff assigned to the engineering permit intake should be responsible for utilizing the EnerGov Land Management Suite for permit initialization, fee information, and updating permits with project information.	3rd Quarter 2011-12	Supervising Civil Engineer
206.	Staff of the Engineering Development Review Division should be held responsible for the quality of information in the EnerGov Land Management Suite for engineering permits and the planning permits and building permits routed to the Division for their review.	3rd Quarter 2011-12	Supervising Civil Engineer
207.	The EnerGov Land Management Suite should be developed to provide the capacity for automated checklists for use by the staff of the Engineering Development Review Division.	3rd Quarter 2011-12	Supervising Civil Engineer
208.	The staff of the Engineering Development Review Division should utilize the EnerGov Land Management Suite to manage workflow. The Division should look for any opportunity in the Suite to automatically update clients with pertinent project information via emails or an online interface.	3rd Quarter 2011-12	Supervising Civil Engineer
209.	The Engineering Development Review Division should utilize the EnerGov Land Management Suite to provide the capacity for applicants to access data through the Internet or for applicants to subscribe to information.	3rd Quarter 2011-12	Supervising Civil Engineer
210.	The Engineering Development Review Division should record plan check corrections and comments in the EnerGov Land Management Suite.	3rd Quarter 2011-12	Supervising Civil Engineer
211.	The engineering permit fees should be raised in fiscal year 2011-12 so that the Division can at last recover its direct costs. Once the economy recovers, the engineering permit fees should be raised so that the Division can recover its direct and indirect cost through user fees.	3rd Quarter 2011-12	Supervising Civil Engineer
Chapter 11 – Transportation Operations Division			
212.	The Transportation Planning Unit and the Transportation Operations Unit should be consolidated under the supervision of a City Traffic Engineer.	At the time the Transportation Operations Manager meets the MQ's for City Traffic Engineer	Deputy Director
213.	The Transportation Operations Manager position should be upgraded to City Traffic Engineer when the Transportation Operations Manager meets the minimum qualification requirements of the job description for City Traffic Engineer.	At the time the Transportation Operations Manager meets the MQ's for City Traffic Engineer	Deputy Director

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No.	Recommendation	Time Frame for Implementation	Responsibility
214.	The contract Engineer Position should be fully funded by the General Fund in fiscal year 2011.	1 st quarter 2011-12	Deputy Director
215.	The City should not outsource "core" traffic and transportation services except in instances of peak workload or one-time workload such as updating of the Circulation Element.	1 st quarter 2011-12	Deputy Director
216.	The City should update the Circulation Element.	1 st quarter 2012-13	Deputy Director
217.	The Senior Transportation Planner should review the Bicycle Transportation Plan, each recommendation, schedule for implementation, manager accountable implementation of the recommendation, the costs associated with implementation, and funding sources for the capital projects associated with the master plan. This plan of implementation should be integrated into the City's five-year capital improvement program budget.	1 st quarter 2011-12	Deputy Director
218.	The Annual Traffic Safety Report should be modified to include the annual traffic safety data, published by the California Office of Traffic Safety, for cities with a population of 25,000 to 50,000 utilizing the ranking by daily vehicle miles traveled.	1 st quarter 2011-12	Deputy Director
219.	The Police Department should set a goal to increase its traffic enforcement index (total hazardous citations divided by fatal and injury accidents) to 25 from 8.94.	2nd quarter 2011-12	Office of the City Manager
220.	The Transportation Operations Division, when it cannot determine a discernable pattern or cause for pedestrian, bicyclist, or vehicular accidents, should work with the Police Department to increase enforcement in those instances.	1 st quarter 2011-12	Deputy Director
221.	The Transportation Operations Division should develop additional measures within the Annual Traffic Safety Report to reduce pedestrian, bicyclist, or vehicular accidents, including speed humps (via the neighborhood Traffic Management Program), speed limit reductions as allowed under AB 2767, a camera-assisted traffic safety system, and expanded use of in-roadway pedestrian warning lights.	1 st quarter 2011-12	Deputy Director
222.	The Transportation Operations Division should develop recommendations for the consideration of the Public Works Director to reduce pedestrian, bicyclist, or vehicular accidents.	1 st quarter 2011-12	Deputy Director
Chapter 12 -Transit Division			
223.	The plan of organization for the Transit Division should not be modified.	1 st quarter 2011-12	Public Works Director
224.	The existing amount of authorized positions within the Transit Division should be maintained.	1 st quarter 2011-12	Deputy Director
225.	If the Division can demonstrate that the development and implementation of a marketing plan substantively increases ridership, then the City should authorize an additional position to enhance marketing of the Transit Division to enhance the use of and ridership of SLO Transit.	1 st quarter 2012-13	Deputy Director
226.	The Public Works Department should not outsource any	1 st quarter 2011-	Deputy Director

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No.	Recommendation	Time Frame for Implementation	Responsibility
	additional services provided by the Transit Division other than marketing services.	12	
227.	The City should explore with the County the potential to consolidate the City and County transit systems.	3rd quarter 2011-12	Deputy Director
228.	The City should work with California Polytechnic San Luis Obispo to eliminate the potential to use invalid California Polytechnic San Luis Obispo ID cards.	2nd quarter 2011-12	Deputy Director
229.	The City should work with California Polytechnic San Luis Obispo to achieve a greater financial contribution by California Polytechnic San Luis Obispo to the overall SLO Transit farebox revenue, balancing that contribution with the need to encourage transit ridership by students.	1 st quarter 2011-12	Deputy Director
230.	The City and California Polytechnic San Luis Obispo should work to increase route services for those routes at capacity.	1 st quarter 2011-12	Transit Manager
231.	The Transit Division should develop a fare policy for the consideration of the City Council.	1 st quarter 2011-12	Transit Manager
232.	The Transit Manager should prepare an implementation plan for the <i>Short-Range Transit Plan</i> , and submit the implementation plan to the Public Works Director and the Office of the City Manager.	1 st quarter 2011-12	Transit Manager
233.	The Transit Manager should develop a proposal for the consideration of the Public Works Director to retain a consulting firm to develop a marketing plan for SLO Transit, and to assist SLO Transit in its implementation.	1 st quarter 2011-12	Transit Manager
Chapter 13 – Parking Services Division			
234.	The plan of organization for the Parking Division should not be modified.	1 st quarter 2011-12	Public Works Director
235.	The Parking Services Manager should continue to function as the “downtown champion”.	1 st quarter 2011-12	Public Works Director
236.	If the level of parking enforcement output continues at the same level as fiscal year 2009-10, one (1) Parking Enforcement Officer position should be eliminated.	1 st quarter 2011-12	Parking Services Manager
237.	The authorization of a Parking Meter Repair Worker for the maintenance and repair of parking meters should be continued.	1 st quarter 2011-12	Parking Services Manager
238.	The authorization of 11.2 full-time equivalent positions is the minimum necessary for the operation of the three (3) parking structures.	1 st quarter 2011-12	Parking Services Manager
239.	The two Administrative Assistant II's should provide ongoing support to the Public Works Department administration, not to exceed one (1) full workday per week.	1 st quarter 2011-12	Public Works Director
240.	The City should not outsource the management of the three parking structures at the present time given the margin of revenues versus expenditures for the structures.	1 st quarter 2011-12	Parking Services Manager
241.	The Parking Enforcement Officers should be instructed to allocate not less than 90% of their available work hours to patrolling their routes, and that these Officers should make not less than five (5) to six (6) passes on their routes each day.	1 st quarter 2011-12	Parking Services Manager
242.	The Parking Services Manager should develop a capital improvement request in fiscal year 2012-13 to acquire	1 st quarter 2011-12	Parking Services

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No.	Recommendation	Time Frame for Implementation	Responsibility
	license plate recognition technology.		Manager
243.	The Parking Services Manager should develop a capital improvement program budget request to acquire pay stations for the downtown on a "pilot" basis.	1 st quarter 2011-12	Parking Services Manager
244.	The Parking Services Manager should develop a capital improvement program budget request for fiscal year 2012-13 to convert the parking meter locks to high security locks.	3rd rd quarter 2011-12	Parking Services Manager
245.	The Parking Division should The Parking Division Should Upgrade Its Parking Management Software from AutoTRAX Version 1.18 Software From Duncan to Version 1.92.1.	3rd rd quarter 2011-12	Parking Services Manager
246.	The Parking Services Manager should develop a proposal for the consideration of the City Council to establish a residential parking permit fee that fully recovers the costs of the Parking Services Division for the issuance of these permits.	2nd quarter 2011-12	Parking Services Manager
247.	The Parking Services Manager should develop a proposal for the consideration of the City Council to allow advertising within the parking structures.	2nd quarter 2011-12	Parking Services Manager
248.	The Parking Services Manager should develop a proposal for the consideration of the City Council to allow advertising on parking structure tickets and parking gates.	2nd quarter 2011-12	Parking Services Manager
249.	The Finance Department conduct a "spot audit" of the cash handling procedures used by the Parking Division not less than once every two years.	1 st quarter 2011-12	Finance Director
250.	The Parking Division should implement automated parking display message boards in the downtown in consultation with the Chamber of Commerce.	1 st quarter 2012-13	Parking Services Manager
Chapter 14 - Administration			
251.	The Fleet Services Division should report to the Deputy Public Works Director / City Engineer, and not the Public Works Director.	1 st quarter 2011-12	Public Works Director
252.	In the long-term, all of the engineering services would be consolidated under the Deputy Public Works Director / City Engineer. This should include the Supervising Civil Engineer for Capital Projects Design, the Supervising Civil Engineer for Engineering Development Review, the Engineering Construction Manager, and the City Traffic Engineer.	Unknown	Public Works Director
253.	In the long-term, City Traffic Engineer should assume responsibility for the supervision of the Principal Transportation Planner (as recommended previously in Chapter 10), the Transit Manager, and the Parking Services Manager. This would result in a span of control of five (5) full-time staff – an Engineer II, a contract Engineer, the Principal Transportation Planner, the Transit Manager, and the Parking Services Manager.	Unknown	Public Works Director
254.	In the long-term, the Facilities Maintenance Supervisor position and the Fleet Services Supervisor position should be eliminated.	Unknown	Public Works Director
255.	In the long-term, a Fleet and Facilities Supervisor position should be authorized.	Unknown	Public Works Director

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No.	Recommendation	Time Frame for Implementation	Responsibility
256.	In the long-term, an existing Heavy Equipment Mechanic should be upgraded to Lead Heavy Equipment Mechanic.	Unknown	Public Works Director
257.	In the long-term, an existing Building Maintenance Technician should be upgraded to Lead Building Maintenance Technician.	Unknown	Public Works Director
258.	The temporary support staff for the Capital Projects Design Division and the Construction Management Division should be converted to permanent full-time.	4th quarter 2010-11	Deputy Director / City Engineer
259.	The number of authorized administrative assistant positions within the Administrative Division should be maintained.	1 st Quarter 2011-12	Public Works Director
260.	The Public Works Department should develop a clearly written, five-year minimum, Strategic Plan.	2nd Quarter 2011-12	Public Works Director
261.	The Public Works Director should direct staff, as appropriate, to develop and implement the Department's strategic plan.	4th Quarter 2011-12	Public Works Director
262.	The Department should develop goals, objectives, and performance measures.	1 st Quarter 2012-13	Public Works Director
263.	The Public Works Director should direct staff, as appropriate, to provide training and technical assistance to the Department's supervisors in the development of goals, objectives, and performance measures.	4th Quarter 2011-12	Public Works Director
264.	The Public Works Director should direct staff, as appropriate, to provide the necessary training and technical assistance to the Department's supervisors required for collecting performance data.	4th Quarter 2011-12	Public Works Director
265.	The deployment of EnerGov in the Public Works Department should integrate the development of goals, objectives, and performance measures.	1 st Quarter 2012-13	Public Works Director
266.	The Public Works Department should develop a quarterly report that documents the accomplishment of each Division within the Department in terms of performance measures.	2nd Quarter 2011-12	Public Works Director
267.	The Public Works Department should update its departmental policies and procedures.	3 rd Quarter 2011-12	Public Works Director
268.	The Public Works Department should establish a policies and procedures committee, consisting of five to seven staff, that includes a representation of supervisors from all sections.	4th Quarter 2011-12	Public Works Director
269.	The Public Works Director should direct staff, as appropriate, to update the policies and procedures manual working with the policies and procedures committee.	3rd Quarter 2011-12	Public Works Director
270.	The Public Works Department should establish goals, objectives, and performance measures for its employee safety program.	2 nd Quarter 2011-12	Public Works Director
271.	The Human Resources Department should clarify, in detail, in a written policy and procedure the responsibilities of managers, supervisors, and employees for safety in the workplace.	1 st Quarter 2011-12	Human Resources Director
272.	The Public Works Department should work with the Human Resources Department to identify the "core" safety training courses for Department employees. All Department employees should be required to attend this	2nd Quarter 2011-12	Public Works Director

CITY OF SAN LUIS OBISPO, CALIFORNIA**Management and Performance Audit of the Public Works Department**

No.	Recommendation	Time Frame for Implementation	Responsibility
	training.		
273.	The Public Works Department should work with the Human Resources Department to develop standard "tailgate" safety training modules for delivery by supervisors. Supervisors should be required to deliver these tailgate safety modules not less than once a month and report the names of the employees that attended to the Supervising Administrative Assistant.	2nd Quarter 2011-12	Public Works Director
274.	The Public Works Department should establish a departmental safety and health committee to foster employee involvement in the development of a safe work place.	3rd Quarter 2011-12	Public Works Director
275.	The Human Resources Department should audit the effectiveness of the safety and health committee, and recommend improvements as necessary.	1 st Quarter 2012-13	Public Works Director
276.	The Public Works Department should designate an employee as the Safety Coordinator for the Department with this responsibility to be a related duty, and not a primary duty.	3rd Quarter 2011-12	Public Works Director
277.	The Public Works Department should develop an employee safety handbook.	4th Quarter 2011-12	Public Works Director
278.	The Public Works Department should develop a training program and plan for its employees based upon a training needs assessment.	4th Quarter 2011-12	Public Works Director
279.	The Public Works Department should develop a policy and procedure regarding professional development and training.	4th Quarter 2011-12	Public Works Director
280.	The Public Works Department should develop a succession plan for those classifications in the Department that contain a significant proportion of employees older than 50 years of age and that are hard to fill with qualified applicants.	2nd Quarter 2011-12	Public Works Director
281.	The Public Works Department should develop customer service metrics for each of its core services.	2nd Quarter 2011-12	Public Works Director
282.	The Public Works Department should publish these customer service metrics to its web site.	3 rd Quarter 2011-12	Public Works Director
283.	The Public Works Department should revise its web page – How Are We Doing" – to expand who the customer can contact if things go wrong in the delivery of service by the Department.	4th Quarter 2011-12	Public Works Director
284.	The customer satisfaction results collected from the Public Works Department web page regarding the "How Are We Doing" survey should be summarized not less than once a year on that web page so that customers can monitor how well other customers perceive the quality and responsiveness of the services provided by the Public Works Department.	4th Quarter 2011-12	Supervising Administrative Assistant
285.	The managers and supervisors of the Public Works Department should make random telephone contacts with customers – internal or external - not less than twice a month. The purpose of these contacts should be to elicit feedback from these customers regarding the quality and timeliness of the service provided by their Division. The	4th Quarter 2011-12	Public Works Director

No.	Recommendation	Time Frame for Implementation	Responsibility
	results of these contacts should be summarized in a simple e-mail to the Public Works Director to provide constant feedback.		
286.	The Public Works Department should be proactive in seeking feedback from customers – internal and external – by sending a link to an on-line survey. This should be done not less than once annually – for internal and external customers.	1 st Quarter 2012-13	Public Works Director
287.	The Public Works Department should publish the results of the proactive customer satisfaction survey to their web site.	2 nd Quarter 2012-13	Public Works Director
288.	The Public Works Department should analyze the results of the proactive customer survey once a year and identify measures that the Department is taking to improve customer service.	3rd Quarter 2011-12	Public Works Director
289.	The Public Works Department should develop and adopt a customer service policy and procedure.	2nd Quarter 2011-12	Public Works Director
290.	The Public Works Department should provide an orientation to all employees for the Department regarding the customer service policy and metrics of the Department.	3rd Quarter 2011-12	Public Works Director
291.	The Public Works Department should attain accreditation from the American Public Works Association.	1 st Quarter 2013-14	Public Works Director
292.	The Public Works Department should develop a formal written communications plan.	3rd Quarter 2011-12	Supervising Administrative Assistant
293.	The Public Works Department should update the communications plan not less than once every three years.	3rd Quarter 2012-13	Supervising Administrative Assistant
294.	The Public Works Department should develop a proactive team to communicate the key messages of the Public Works Department, and make presentations to civic organizations, service clubs, neighborhood associations, etc., that convey the key messages of the Department not less than once every other month.	3rd Quarter 2011-12	Supervising Administrative Assistant
295.	The Public Works Department should publish an electronic newsletter once every two or three months.	4th Quarter 2011-12	Supervising Administrative Assistant
296.	The Public Works Department should enable residents and businesses to subscribe, electronically, to the newsletter and receive the newsletter electronically.	1st Quarter 2012-13	Supervising Administrative Assistant
297.	The Public Works Department should provide a copy of the electronic newsletter to each of its employees.	1 st Quarter 2012-13	Supervising Administrative Assistant
298.	The Public Works Department should publish an internal electronic newsletter for employees once every two weeks.	1 st Quarter 2012-13	Supervising Administrative Assistant
299.	The Public Works Department should use “social media” to communicate with the residents and businesses of San Luis Obispo.	2nd Quarter 2012-13	Supervising Administrative Assistant
Chapter 15 – Plan of Organization			
300.	The City should evaluate the consolidation of the Public Works Department and the Utilities Department during	3rd Quarter 2011-12	Office of the City Manager

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No.	Recommendation	Time Frame for Implementation	Responsibility
	fiscal year 2011-12.		
Chapter 16 – Public Works Trends			
301.	The trends enumerated in this chapter should be used by the Public Works Department in the development of its strategic plan, particularly in the assessment of its strengths, weaknesses, opportunities and threats.	2nd Quarter 2011-12	Public Works Director

SUMMARY OF COST IMPACT OF RECOMMENDATIONS

No.	Recommendation	Annual Cost Increase	Annual Cost Decrease	Annual Revenue Increase	One-Time Capital Outlay / Cost
9.	The Transportation Operations Division should prepare a five-year traffic signal asset preservation plan that includes replacement of mast arm assemblies, junction boxes, concrete foundations that the controller cabinet and signal posts are set on, or the underground conduit, and signal controllers. This plan should be updated annually. This plan should be integrated into the City's capital improvement program.	\$74,000			
20.	The Public Works Maintenance Supervisor position in the Urban Forestry Division should be eliminated through attrition. The vehicle assigned to this Public Works Maintenance Supervisor should be eliminated at the same time as this position.		(\$120,700)		
21.	The Arborist / Urban Forester should be assigned responsibility for the supervision of the City's Urban Forestry Division. The compensation of the position should be adjusted to reflect these new responsibilities.	\$12,800			
23.	The two temporary tree maintenance worker positions should be converted to one (1) full-time Tree Trimmer 1 position.	\$27,000			
24.	The Public Works Department should contract for block-by-block tree trimming and park tree trimming of 900 to 1,000 trees annually to supplement the work of its own Tree Trimmers.	\$76,000			
63.	The Public Works Department should acquire additional equipment to reduce staff hours required for the maintenance of sports fields.				\$29,200
73.	When the Fire Vehicle Mechanic position becomes vacant, the position should be reclassified as Heavy Equipment Mechanic.		(\$32,100)		

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No.	Recommendation	Annual Cost Increase	Annual Cost Decrease	Annual Revenue Increase	One-Time Capital Outlay / Cost
81.	The Office of the City Manager, the Finance and Information Services Director, and the Public Works Director should work with departmental management to reduce the City's fleet by 10% (excluding the Fire Department).		(\$70,000)		
96.	The Public Works Department should acquire an additional Square Rigger license for the Administrative Assistant III or the Public Works Temporary Worker at the corporation yard.				\$450
101.	The cost allocation plan should be revised so that funding is allocated to the Facility Maintenance Division so that it can properly maintain these buildings. This will impact only those facilities utilized by enterprise funds. That includes the facilities used by Golf, Transit and the Utilities Department.			\$76,300	
104.	The City should authorize an additional Building Maintenance Technician position for the Facilities Maintenance Division.	\$76,300			
105.	The Public Works Department should cancel the contract for maintenance and repair of the heating, ventilating, or air conditioning equipment should be eliminated when the recommended Building Maintenance Technician position is filled.		(\$17,900)		
109.	The City should allocate approximately 1.5% to 3% of current replacement value of City buildings (excluding the value of land) to building component replacement on an annual basis.	Unknown			
110.	The City should allocate approximately 1% to 2% annually to ongoing facilities maintenance and repair including major maintenance.	Unknown			
125.	The costs incurred by the Facilities Maintenance Division in the maintenance and repair of parking structures should be included in the cost allocation plan.			\$31,000	
136.	The annual operating costs of street sweeping, including depreciation, should be funded through solid waste fees.			\$240,000	
179.	Eliminate the two (2) temporary positions (0.8 full-time equivalent positions).		(\$39,100)		

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No.	Recommendation	Annual Cost Increase	Annual Cost Decrease	Annual Revenue Increase	One-Time Capital Outlay / Cost
182.	The temporary Permit Technician position should be filled permanently, but as an Engineering Technician, and assigned additional development-related workload.	\$14,448			
213.	The Transportation Operations Manager position should be upgraded to City Traffic Engineer when the Transportations Operations Manager meets the minimum qualification requirements of the job description for City Traffic Engineer.	\$20,800			
214.	The contract Engineer Position should be fully funded by the General Fund in fiscal year 2011.	\$90,800			
216.	The City should update the Circulation Element.				\$300,000
254.	In the long-term, the Facilities Maintenance Supervisor position and the Fleet Services Supervisor position should be eliminated.		(\$198,200)		
255.	In the long-term, a Fleet and Facilities Supervisor position should be authorized.	\$99,100			
256.	In the long-term, an existing Heavy Equipment Mechanic should be upgraded to Lead Heavy Equipment Mechanic.	\$11,400			
257.	In the long-term, an existing Building Maintenance Technician should be upgraded to Lead Building Maintenance Technician.	\$11,400			
291.	The Public Works Department should attain accreditation from the American Public Works Association.				\$15,000
300.	The City should evaluate the consolidation of the Public Works Department and the Utilities Department during fiscal year 2011-12.		(\$364,000)		

2. ASSET MANAGEMENT

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

- The infrastructure is aging, and much of it exceeds its life span.
- 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*.¹ 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 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*

¹ Guidance Position Statement for Public Works Infrastructure Asset Management, American Public Works Association, 2003

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 Department.

1. THERE ARE A NUMBER OF STRENGTHS IN THE ASSET MANAGEMENT PRACTICES OF THE PUBLIC WORKS DEPARTMENT.

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

- The acquisition and installation of the EnerGov computerized maintenance management system;
- The availability of inventory data for some types of assets such as traffic signals;
- The pavement management system utilized by the Department to manage the preventive maintenance of the City’s street system;
- The fleet management system utilized by the Department to manage the replacement of the vehicles in its fleet; and

- The City is in the process of developing a five-year capital improvement program to facilitate longer-term capital planning.

These are examples of the strengths in the asset management practices of the Department.

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

The Department has not developed a formal, written asset management policy to serve as a starting point for unifying asset management across all of its Divisions.

Why develop an asset management policy? Without this policy, alignment and consistent management of assets across all of the Divisions in the Public Works Department is not possible.

The Governmental Finance Officers Association established a best practice for capital asset assessment, maintenance and replacement. That best practice recommends that *“local, state and provincial governments establish a system for assessing their assets and then appropriately plan and budget for any capital maintenance and replacement needs.”* The best practice further recommends that *local, state and provincial governments develop “a policy to require a complete inventory and periodic measurement of the physical condition of all existing capital assets. The assessment should document the established methods of condition assessment, including any that are used to evaluate below-ground infrastructure. This physical condition inventory and measures used should be kept current, with facility condition ratings updated every one to three years.”*

This, however, is not merely a best practice. It is also something that the employees of the Public Works Department are insisting be developed. This was clear

in the employee survey (presented in the appendix). The employees that responded (71% response rate) to an anonymous questionnaire administered by the consulting team clearly believed that the City and the Department needed to do more as it regards asset management. This is evident to the responses to questions regarding asset management (presented below).

- 49% of the respondents disagreed with the statement in question #41 that said “The Department has sufficient staff resources to properly maintain existing infrastructure assets.” 15% agreed and 36% neither agreed nor disagreed.
- 41% of the respondents disagreed with the statement in question #42 that said “The City has effectively addressed increased asset maintenance requirements within our Department’s budget.” About 17% agreed and 42% neither agreed nor disagreed.
- 48% of respondents neither agreed nor disagreed with the statement in question #43 that said “I have seen an overall deterioration in our infrastructure assets over the course of my career.” About 26% agreed and 26% disagreed.
- 53% of respondents neither agreed nor disagreed with the statement in question #44 that said “The City is effectively planning for the future and will be able to properly maintain infrastructure assets over time long term.” 25% agreed and 22% disagreed.
- 51% of respondents disagreed with the statement in question #45 that said “The Department is positioned well to handle increased infrastructure assets and increased regulations without significant service level impact.” 18% agreed and 32% neither agreed nor disagreed.

Overall, responding employees did not believe that the Department has sufficient staff resources to maintain existing infrastructure assets, or that the City has addressed increased asset maintenance requirements within the Department’s budget. Employees had mixed feelings regarding the overall deterioration of infrastructure assets and the City’s ability to effectively plan for the future in regards to properly maintaining infrastructure assets for the long term. Most importantly, employees do not feel that the

Department is positioned well to handle increased infrastructure assets and increased regulations without significant service level impacts

The Department should respond to these concerns through the development of asset management policies and procedures. The Department should develop a formal, written policy and procedure regarding asset management that would be 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 should reflect a comprehensive, long-term view of asset management.
- Policy goals and objectives should be comprehensive, and integrated with other City policy objectives, and supported by quantitative and measurable performance measures or criteria.
- Principles of good asset management should be articulated in the policy and procedure and clearly recognized as the driving force for resource allocation and utilization.
- The goals and objectives should support the preservation of existing infrastructure assets.
- Goals and objectives should 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 should include criteria for allocating resources, setting program priorities, and selecting projects consistent with the 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.

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

Recommendation #2: The Public Works Department should develop an asset management policy and procedure for the consideration of the Mayor and City Council.

3. THE PUBLIC WORKS DEPARTMENT SHOULD ASSIGN ACCOUNTABILITY FOR MANAGEMENT OF THE ASSETS UNDER ITS STEWARDSHIP.

The Public Works Department has not specifically assigned responsibility for management of each of the types of assets entrusted to its care.

Why assign responsibility for management of each of the different types of assets? The assignment of this accountability should elaborate on the how the traditional supervisory functions within the Department need to change. Operating in silos with a reactive, short-term term mindset impedes asset management, while a multi-disciplinary, long-term approach enhances it. Without clarity of responsibility for each asset, the accountability will continue to reside in the Public Works Director and Deputy Public Works Directors. This is impractical. There are only three managers in the Department, and the workload of these three managers exceeds their ability to assume this responsibility. The responsibility needs to be delegated to the first-line supervisors in the Department.

In the development of the asset management policy and procedure, the Department should clarify accountability for the management of each of the assets under its stewardship. This would include such assets as stormwater collection, traffic signals, streetlights, streets, buildings, parks, etc. The Department should designate a specific first-line supervisor as responsible for the asset management for each asset.

The clarification of the accountability should consider the following elements:

- Each asset manager would be responsible for the development of the Department's asset strategy for that specific asset;
- Each asset manager would be responsible for coordinating asset management of that specific asset across the Department;
- Each asset manager would be responsible for the preparation of an asset plan for that asset based upon life cycles for those assets; and
- Each asset manager would be responsible for continuous improvement in the Department'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 proposed allocation of responsibility in the department for the management of these assets is presented in the table below.

Asset	Proposed Asset Manager
Parks, medians, and open space	Parks Supervisor
Buildings	Facilities Maintenance Supervisor
Urban forest	City Arborist
Streets, stormwater, traffic signals, regulatory street signs, waterways, bridges	Streets Supervisor
Fleet	Fleet Maintenance Supervisor
Parking structures, parking meters	Parking Services Manager
Transit bus fleet	Transit Manager

The Capital Projects Design Division should assist these first-line supervisors in fulfilling their responsibilities as asset managers. This should include the provision of

training to these first-line supervisors in asset management including asset management principles and concepts, their role and responsibilities in supporting the Department's asset management efforts, how to develop an asset management program, the asset data that needs to be collected to support asset management including asset inventories and condition assessments, development of life cycles for the different classes of assets, etc.

The Department should establish a departmental asset management council to facilitate a coordinated departmental asset management approach. The council should be comprised of each asset manager, and the Department'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 the asset management policy for consideration of the Mayor and City Council.

Recommendation #3: In the development of an asset management policy and procedure, the Department should clarify accountability for the management of each of the assets under its stewardship. Responsibility should be assigned to the Department's first-line supervisors, and these first-line supervisors should be held accountable for managing each specific type of asset assigned to the Department.

Recommendation #4: The Department should establish an asset management council to facilitate a coordinated asset management approach.

Recommendation #5: The Capital Projects Design Division should assist the Department's first-line supervisors in fulfilling their responsibilities as asset managers. This should include the provision of training to these first-line supervisors in asset management.

4. THE PUBLIC WORKS DEPARTMENT SHOULD COMPLETE THE DEVELOPMENT OF ASSET INVENTORIES FOR THE ASSETS ENTRUSTED TO THE DEPARTMENT FOR MAINTENANCE AND REPAIR.

The Public Works Department has already collected some inventory information. Urban Forestry has already collected inventory data regarding street and park trees that

can be readily imported into the EnerGov Asset Management Suite. Some parks inventory data has been collected. Traffic signal inventory data has been collected, i.e., signal cabinets, signal poles, etc., and is available within Cartegraph.

However, much asset information remains to be collected. For example, street name and regulatory sign data is being collected, but the inventory data will not be completely collected for eight (8) years. As another example, facility asset information needs to be collected.

The collection of asset inventory data would enable the Department to accomplish a best practice defined by the *American Public Works Association* in its *Management Practices Self-Assessment*. Management Practice 10.13 states “infrastructure assets are inventoried for compliance with Government Accounting Board Statement Number 34 (GASB 34) requirements, and to properly account for the agency’s infrastructure.”

To develop this comprehensive inventory, the Agency could consider taking the following steps:

- **Identify the objectives of the EnerGov including how the asset inventory data will be utilized to maintain and repair 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 EnerGov 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 EnerGov system will be achieved at once. The Department 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 EnerGov system is defined, the Agency must determine how to obtain the data and how it

will be entered into EnerGov. 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 can be time intensive and costly, depending on the methods utilized. 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. The Department has collected much of the asset inventory information required, as noted elsewhere in this report, and is already collecting other asset inventory information (regulatory signs).
- **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 EnerGov 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 department-wide basis.** The Department should develop a schedule for data collection and clearly assign responsibility 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 Department 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.

The Public Works Director should assign staff, as appropriate, the responsibility for working with the supervisors of the Urban Forestry, Street Maintenance, Park Maintenance, and Facilities Maintenance Divisions to document the inventory data already available to make it ready for entry into the EnerGov Asset Management Suite, and developing plans for the collection of inventory data that is not readily available.

Recommendation #6: The Public Works Director should be assign staff, as appropriate, the responsibility for working with the supervisors of the Urban Forestry, Street Maintenance, Park Maintenance, and Facilities Maintenance Divisions to document the inventory data available working with these first-line supervisors to make the data available for entry into the EnerGov Asset Management Suite, and for developing plans for the collection of inventory data that is not readily available.

6. THE PUBLIC WORKS DEPARTMENT SHOULD ENSURE THAT THE ASSET REPLACEMENT VALUES CONTAINED IN THE COMPREHENSIVE ANNUAL FINANCIAL REPORT REFLECT VALUATION USING A MODIFIED ACCOUNTING APPROACH.

In conducting this study, the Matrix Consulting Group requested the replacement value of the City Hall from the Finance Department. The replacement value contained in the comprehensive annual financial report for the City Hall was \$192,500. This reflects its historical cost, and not its replacement value. Its current replacement value should exceed \$5,000,000.

To be in compliance with Governmental Accounting Standards Board (GASB) Statement 34, governments must report capital assets - including infrastructure - at historical cost, and then depreciate those assets over their useful lives.

However, if infrastructure assets are maintained so as to preserve remaining service potential, agencies are encouraged by the American Public Works Association to use the “modified approach” instead of reporting depreciation for the assets.² GASB recognizes that when assets are consistently maintained and renewed so as to ensure essentially an indefinite life, they are not being “used up” as is assumed under traditional depreciation rules.

The Public Works Department should work with the Finance Department to ensure that the current replacement value utilized for those assets entrusted to the Public Works Department are accurate and reflect the “modified” accounting approach.

Recommendation #7: The Public Works Department should work with the Finance Department to ensure that the current replacement value utilized for those assets entrusted to the Public Works Department are accurate and reflect the “modified” accounting approach.

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

With the exception of those assets associated with the pavement management program, the Public Works Department does not conduct condition assessments of the assets entrusted to the Department for maintenance and repair.

Why conduct condition assessments? The goal is to establish a manageable asset replacement program, in terms of affordability and ease of implementation, to aid in the renewal of capital. Just because an asset has reached the end of its operating life on paper, doesn’t mean that it automatically needs to be replaced. Armed with condition

² Public Works Management Practices Manual, American Public Works Association, page 20.

assessment information, it becomes much easier to extend the life of assets by prioritizing repair and replacement programs based on actual asset condition. This is the cornerstone for bridging the gap between asset investment funding that is available and risk reduction.

Condition assessments would enable the Department to accomplish a best practice defined by the *American Public Works Association* in its *Management Practices Self-Assessment*. The American Public Works Association typically encourages condition assessment for each asset. For example, Management Practice 16.4 states “a condition assessment of all facilities and major facility components is maintained and updated on a regular basis.” The American Public Works Association encourages condition assessments for a range of assets including streets, facilities, stormwater, etc.

The Public Works Department should conduct condition assessments at regular intervals, much like it already does for the pavement management program.

There are many professional associations that have established condition assessment models. The International Facility Management Association, for example, has developed a facility condition assessment model. The City of Olympia, Washington has developed a Condition Assessment Major Maintenance Program (CAMMP) for managing its aging parks. CAMMP was initiated in 2008 to create a detailed inventory of park facilities and develop a condition assessment and rating system.

Recommendation #8: The Department should conduct periodic asset condition assessments of the assets under its stewardship.

8. THE PUBLIC WORKS DEPARTMENT SHOULD DEVELOP LONG-TERM ASSET PRESERVATION PLANS FOR THE ASSETS UNDER ITS STEWARDSHIP.

The Public Works Department has developed a long-term asset preservation plan for its street system and has implemented a plan that systematically addresses the rehabilitation and renewal needs of the City's streets, signs, and sidewalks. However, other assets, such as parks, facilities, and traffic signals, for example, lack these plans.

The Government Finance Officers Association recommends in best budgeting practice 5.2 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."*

Why should these long-term asset preservation plans be prepared? The preparation of asset preservation plans provides a flexible, but meaningful planning structure so that the Department and the City can focus scarce financial resources on high priority asset replacements, and make intelligent decisions regarding alternatives. These policies and plans plan for expenditures and help minimize deferred maintenance.

(1) The Department Should Develop A Five-Year Asset Preservation Plan for Replacement of Traffic Signals and the City Should Increase Funding for the Replacement of Signal Controllers.

The Department 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 and controllers are periodically identified for an upgrade and implemented as funding 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 would be 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 Department 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:

Rating	Conditions Generally Observed
Poor	• Lack of mast arms • 30+ year old wiring and conduits • Geometric deficiencies related to delay or safety issues
Fair	• Mast arms present • Signal hardware about 20 years old • Operational deficiencies related to signal equipment (detection or cabinet limitations)
Good	• Mast arms present • Newer installation or recently upgraded • May need a minor equipment upgrade (e.g., video detection or cabinet) but remainder has been upgraded recently

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:

- 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 Department 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. The capital outlay associated with this long-term master plan will need to be identified in that master plan.

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. Traffic signal controllers should be replaced at approximately fifteen (15)-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 fifteen (15)-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, based upon 74 signalized intersections, is presented in the table below.

Recommendation	Annual Capital Outlay
Traffic signal controllers should be replaced at approximately fifteen (15)-year intervals due to obsolescence or changes in functionality.	\$74,000

Recommendation #9: The Transportation Operations Division should prepare a five-year traffic signal asset preservation plan that includes replacement of mast arm assemblies, junction boxes, concrete foundations that the controller cabinet and signal posts are set on, or the underground conduit, and signal controllers. This plan should be updated annually. This plan should be integrated into the City's capital improvement program.

(2) The Public Works Department Should Develop A Five-Year Asset Preservation 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."*

The Public Works Department has not prepared an asset preservation plan for the City's parks that identifies necessary renewal, replacement, and rehabilitation based upon a condition assessment and life cycle analysis.

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 Department should be charged with completing the inventory of 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 an asset preservation plan for these improvements for consideration of the City Council.

There a number of steps required in the development of the five-year asset preservation plan. These steps are presented below.

- As mentioned previously, the Parks Division will need to complete an inventory of the assets in each of its parks, and document the current replacement value of the assets in the parks.
- The Division will then need to identify the approximate year of installation for these assets.
- The Division will then need to assign a life cycle or replacement schedule for each of these assets.
- As previously mentioned, the Division will need to conduct a formal, written condition assessment for the assets in the City's parks. The replacement schedules are developed for planning purposes only. The intention is not to replace items just because they are scheduled to be replaced. On an annual basis, staff should reviews these schedules and revise and update them as necessary. Assets are not replaced until it is determined that it is necessary via the condition assessment. The five-year replacement plan merely provides a tool to ensure that the appropriate funds are available for replacement when it is necessary.

The extent of information that would need to be collected in the development of this plan are presented in the table below.

Asset Number – Unique asset numbers should be assigned.
Description – Brief description of the asset
Location – What park or landscaped area is the asset is allocated in.
Classification – Each asset should be assigned a classification to aid in categorizing the different types of assets.
Original Year Purchased – To the best of the Divisions ability, this is recorded accurately. There are some items that will not have records for and predate institutional knowledge. Estimates should be made in these situations
Initial Cost – If records are available, the original cost is included. Otherwise the current replacement cost has been estimated.
Life Span – This is an estimate of how many years it will be before the asset needs to be replaced. It is important to stress again, that this is simply a tool for budgeting and assessing our needs rather than a specific reason to replace and item. Life spans are typically assigned based on the classification of asset and the City's history or industry standards on life span. Some examples include: • Asphalt – 15 years • Buildings – 50 years • HVAC – 10/20 years • Fencing – 20 years • Flooring – 10 years • Irrigation Equipment – 20 years • Lighting – 40/60 years • Playground Equipment – 17 years • Roofs – 20 years • Tennis Courts – 10 years for color coating, 20 years for replacement
Current Replacement Year – This is calculated by adding the original year purchased (or last replacement date) and the lifecycle for the category of asset.
Current Replacement Cost - This involves calculating the replacement cost for each category of asset.

The categories used above would allow the data to be sorted in a variety of ways. Assets can be sorted to determine questions such as the investment the City has made in asphalt paths, tennis courts, playgrounds, or roofs. The data can also be separated by facility to determine the investments in a given location. More importantly, the Department can begin to forecast what the given replacement value of assets will be in a given year.

This information should be calculated for the assets that should be scheduled to be replaced in a given year, but should be prioritized into short term (1 to 3 years), mid term (4 to 7 years), and long term (8 to 10 years) projects. Since the inflation should be calculated on a yearly basis, it should also possible to assess the overall replacement cost for all assets at a given time.

Recommendation #10: The Park Maintenance Division should develop a five-year asset preservation plan for the renewal and rehabilitation of the City's parks. This plan should be updated annually. This plan should be integrated into the City's capital improvement program.

(3) The Public Works Department Should Develop A Five-Year Asset Preservation Plan for the City's Buildings.

The development of an asset preservation plan for the City's buildings would enable the Department to meet a management practice recommended by the *American Public Works Association* in its *Management Practices Self-Assessment*. Management Practice 16.5 states "a component replacement schedule should be established for major components. Development of this plan allows agencies to project maintenance budgets and reduce the need for deferred maintenance."

Inadequate funding of facilities maintenance and minor repairs is a persistent problem that contributes directly to the deteriorated conditions. The *Building Research Board of the National Research Council* recommended that an appropriate total budget allocation for routine facility maintenance *and* capital renewal should be in the range of 2% to 4% of the aggregate current replacement value (excluding major infrastructure such as foundations). The *Association of Physical Plant Administrators* (APPA) recommended that the specific percentage for a facility depends on a wide range of factors, and the relationship between maintenance and repair requirements and current replacement value may vary widely, for any one building may be outside the proposed range. APPA indicated that the 2% to 4% range is most valid as a budget guide for an inventory of buildings and over periods of several years.

There are a number of steps that the Facilities Maintenance Division should utilize in developing an asset preservation plan for the City's buildings. These steps are presented below.

- As mentioned previously, the Facilities Maintenance Division will need to complete an inventory of the assets in each of the City's buildings, and document the current replacement value of the building components in the buildings.

- The Division will then need to identify the approximate year of installation for these assets.
- The Division will then need to assign a life cycle or replacement schedule for each of these assets. Some of these guidelines will be available from professional associations. For example, lifecycle guidelines regarding life expectancies of heating, ventilating, and air-conditioning equipment can be taken from the Equipment Handbook of the American Society of Heating, Refrigerating and Air Conditioning Engineers. However, lifecycles can also be based on industry averages, professional experience, and City recommendations. Life-cycle planning allows the Division to easily create multi-year plans for facilities renewal. It is based on three key elements: (1) building components have known life expectancies; (2) the remaining life of each building system can be estimated and (3) reliable estimates of the renewal costs can be made. The life-cycle planning approach estimates both current and future renewal requirements, for each building, by individual system (e.g., electrical, HVAC, plumbing, roofing, etc.). It indicates when each system is likely to fail and what the cost of replacement/renewal will be. The methodology uses facility type, gross square footage, construction and renovation dates, sub-systems, life cycles, and replacement/renewal costs to predict annual facilities renewal needs. Expected renewal costs are aggregated by building and time period to project total renewal needs into the future.
- As previously mentioned, the Division will need to conduct a formal, written condition assessment for the building components in the City's buildings. The replacement schedules are developed for planning purposes only. The intention is not to replace items just because they are scheduled to be replaced. On an annual basis, staff should review these schedules and revise and update them as necessary. Assets are not replaced until it is determined that it is necessary via the condition assessment. The five-year asset preservation plan merely provides a tool to ensure that the appropriate funds are available for replacement when it is necessary.

The extent of information that would need to be collected in the development of this plan are presented in the table below.

Asset Number – Unique asset numbers should be assigned.
Description – Brief description of the asset
Location – What City building is the asset is allocated in.
Classification – Each asset should be assigned a building component classification to aid in categorizing the different types of assets.
Original Year Purchased – To the best of the Divisions ability, this is recorded accurately. There are some items that will not have records for and predate institutional knowledge. Estimates should be made in these situations
Initial Cost – If records are available, the original cost is included. Otherwise the current replacement cost has been estimated.
Life Span – This is an estimate of how many years it will be before the asset needs to be replaced. It is important to stress again, that this is simply a tool for budgeting and assessing our needs rather than a specific reason to replace and item. Life spans are typically assigned based on the classification of asset and the City's history or industry standards on life span. Some examples include: • Carpet – 15 years • Water heater – 15 years • Air handler – 20 years • Windows – 40 years • Interior finish - paint– 15 years • Boiler – 30 years • Roof Top Unit – 15 years • Chiller – 20 years • Roofs – 20 years • Condensing Unit – 20 years
Current Replacement Year – This is calculated by adding the original year purchased (or last replacement date) and the life span.
Current Replacement Cost - This involves calculating the replacement cost for each category of asset

10-year forecasts in these facility asset preservation plans provide two levels of information to help managers and supervisors. First, the forecast demonstrates how much needs to be spent – on a year-by-year basis – in order for deferred maintenance to stop growing. When renewal does not take place at the end of a system's useful life, then the deferred maintenance increases. Second, they explain, for the City, both the magnitude of the backlog and why it exists.

This information should be calculated for the assets that should be scheduled to be replaced in a given year, but should be prioritized into short term (1 to 3 years), mid term (4 to 7 years), and long term (8 to 10 years) projects. Since the inflation should be calculated on a yearly basis, it should also possible to assess the overall replacement cost for all assets at a given time.

Recommendation #11: The Facility Maintenance Division should develop a five-year asset preservation plan for the renewal and rehabilitation of the City's buildings. This plan should be updated annually. This plan should be integrated into the City's capital improvement program.

3. MAINTENANCE MANAGEMENT

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

- The adequacy of maintenance management systems employed; and
- The deployment of the EnerGov asset management system to manage the maintenance of the Department's assets.

In performing this study, the project team compared current maintenance management conditions in the Department to best practices as defined by professional associations such as the American Public Works Association, the American Association of State Highway and Transportation Officials, the Washington County Road Administration Board, etc.

Effective maintenance management systems use accurate information to enable efficient deployment of staff, materials, and capital resources to cost-effectively maintain assets.

1. THERE ARE A NUMBER OF STRENGTHS IN THE MAINTENANCE MANAGEMENT PRACTICES IN THE PUBLIC WORKS DEPARTMENT.

As noted in a September 10, 2010 Council Agenda Report, the City must replace its FoxPro software applications due to a lack of continuing support for the products. This project to replace the FoxPro software applications has two distinct components: (1) GIS, permitting and work order applications; and (2) timecard and scheduling applications.

The City was well-served over the past 25 years by the legacy information systems developed and maintained at a very low cost in contracting with a local programmer. These applications were the user interface software for a wide range of

mission-critical functions throughout the organization including land use inventory, GIS, payroll timecards and work orders.

However, it was necessary to begin replacing the legacy system due to lack of continuing software support.

The contract was awarded to EnerGov in the amount to \$815,000 to replace the GIS / Permitting / Work Order legacy systems. This represents a significant investment by the City. The following products were purchased from EnerGov:

- EnerGov .NET Land Management Suite - manages process automation of land use planning and project review, permitting, enforcement cases, and inspections;
- EnerGov .NET Asset Management Suite - automates the management of infrastructure assets, inventory control, maintenance, work orders, inspections and condition investigations;
- EnerGov .NET Request and Enforcement Suite - serves a full spectrum of government agencies in need of automating the management of citizen requests and complaints, enforcement cases, investigations, escalations, inspections, citations, hearings and adjudications;
- EnerGov GIS (ArcGIS Server Technology) - Enterprise GIS integration that allows the user to utilize GIS data within the EnerGov software, providing visualization and analysis capabilities;
- EnerGov .NET Citizen Access Web Portal - provides constituents with 24-hour access to community development and regulatory services, allowing for department transparency and increased efficiency; and
- MobileGov (one license) - allows user the ability to manage any type of inspection process and access real-time data from the field.

The installation for these various suites was to begin in November 2010, but would require approximately ten to twelve months to complete the installation or October to November 2011.

Within the Public Works Department, those functions that included as part of the installation included Engineering Development Review (Land Management Suite), Park

Maintenance (Asset Management Suite), Street Maintenance Asset Management Suite), Facility Maintenance (Asset Management Suite), and Urban Forestry (Asset Management Suite). It does not include Fleet Maintenance, nor does it include traffic signals and street regulatory signs.

The intent of the deployment, as explained to the Matrix Consulting Group, was merely to replace the functionality of the legacy information systems.

However, the acquisition of EnerGov will strengthen the ability of the Department to manage maintenance. EnerGov has the capacity to enable the Department to systematically manage the maintenance and repair of its assets. Other examples of the strengths of the Department of its asset management practices include inventory data for some of its assets i.e., traffic signals, the pavement management system, the beginning of the development of a five-year capital improvement program, etc.

2. THE PUBLIC WORKS DEPARTMENT SHOULD LEVERAGE ITS INVESTMENT IN ENERGOV ASSET MANAGEMENT SYSTEM TO FULLY DEPLOY A MAINTENANCE MANAGEMENT SYSTEM.

The EnerGov Asset Management Suite 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 EnerGov Asset Management Suite can serve as the basis for maintenance management by the Department. Maintenance management is basically a management-by-objective approach to planning, organizing, directing and controlling work. This approach has two primary goals: increased productivity and effective management of levels of service.

The use of the EnerGov Asset Management Suite as a maintenance

management suite would enable the Department to accomplish a best practice defined by the *American Public Works Association* in its *Management Practices Self-Assessment*. Management Practice 10.14 states “infrastructure maintenance activities are managed using dedicated work order systems to track requests, work orders, and costs of maintaining various infrastructure assets.”

The management of the maintenance and repair of assets to optimize their useful life and reduce maintenance costs is an ongoing challenge for the Department. However, the Department must shift its management process for the entire range of its assets from that of a “dire need” maintenance approach to one of a “preventative” system of maintenance, renewal, and rehabilitation. Some assets are being preventively maintained.

What is the benefit of a maintenance management system in accomplishing this change? These benefits are noted in the paragraphs below.

- **Resource management.** Public works departments are finding that they are being asked to do more with less. These departments are being forced to place responsibilities that previously had been shared by several employees onto the shoulders of one employee. This places more importance on the need to have a central database of asset data that can be used to prioritize and manage projects, maintenance and repair activities and manage resources. Doing more with less also applies to tighter budgets and finding the best way to use scarce budget dollars by better managing and prioritizing projects. Proactively scheduling maintenance activities allows better management of work crews, schedules and budgeted dollars.
- **A better informed City Council and public.** Managing the maintenance and repair of San Luis Obispo’s assets should not fall solely on the shoulders of the Public Works Department. Residents, the City Council, and other City departments all have a unique outlook on how the City’s revenue should be used. An effective maintenance management system is a critical piece in enabling the Public Works Department to voice its needs regarding how these dollars should be spent to maintain and repair assets.
- **Deterioration of public infrastructure.** Climate, weather conditions and usage all take their toll on the San Luis Obispo’s infrastructure. In the wake of the

budget reductions of recent years, the Public Works Department is struggling to plan for the lifecycle of these assets. Proactive preventative maintenance helps extend the life of an asset in a cost-effective manner, reducing the need for large expenditures typical of a dire need, reactive maintenance approach.

- **Government standards.** Government Accounting Board Statement Number 34 (GASB 34) and National Pollutant Discharge Elimination System (NPDES) Storm Water Phase II are two relatively new actions that require enhanced and more consistent information on infrastructure assets than has been required in the past.
- **Emerging and affordable technology.** With the technological advances in recent years, tools are now available to create an effective automated asset management system. These systems no longer require large investments of time and money toward the purchase of expensive mainframes. The most powerful tools available today can be brought directly to the desktop - making them accessible to nearly everyone.
- **Privatization.** With outsourcing of local government services on the rise, an accurate account of inventories and their conditions becomes more critical. If maintenance and repair of assets is outsourced, bids by the private sector will be problematic without an accurate accounting of the assets whose maintenance and repair will be outsourced.
- **Geographic Information Systems.** The City has invested, and continues to invest, significant financial resources in the development and deployment of its geographic information system. Does it make sense to use that data in day-to-day business applications? EnerGov uses the GIS database as the asset inventory, issuing and tracking work orders against capital assets and infrastructure stored as features and related devices in the GIS. This GIS-centric approach leverages an organizations investment in GIS.

Other agencies have enumerated significant benefits from the implementation of computerized maintenance management systems. Loveland, Colorado (population 67,000), for example, found that because of the many benefits it was experiencing from installation in one division that it planned to continue expanding the system throughout the organization in the future. Having used the computerized maintenance management system for over a year, the division that initially installed the system realized many positive results. Office reliability had increased by using a dependable electronic system to record calls and track the information that is easily retrieved and viewed on-screen.

Productivity levels had increased. Crews were dispatched more rapidly and supervisors were instantly aware of problems. The division eliminated the need to hire outside labor due to increased staff productivity, and charges for services were applied in a timely manner, both resulting in significant cost savings. Office staff were able to address concerns over the phone rather than send crews and equipment back into the field - another cost-saving measure. Numerous reports were created from the data in the computerized maintenance management system and the City discovered ways to use the information to improve staffing, training, and education, accurately assess upcoming needs, and identify routes or special-needs locations that may require extra attention.

Bozeman, Montana (population 33,000) implemented a computerized maintenance management system in four divisions including Water / Sewer, Forestry, Streets, and Signs. The Superintendent of the Water / Sewer Department noted that “since implementation, the amount of paper I handle has been cut by 90%. I like being able to look at the map at any time throughout the day and quickly see what outstanding work orders and service requests there are and their location without having to ask someone or go through a vast amount of paper to find out. With rising fuel and labor costs, the computerized maintenance management system allows us to schedule work orders in similar areas of the city rather than ‘bouncing’ all over the city throughout the day, especially for work like the Curb Box Program, fire hydrant and sewer flushing, and our water valve exercise program, to name a few. I feel the computerized maintenance management system has helped take our maintenance program up to a higher level of organization, and allow us to quickly access asset history at the touch of a mouse.”

The deployment of computerized maintenance management systems is not

something only done by large public sector agencies. For example, deployment of maintenance management systems is something that every county in the State of Washington is legally required to accomplish. The deployment of these systems are required for maintenance and repair of roads in the unincorporated areas of the County. This was required based upon the States' adopted *Standard of Good Practice for Maintenance Management*. Many of these counties have total incorporated and unincorporated population comparable to or less than that of San Luis Obispo.

The deployment of EnerGov will undoubtedly require extensive participation by the managers, supervisors, and staff of the Public Works Department. The extent of this required participation should have been identified in the needs assessment for the replacement of the legacy systems in the Public Works Department.

The Public Works Department should utilize the EnerGov Asset Management Suite to develop and install a maintenance management system to enable the identification of the services provided (e.g., traffic signal cabinet preventive maintenance), the levels of service (e.g., traffic signal cabinets are preventively maintained twice annually), the outputs of each of these services (e.g., the number of cabinets preventively maintained), and the costs of those service 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 Public Works Department that are responsible for maintaining the City's infrastructure.

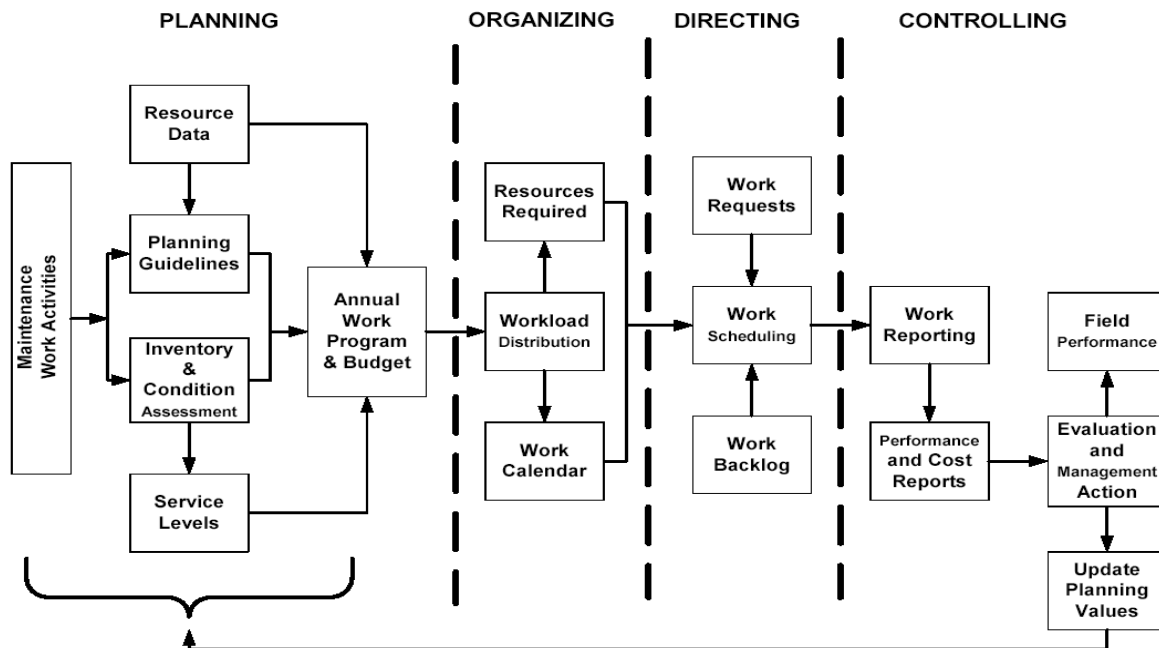
The components of a successful maintenance management system are presented below.

- Documenting the number and type of maintenance features (physical assets) and the condition of these features are major factors in determining the kinds and amounts of work needed. An inventory of such maintenance features (physical assets) should be prepared for Streets, Parks, Facilities, Urban Forestry, and Fleet. In some cases, this asset information has been collected recently: Urban Forestry has an inventory of street and park trees. Others, such as Parks, have little asset information available.
- Maintenance management is based upon work activities. Work activities should be defined for the significant activities representing the maintenance work to be performed. Definitions shall include and 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.
- The resources needed to accomplish the annual work program should be documented. By organizing the labor, equipment and material resources, ~~counties~~ cities can ensure that planned maintenance can be accomplished with the available budget. Preparation of an annual work calendar and a monthly distribution of work can help document resource needs.
- Formal 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.
- GIS Integration. 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 city councils and the public.
- Finding asset location is faster and easier with the help of a map.

The basic flow of this maintenance plan is presented in the chart below.



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

3. A COMPLETE INVENTORY OF WORK ACTIVITIES PERFORMED BY THE PUBLIC WORKS DEPARTMENT IN THE MAINTENANCE OF INFRASTRUCTURE ASSETS SHOULD BE DEFINED.

Different employees can interpret and define work activities differently. One employee can interpret work that the employee performs as pothole patching, while another interprets the work as base repair. Differences in interpretation can result in unreliable data within the maintenance management system.

It is essential that work activities be defined consistently. This requires the development of complete descriptions of maintenance activities... the what, where, when, why, how and how much of maintenance activities.

The Public Works Director should assign staff, as appropriate, to work with the first-line supervisors of the Urban Forestry, Street Maintenance, Park Maintenance, and Facilities Maintenance Divisions to define the work activities performed by their Divisions.

The supervisors need only assure that all of the primary work activities (i.e., pothole patching, crack sealing, base repair, sign replacement, street sweeping, rain patrol, etc.) that consume the majority of staff work hours are defined.

This would include all forms of leave. All 2,080 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 all staff in a Division. Each of these work activities should define the unit of measure. An example of a work activity and unit of measure are provided below.

Work Activity	Activity Description	Unit of Measure
Traffic Signal Cabinet Maintenance	Cabinet maintenance includes the inspection, testing, cleaning and adjustments made to the traffic signal electronic equipment cabinet	Traffic Signal Cabinets

A complete list of work activities should encompass about 90% of the workload. This typically involves the top 20 to 30 activities in each Division (i.e., Urban Forestry, Street Maintenance, etc.). The remaining 10% of the work includes a large number of

miscellaneous activities, which may be defined as a group under an "other" or "miscellaneous" category.

Recommendation #12: The Public Works Director should assign staff, as appropriate, to work with the first-line supervisors of the Urban Forestry, Street Maintenance, Park Maintenance, and Facilities Maintenance Divisions to define the work activities performed by their Divisions including the activity, the activity description, and the unit of measure.

4. THE PUBLIC WORKS DEPARTMENT SHOULD DEFINE THE LEVELS OF SERVICE TO BE PROVIDED IN MAINTAINING ASSETS.

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:

- Base repair 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 need to be expressed as quantitative standards as well. For example, a service level for cleaning of drain inlets could be the annual inspection and cleaning.

The service level standards could be expressed as historical annual averages for such work activities as responding to service requests.

The Public Works Director should assign staff, as appropriate, to work with the

first-line supervisors of the Urban Forestry, Street Maintenance, Park Maintenance, and Facilities Maintenance Divisions to define the service level standards for the work activities performed by the Department.

Recommendation #13: The Public Works Director should assign staff, as appropriate, to work with the first-line supervisors of the Urban Forestry, Street Maintenance, Park Maintenance, and Facilities Maintenance Divisions to define the service level standards for the work activities performed by the Department.

5. THE PUBLIC WORKS DEPARTMENT SHOULD DEVELOP PERFORMANCE STANDARDS FOR EACH WORK ACTIVITY.

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 traffic signal cabinet maintenance).

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 elements as noted below.

- 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.

Public Works Director should assign staff, as appropriate, to work with the first-line supervisors of the Urban Forestry, Street Maintenance, Park Maintenance, and Facilities Maintenance Divisions to develop performance standards for the work activities performed by the Department.

Recommendation #14: The Public Works Director ~~Department~~ should assign staff, as appropriate, to work with the first-line supervisors of the Urban Forestry, Street Maintenance, Park Maintenance, and Facilities Maintenance Divisions to develop performance standards for the work activities performed by the Department.

6. THE PUBLIC WORKS DEPARTMENT SHOULD DEVELOP AN ANNUAL WORK PROGRAM AND CALENDAR.

An annual work program is really nothing more than activity-based costing for the various work activities in Urban Forestry, Street Maintenance, Park Maintenance, and Facilities Maintenance Divisions.

The development of an annual work program would enable the Public Works Department to accomplish a best practice defined by the *American Public Works Association* in its *Management Practices Self-Assessment*. Management Practice 4.5 states “a system is established to determine the cost of providing individual services or service levels. Costs are generally categorized into capital, operations, and maintenance. Identifying a unit cost of service is essential to guide the allocation of resources and project workloads. Cost of service should be based on full-cost allocation including general overhead and administrative expenses.”

Exhibit 1

Sample Performance Standard

ACTIVITY NO:	ACTIVITY NAME:	DATE:
101	Cabinet Maintenance	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 or	1 Van
Conflict monitor tester	compressed air bottle	

MATERIAL:

Non-conductive bug spray	Timing sheets	Checklists

PRODUCTION STANDARDS:

◆ Unit Of Measurement:	Cabinets
◆ Average Daily Production:	8
◆ Man Hours Per Work Unit:	1.0

An annual work program does not need to tie to the City's annual operating budget. It should be based upon the costs within the annual budget, however.

The annual work program is designed to answer questions that cannot be answered based upon the information readily available in the City's line-item budget. For example, how much does the City spend on street sweeping annually? What is the cost per curb mile swept? How many curb miles were swept in fiscal year 2010-11? What would it cost to increase the level of service for residential street sweeping to twice a month? These are questions that are difficult to answer with a line-item budget. These are questions that are easy to answer with an annual work program that uses activity-based costing.

To develop an annual work program, the Department should first develop unit costs 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 performance standard developed to determine the average daily cost for performing each activity. With the inventory, standards, and unit costs in hand, the annual work program may be determined. 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 program 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 materials 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 development of this annual work plan will fundamentally change the focus of managers and supervisors in the Department from their current roles of day-to-day supervision to that of management of resources in order to ensure conformance with the annual work plans. The Department should develop the annual work program and report on the planned and accomplished work on a monthly and annual basis using EnerGov.

A sample of an annual work program is presented in the exhibit following this page. It presents a partial annual work program for Street Maintenance.

Recommendation #15: The Public Works Director should assign staff, as appropriate, to work with the first-line supervisors of the Urban Forestry, Street Maintenance, Park Maintenance, and Facilities Maintenance Divisions and with the Information Technology Division to develop an annual work program for each Division, and to develop reporting systems to report budget to actual.

7. THE PUBLIC WORKS DEPARTMENT SHOULD DEVELOP FORMAL WORK PLANNING AND SCHEDULING SYSTEMS.

This task would involve the development of formal work scheduling systems for the Urban Forestry, Street Maintenance, Park Maintenance, and Facilities Maintenance Divisions.

After the annual work program and budget is approved, managers and supervisors 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. If activities such as storm damage repairs and cleanup turn out to be greater than planned, the work program will have to be adjusted.

To ensure that field crews perform only the authorized work, work-orders should typically be ~~are~~ prepared by the first-line supervisor in the Urban Forestry, Street Maintenance, Park Maintenance, and Facilities Maintenance Divisions to authorize work on a day-to- day basis. Each work order should authorize a crew to perform a specific amount of work on a specific activity.

Exhibit 2

**Sample Annual Work Program for
Street Maintenance**

Work Activity	Inventory Quantity	Inventory Unit	Annual Work Quantity	Annual Work Unit	ADP*	ADP Unit*	Annual Crew Days	Crew Size	Annual Labor Days	Annual Labor \$	Annual Equip. \$	Annual Material \$	Annual Total \$
Vacation	2,200	Labor Hour	2,200	Labor Hour	24	Labor Hour	91.7	3	275	\$68,750	\$0	\$0	\$68,750
Other Time Off	800	Labor Hour	800	Labor Hour	32	Labor Hour	25	4	100	\$25,000	\$0	\$0	\$25,000
Sick	800	Labor Hour	800	Labor Hour	28.5	Labor Hour	28.1	3.6	101.1	\$25,263	\$0	\$0	\$25,263
Meetings /Training	850	Labor Hour	850	Labor Hour	30	Labor Hour	28.3	3.7	104.8	\$26,208	\$1,784	\$0	\$27,992
Program Totals									580.9	\$145,221	\$1,784	\$0	\$147,005
Pothole Patching	420	Lane Mile	252	Tons	2.8	Tons	90	2	180	\$45,000	\$19,008	\$19,548	\$83,556
Remove/ Replace Base	420	Lane Mile	2,520	Sq. Yds	62.5	Sq. Yds	40.3	3	121	\$30,240	\$13,862	\$10,777	\$54,879
Skin Patching	420	Lane Mile	23,100	Sq. Yds	218	Sq. Yds	106	3	317.9	\$79,472	\$59,315	\$52,830	\$191,617
Crack Sealing	420	Lane Mile	2,100	Lbs. Sealant	350	Lbs. Sealant	6	3	18	\$4,500	\$3,586	\$1,775	\$9,861
Program Totals									636.8	\$159,212	\$95,771	\$84,930	\$339,913

* ADP represents average daily productivity

The preparation of these bi-weekly schedules and work orders should be accomplished within EnerGov. The Public Works Director should assign staff, as appropriate, to work with the first-line supervisor in the Urban Forestry, Street Maintenance, Park Maintenance, and Facilities Maintenance Divisions and with the Information Technology Division to develop and deploy the formal work planning and scheduling systems within the EnerGov Asset Management Suite.

Recommendation #16: The Public Works Director should assign staff, as appropriate, to work with the first-line supervisors of the Urban Forestry, Street Maintenance, Park Maintenance, and Facilities Maintenance Divisions and with the Information Technology Division to develop and deploy formal work planning and scheduling systems in the Urban Forestry, Street Maintenance, Park Maintenance, and Facilities Maintenance Divisions using the EnerGov Asset Management Suite.

8. THE PUBLIC WORKS DEPARTMENT SHOULD DEVELOP A MONTHLY PERFORMANCE REPORT USING INFORMATION CONTAINED WITHIN THE ENERGOV ASSET MANAGEMENT SUITE.

This last step in the deployment of the maintenance management system 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 first-line supervisors of the Urban Forestry, Street Maintenance, Park Maintenance, and Facilities Maintenance Divisions 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 would be developed in the EnerGov Asset Management Suite to summarize the daily work reports on a monthly basis and produce performance reports. An example of a monthly report is provided in the exhibit following this page.

These monthly reports should be used to evaluate the performance of the Urban Forestry, Street Maintenance, Park Maintenance, and Facilities Maintenance Divisions, and monitor progress toward accomplishing the annual work program for each Division. Again, significant deviations from the planned work program and budget should be investigated and appropriate follow-up action taken. 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 #17: The Public Works Director should assign staff, as appropriate, to work with the first-line supervisors of the Urban Forestry, Street Maintenance, Park Maintenance, and Facilities Maintenance Divisions and with the Information Technology Division to develop and deploy a monthly performance report comparing planned versus actual performance and costs. This monthly report should be developed using the EnerGov Asset Management Suite.

Exhibit 3

**Sample Monthly
Performance Report**

Year-to-Date Work Progress Report for Street Maintenance
Period: July 1, 2010 – July 30, 2010

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
Base Repair	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

9. THE PUBLIC WORKS DEPARTMENT SHOULD ACQUIRE HANDHELD DEVICES TO ENABLE CREWS TO REPORT THE WORK ACCOMPLISHED.

Tracking the work accomplished is another important part of an effective maintenance management system. This is unfortunately, a time intensive task given the number of staff involved. Handheld devices can, however, diminish the time and resources required. While the Department has had varying degrees of experience with handheld devices, the technology has evolved, and the use of handheld devices is a common practice in instances in which a computerized maintenance management system has been deployed.

With handheld devices, the staff of the Urban Forestry, Street Maintenance, Park Maintenance, and Facilities Maintenance Divisions can become mobile, and paperless. This will ensure the ability to manage work orders and other data electronically and synchronize on demand or automatically on a periodic basis via a wireless network. If the handheld device has scanning capability, the bar coding function could increase accuracy and productivity even further by scanning bar codes on building equipment or to scan labor, material and equipment codes to eliminate manual data entry. Other features and functionality of these handheld devices include the following:

- Download/upload assigned work orders with priority;
- Track the time worked on an assignment using an automatic start and stop feature;
- Transfer completed work order information (comments, labor, material, other charges) to the EnerGov database directly from the handheld device;
- Update lookup data on the handheld device;
- Create new inventory records for areas and equipment on the handheld device, and transfer this data directly to the EnerGov database;

- Create new work orders from the handheld device while performing facility inspections;
- Conduct inventories and update the parts records from the handheld device directly to the EnerGov database;
- Issue parts and upload all data from the handheld device at the end of the day;
- Increase efficiency and accuracy utilizing bar coding technology that quickly scans bar codes representing parks, golf courses, or physical assets;
- Display preventive maintenance task sheets on the handheld device; and
- Use a detailed preventive maintenance checklist and record the results directly on the handheld device.

When considering hardware options that can increase system efficiency, wireless technology is an area to consider.

An estimated twenty-one laptops or handheld devices would be required: ten for Parks, four for Trees, three for Streets, and four for Facilities. The estimated one-time cost of these handheld devices is presented in the table below.

Recommendation	One-Time Capital Outlay
Acquire twenty-one laptops or handheld devices as field-based data entry devices for the CMMS: ten for Parks, four for Trees, three for Streets, and four for Facilities	\$84,000

Recommendation #18: The Public Works Director should assign staff, as appropriate, to consult with the first-line supervisors of the Urban Forestry, Street Maintenance, Park Maintenance, and Facilities Maintenance Divisions and with the Information Technology Division to develop a budget proposal for fiscal year 2011-12 to acquire and deploy handheld data entry devices.

10. GIS SHOULD BE LINKED TO THE ENERGGOV ASSET MANAGEMENT SUITE AND UTILIZED TO UPDATE THE ASSET INVENTORY AND ANALYZE AND ENHANCE THE MANAGEMENT OF THE WORK CONDUCTED BY THE PUBLIC WORKS DEPARTMENT.

A critical component of successful Public Works Department's maintenance management system is accurate and complete inventory data.

The maintenance crews of the Public Works Department go out into the field and have the opportunity to identify necessary changes or additions to the asset inventory such as missing drain inlets, missing signs, missing street trees, etc. If these changes and additions are not reported back and corrected within the EnerGov Asset Management Suite, GIS layers and the EnerGov Asset Management Suite will be missing pertinent data or contain erroneous data and quickly become out-of-date. Staff of the Urban Forestry, Street Maintenance, Park Maintenance, and Facilities Maintenance Divisions will not know what data is accurate and what is not. Therefore, data sets can become suspect and staff may begin to doubt the usefulness and reliability of the EnerGov Asset Management Suite.

The solution to this problem is a GIS-based maintenance management system such as EnerGov and formal written procedures for these staff to update and correct inventory data given their upon field observations.

The Public Works Department field crews in the Urban Forestry, Street Maintenance, Park Maintenance, and Facilities Maintenance Divisions should mark any inventory changes or additions to the system on the work order. Once the job was complete, the field crew should return the work order with changes back to City GIS staff for input into ESRI databases and for update of appropriate data layers.

Recommendation #19: The Public Works Director should assign staff, as appropriate, to consult with the first-line supervisors of the Urban Forestry, Street Maintenance, Park Maintenance, and Facilities Maintenance Divisions and the GIS Supervisor to develop a formal written policy and procedure for the crews of these Divisions to update asset inventories.

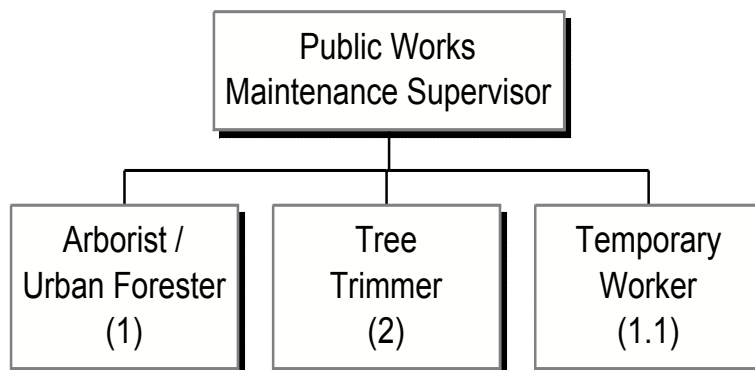
4. URBAN FORESTRY DIVISION

This chapter presents an analysis of the Urban Forestry Division including the level of service provided by the Division, the level of staffing, maintenance management systems, and the organizational structure of the Division.

1. THE URBAN FORESTRY DIVISION IS AUTHORIZED FOUR (4) FULL-TIME STAFF AND A LITTLE MORE THAN ONE (1) FULL-TIME EQUIVALENT TEMPORARY STAFF.

The Urban Forestry Division is responsible for the management and maintenance of all of the City's park and street trees including the care and maintenance of approximately 17,800 street and park trees. This includes the use of contractors and in-house staff for tree care, administration of the tree planting program, scheduling of City tree pruning within the right-of-way and in City parks and open spaces, and emergency response in inclement weather and emergency situations as required.

A total of four (4) full-time positions and a little more than one (1.1) full-time equivalent temporary positions are authorized for urban forestry as depicted in the chart below. In addition, a total of \$22,100 is authorized for contract services.



The total FY 2010-11 budget for urban forestry in San Luis Obispo is presented

in the table below.

Budget Category	Budget \$	% of Total
Staffing	\$437,900	92.75%
Contracting Services	\$16,735	3.54%
Other Operating Expenditures	\$17,497	3.71%
TOTAL	\$472,132	100.00%

* This budgetary information was provided by the Public Works Department on February 25, 2011.

With a 2010 population of 44,948, this budget indicates that the City is budgeting \$10.50 per capita for urban forestry on an annual basis. The Public Works Maintenance Supervisor allocates an estimated one-third of his work hours to activities other than urban forestry. Removing one-third of his salary and benefits from the budget for Urban Forestry would reduce the budget per capita for urban forestry to \$9.78.

Overall, the urban forestry expenditures per capita in San Luis Obispo exceed that required to be recognized as a Tree City USA: at least \$2 per capita. The expenditures per capita in San Luis Obispo are higher than some other comparably sized cities such as Dublin, Rancho Palos Verde, and Cypress, but less or somewhat less than some others including Lompoc, San Ramon, Cerritos, and Davis.

However, the *Center for Urban Forest Research, United States Department of Agriculture Forest Service, Pacific Southwest Research Station*, in a municipal forest resource analysis of 18 cities (Berkeley, California; Boise, Idaho; Indianapolis, Indiana; Orlando, Florida; Minneapolis, Minnesota; Charlotte, North Carolina; Charleston, South Carolina; etc.) found that these cities were typically spending an average of \$25 per tree. San Luis Obispo budgeted approximately \$25 per tree in fiscal year 2010-11 (excluding one-third of the Public Works Maintenance Supervisor's salary and fringe benefits).

The City has 0.38 trees in the right-of-way per capita (excluding trees in parks, in

bike paths, and located on City facilities). This is the same amount of trees in the right-of-way reported in a study of twenty-two (22) other cities. Overall, San Luis Obispo would appear to be a well-forested city.

2. THERE ARE A NUMBER OF POSITIVE ASPECTS TO URBAN FORESTRY SERVICES.

The diagnostic appraisal of the Public Works Department identified a number of positive characteristics to the delivery of urban forestry services. Examples of these positive characteristics are presented below.

- An urban forestry policy has been adopted by the City Council.
- The City is a Tree City USA recipient for 27 years as well as has won 2 International Society of Arboriculture (ISA) Gold Leaf Awards.
- A tree ordinance has been adopted and was updated in 2010.
- A street tree inventory was completed in July 2010 using ArborPro.
- Staff are ISA certified arborists.
- The Division uses aerial towers and brush chippers to enhance its efficiency.

These are examples of positive characteristics.

3. ANALYSIS OF ORGANIZATIONAL STRUCTURE

The fundamental questions in evaluating organizational structure are the efficiency of the plan of organization, the responsibility and accountability of managers and supervisors. The intent is to ensure the following:

- **The organizational structure fosters accountability.** The organizational structure fosters accountability among management and supervisory staff.
- **The plan of organization enhances communication and coordination.** The number of handoffs/exchanges required among staff providing service to the public or internal clients is minimized.

- **Management and supervisory resources are utilized efficiently.** The plan of organization minimizes administrative overhead.
- **The span of control for any manager or supervisor is not more or less than 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.

These principles were utilized in evaluating the organizational structure of the Urban Forestry Division.

(1) The Public Works Maintenance Supervisor Position Should Be Eliminated Through Attrition.

Why should an organization be concerned about managerial layers and spans of control. The City of San Luis Obispo has been challenged fiscally over the past several years to provide a responsive government at a lower cost. As noted in the General Fund Five-Year Fiscal Forecast presented to the Council in October 2010, the City is facing a long-term structural budget gap between revenues and expenditures for the foreseeable future unless corrective action is taken. One of the most effective ways to meet these challenges is to streamline organizational structure through increased spans of control.

At the present time, a Public Works Maintenance Supervisor supervises ~~an~~ one (1) Arborist / Urban Forester, two (2) Tree Trimmers and a little more than one (1.1) full-time equivalent temporary workers in the Urban Forestry Division.

The duties of the Public Works Maintenance Supervisor, reflected in the profile of the Department that was reviewed and corrected by the Department, includes providing oversight of the street tree and park tree maintenance programs and varied park-related contract services. The Public Works Maintenance Supervisor supervises staff of the Division, responds to public complaints, performs grant writing, and assists with recreation-based special events in park facilities. The Public Works Maintenance

Supervisor is responsible for coordinating overall Division budget and programs including coordinating various park-based contract services comprising restroom cleaning, landscape services provided to sound walls, median strips, and various other landscape facilities, sidewalk power wash cleaning, stump removal and stump grinding, and railroad center right-of-way maintenance. The Public Works Maintenance Supervisor also acts as staff liaison for the Tree Committee, and performs other services such as development review, code enforcement, and coordinates volunteer labor and community service resources.

Management literature identifies various factors that cause span of control to differ among supervisors and in different organizations. For example, narrower spans of control are appropriate when the nature of work performed is complex, when organizational objectives are unclear, when tasks are uncertain, or risks are high. The chart, below, presents some of the factors that should be considered in evaluating spans of control.

Factor	Narrower Span of Control	Wider Span of Control
Nature of Work	Complex	Not Complex
Similarity of activities performed	Different	Similar
Clarity of organizational objectives	Not Clear	Clear
Degree of task certainty	Fuzzy	Definite Rules
Degree of risk in the work for the organization	High	Low
Degree of public scrutiny	High	Low
Supervisor's qualifications and experience	Weak	Strong
Burden of non-supervisory duties	Heavy	Light
Degree of coordination required	High	Low
Availability of staff assistance	None	Abundant
Qualifications and experience of subordinates	Weak	Strong
Geographic location of subordinates	Dispersed	Together

There are a number of factors in the Urban Forestry Division that argue for a wide and for a narrow span of control for the first-line supervisor as noted below.

- **Wide span of control.** Those factors that suggest a wider span of control is possible include:
 - The nature of the work performed by the staff of the Urban Forestry Division is less complex than other aspects of the Public Works Department i.e., Engineering capital project design,
 - The activities performed are similar,
 - The organizational objectives are clear,
 - There are definite rules for the tasks performed by the staff of the Division,
 - The qualifications and experience of the Arborist / Urban Forester and the Tree Trimmers are strong,
 - The degree of coordination required is low, and
 - The geographic location of the staff of the Division is together – at the corporation yard.
- **Narrow span of control.** On the other hand, there are factors that suggest the narrow span of control should be continued. These include the risk of the work for the organization, the degree of public scrutiny, the burden of the non-supervisory duties performed by the Public Works Maintenance Supervisor, and the lack of staff assistance for the Division. The Public Works Maintenance Supervisor is responsible for a number of non-supervisory duties including include restroom cleaning, landscape services provided to sound walls, median strips, and various other locales, sidewalk power wash cleaning, stump removal and stump grinding, ~~and~~ railroad center ROW maintenance, etc.

A tall, narrow span of control, such as that found in the Urban Forestry Division, is thought to create slower decisions and sometimes hamper an organization's ability to compete. Narrow spans of control may be most appropriate in highly technical or specialized areas that require close supervision.

A wider, flatter configuration means fewer layers of reporting and more subordinates reporting to a supervisor. Wider and flatter organizations tend to have faster decision-making, and improved communication, motivation and morale. Spans of control that are too wide can also create problems such as inconsistent performance and inadequate supervision.

The Matrix Consulting Group utilizes span of control guidelines to shape the discussion and development of recommendations regarding spans of control and

management / supervisory layers. These guidelines were developed based upon the research and analysis conducted by a number of other cities and counties that were evaluating the number of management layers and the spans of control in their organizations. These include such cities and counties as Portland, Oregon; King County, Washington; Seattle, Washington; Kansas City, Missouri; etc.

These guidelines recognize situational differences in terms of departmental size, task complexity, etc. The guidelines, for a department such as the Public Works Department with 50 to 150 employees, suggest that not more than four layers of managers and supervisors are appropriate, and that the span of control for the ratio of first-line supervisors to non-supervisors assigned to maintenance should not be lower than 1 to 10 or higher than 1 to 20.

As these guidelines apply to the Urban Forestry Division, there are three ~~four~~ management and supervisory layers: The Public Works Director, the Deputy Director (City Engineer), and the Public Works Maintenance Supervisor. However, the span of control for the Public Works Maintenance Supervisor is four (4), far less than the minimum guideline of 1 to 10.

The Public Works Maintenance Supervisor position should be eliminated through attrition. The responsibility for the supervision of contracts regarding restroom cleaning, landscape services provided to sound walls, median strips, and various other locales, sidewalk power wash cleaning, stump removal and stump grinding, and railroad center right-of-way maintenance should be reassigned to the Park Maintenance Supervisor.

Also of note, the Public Works Maintenance Supervisor does not allocate much in the way of staff hours to responding to service requests. In the time period from July

1, 2010 through December 6, 2010, the Public Works Maintenance Supervisor allocated 17.5 staff hours to responding to service requests. On the other hand, the Arborist / Urban Forester allocated 207.15 staff hours to responding to service requests from July 1, 2010 through December 6, 2010. This conclusion is based upon information provided by the Public Works Department.

The vehicle assigned to this Public Works Maintenance Supervisor should be eliminated at the same as this position.

The cost impact of this recommendation, in terms of salaries and fringe benefits at the top step of the salary range, is presented in the table below.

Recommendation	Annual Cost Savings
The Public Works Maintenance Supervisor position in the Urban Forestry Division should be eliminated through attrition.	\$111,700
The vehicle assigned to this Public Works Maintenance Supervisor should be eliminated at the same as this position.	\$3,000

Recommendation #20: The Public Works Maintenance Supervisor position in the Urban Forestry Division should be eliminated through attrition. The vehicle assigned to this Public Works Maintenance Supervisor should be eliminated at the same time as this position.

(2) The Responsibility for Supervision of Urban Forestry Should be Assigned to the Arborist / Urban Forester.

The Matrix Consulting Group interviewed the Public Works Maintenance Supervisor and the Arborist / Urban Forester. After a careful review and consideration of the urban forestry responsibilities and workload of each of these two positions, it is apparent that the Arborist / Urban Forester position is already fulfilling a central role in the City's Urban Forestry Division. The roles and responsibilities of the position, based upon the corrected profile received from the Department, include the following:

- Field oversight to the Tree Trimmers, temporary staff, and contract trimmers;

- Responding to service requests;
- Providing field supervision / inspection for the stump removal program;
- Coordinating line-of-sight and street lighting clearance;
- Coordinating responses to street tree planting and removal requests;
- Completing development review as it pertains to street trees;
- Completing vegetation abatement noticing for private properties; and
- Providing staff support for the Tree Committee as the City Arborist, and performs other duties as assigned.

The position, as noted in the corrected profile provided by the Department, already provides field supervision of the Tree Trimmers, temporary staff, and contract trimmers. The job description for the position states that the position “monitors and directs the work of skilled, semi-skilled, and unskilled staff, community service workers, volunteers, and contract services related to the Urban Forest.”

The Arborist / Urban Forester should be assigned responsibility for the supervision of the City’s Urban Forestry Division.

Another Tree City USA – Davis – with a large and well managed urban forest – 35,000 street, park, and greenbelt trees – operates with one Urban Forestry Supervisor and a 2-person service request crew. (Davis has relied extensively in the past on contract tree trimming.) This is the same model recommended for San Luis Obispo by the consulting team.

The compensation of the Arborist / Urban Forester position should be adjusted to reflect these new responsibilities. The possible cost impact of this adjustment is presented in the table below.

Recommendation	Annual Cost Increase
The Arborist / Urban Forester should be assigned responsibility for the supervision of the City's Urban Forestry Division. The compensation of the position should be adjusted to reflect these new responsibilities.	\$12,800

Recommendation #21: The Arborist / Urban Forester should be assigned responsibility for the supervision of the City's Urban Forestry Division. The compensation of the position should be adjusted to reflect these new responsibilities.

2. ANALYSIS OF STAFFING

This section of the chapter provides an analysis of the workload and staffing levels of the Urban Forestry Division including outsourcing of these services.

In conducting this analysis, the project team utilized best practices found in other cities and its own experience in analyzing urban forestry practices in cities for over thirty (30) years, the best practices cities by other urban forestry consultants, and the practices of other cities with well managed urban forests.

The project team could not rely on best practices of the International Society of Arboriculture or of the Society of Municipal Arborists. These professional organizations have developed best practices that include the accreditation of staff, the development of urban forestry master plans, the incorporation of ANSI A300 tree care performance standards, the incorporation of ANSI Z133.1 safety standards, etc. These professional associations have not developed best practices for the crew sizes that should be utilized, the overall levels of staffing that should be provided, etc.

(1) A Two-Person Crew Should Typically Be Utilized For Responding To Service Requests And Block-By-Block Trimming.

Why should a department be concerned with the size of a crew utilized for the performance of work activities?

When crew size is increased beyond workload requirements, efficiency is lost. Particularly for crews that respond to service requests, a significant amount of unproductive time is spent travelling from one job site to another.

The Urban Forestry Division frequently uses a three-person crew to respond to service requests and for block-by-block trimming. The two (2) Tree Trimmers and one (1) of the two (2) temporary staff are typically assigned to this crew.

The Division should conduct low limb and mature tree pruning with one 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.³ A 3-person crew should only be utilized when additional vehicular or pedestrian traffic control is required on arterial streets or the Downtown core. Traffic control for any operation is best addressed with unskilled labor.

The source of this best practice was not the City of Sacramento. The source of this best practice was a best practices analysis conducted for that City's tree maintenance program by a consulting firm retained by that City: Robert L. Tate and Associates. Robert L. Tate was the 2008 President of the International Society of Arboriculture, served on the United States Department of Agriculture National Urban and Community Forestry Advisory Council, served as an Assistant Professor of Forestry at Cook College / Rutgers University, is a certified arborist and a certified utility specialist, and managed the Municipal / Urban Forestry Division for Asplundh Expert Tree Company.

³ Robert L. Tate and Associates, Inc. Sacramento Tree Services Best Management Practices Review and Report, November 2003.

Other cities have defined a 2-person crew size as a best practice. The City of Olympia, Washington, in their *Urban Forestry Master Plan*, stated that the crew size that should be utilized was 2 to 3 persons depending on the traffic control requirements.⁴ Arterial streets would likely require traffic control. Residential streets would not. The City of Davis also utilizes a 2-person tree trimming crew, for example. Bids that have been reviewed recently by the project team indicate that the crew size utilized for service requests and block-by-block tree trimming are 2-persons.

The impact of using larger crew sizes than appropriate is significant. The third person typically assigned to the tree trimming crew could be utilized for pruning young trees and for watering young trees. The impact of reducing a crew size will 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 standard crew size utilized for responding to service requests involving low limb and mature tree pruning and for block-by-block trimming on residential streets. On arterial streets, a 3-person crew should be utilized if additional traffic control is utilized.

Recommendation #22: The Urban Forestry Division should utilize a 2-person crew for tree trimming on residential streets. On arterial streets, a 3-person crew should be utilized if additional traffic control is utilized. This crew should work on clearing obstructions to traffic devices, streetlights, responding to service requests and low-limb work, and block-by-block tree trimming.

⁴ City of Olympia, Washington, City of Olympia Master Street Tree Plan 2001-2011.

(2) The Two Temporary Tree Maintenance Worker Positions Should Be Converted To One (1) Full-Time Tree Trimmer 1 Position.

The Urban Forestry Division uses two temporary workers. In fiscal year 2009-10, one of the temporary workers worked 1,863 hours, while the other worked 794 hours. This amounts to a total of 2,657 work hours or 1.28 full-time equivalent staff.

These two temporary workers are utilized for support of the urban forestry program by functioning as the third member of the service request crew (working with the two Tree Trimmers), trimming trees that can be trimmed from the ground, watering young trees with a tanker truck six months of the year, etc. Equally as important, the two (2) Tree Trimmers cannot operate the aerial tower and brush chipper when either of them are on leave. A two-person crew is required. When either of the two Tree Trimmers is on leave, a temporary worker replaces the Tree Trimmer on leave to enable that crew to continue to respond to service requests or to provide block-by-block tree trimming.

The two temporary worker positions should be converted to one (1) full-time Tree Trimmer 1 position. In fiscal year 2009-10, the Division's costs for these two temporary workers amounted to \$42,500. The "net" annual cost impact of this recommendation is presented in the table below.

There are a number existing vehicles in the fleet assigned to the Urban Forestry Division that can be assigned to this new position including two (2) pickup trucks, and one (1) water truck.

Recommendation	"Net" Annual Cost Increase
The two temporary tree maintenance workers positions should be converted to one (1) full-time Tree Trimmer 1 position.	\$27,000

Recommendation #23: The two temporary tree maintenance worker positions should be converted to one (1) full-time Tree Trimmer 1 position.

(3) The Work of the Urban Forestry Division Should Be Supplemented by Contractual Tree Trimming.

However, even with the addition of the third Tree Trimmer and enhanced management of the two Tree Trimmers on block-by-block tree trimming, the City does not have sufficient resources to provide an effective and responsive full pruning cycle. The work performed by these in-house staff should be complemented by contract tree trimming for block-by-block tree trimming. The contractor would be required to trim approximately 900 to 1,000 street and park trees annually.

Given the costs of tree trimming bid by the contractor and the costs of City staff, the City should not insource all block-by-block tree trimming. It should continue to utilize contractors for much of this work given the unit price advantages. However, this will require a higher funding level for contract services than is currently allocated.

The estimated annual cost for the contractual tree trimming is presented in the table below.

Recommendation	Annual Cost Increase
The Public Works Department should contract for block-by-block tree trimming and park tree trimming of 900 to 1,000 trees annually to supplement the work of its own Tree Trimmers.	\$76,000

Recommendation #24: The Public Works Department should contract for block-by-block tree trimming and park tree trimming of 900 to 1,000 trees annually to supplement the work of its own Tree Trimmers.

3. ANALYSIS OF OPERATIONS AND MANAGEMENT

This Division provides the project team's analysis of the opportunities for improvement in the operations and management systems for the Urban Forestry Division.

In conducting this analysis, the project team utilized best practices found in other cities and its own experience in analyzing urban forestry practices in cities for over thirty (30) years, the best practices cities by other urban forestry consultants, and the practices of other cities with well managed urban forests.

The project team could not rely exclusively on best practices propagated by the *International Society of Arboriculture* or the *Society of Municipal Arborists*. These professional organizations have developed best practices that include the accreditation of staff, the development of urban forestry master plans, the incorporation of ANSI A300 tree care performance standards, the incorporation of ANSI Z133.1 safety standards, tree planting, etc. These organizations have not developed best practices for how to efficiently deploy urban forestry crews, the productivity of urban forestry staff, etc.

(1) The Tree Trimmers Should Be Utilized More Effectively For Block-By-Block Tree Trimming, And Their Efforts Supplemented By Contractual Tree Trimming.

The Society of Municipal Arborists (SMA) is the leading professional organization representing municipal arboriculture. The SMA offers a program to provide accreditation to municipal forestry departments. The accreditation program is a non-government voluntary system of self-regulation that sets the standards for municipal arboriculture. Some of the minimum standards established by the SMA include street trees must be

pruned at least once every 8 years, with recommended pruning every 3 years for young trees and every 5 years for older trees.

Cyclical or block-by-block pruning should be the prevailing work practice utilized by the Urban Forestry Division. Block-by-block pruning is performed on several trees along city blocks on a given day and results in a much more efficient method of pruning. Most cities elect to utilize a cyclical pruning program and defer citizen requests until the cyclical program reaches their street. If inspections identify high levels of risk associated with defective limbs or trees, then priority action can be taken. Otherwise the action should be deferred.

There is ample research that demonstrates the cost savings from block-by-block pruning.⁵

Overall, the talents, skills, and workload capacity of the staff of the Urban Forestry Division can be more effectively utilized for block-by-block pruning. The two (2) Tree Trimmers should be focused on providing block-by-block tree trimming and allocated to responding to service requests two days a week (unless an emergency response is required). The recommended third Tree Trimmer should be allocated to trimming young trees that comprise 20% of the City's urban forest (and watering the young trees, responding to service requests that don't require the response of a two-person crew, etc.).

The basis for these findings, conclusions, and recommendations are presented in the paragraphs below. These findings, conclusions, and recommendations are based upon data provided by the City.

⁵ Miller, Robert W. 1997. *Urban forestry. Planning and Managing Urban Greenspaces*. 2nd ed. Upper Saddle River, NJ: Prentice Hall.

- **The two (2) Tree Trimmers allocate approximately 31% of their workdays to responding to service requests.** The table below summarizes the service requests responded to by the Urban Forestry Division during the time period from July 1, 2010 to February 24, 2011.*

Service Request Type	# of Service Requests	Employee Hours
Tree Down	14	36.0
Sidewalk Obstruction	18	30.0
Abatement Notice	13	7.0
Tree Removal Application	195	155.0
Commemorative Tree	9	17.0
Tree Well	2	8.5
Trimming Request	159	792.5
Illegal Tree Removal	12	17.0
Site Visits	33	42.5
Branch Down / Pickup	43	141.6
Damaged / Injured Tree	71	225.7
Planting Request	6	9.0
Blue Card Signoff	33	28.0
Stump Removal	10	37.0
Permit	11	5.5
Wants Information	38	28.8
Banners	35	133.0
Branch Hanging in Tree	6	25.0
Vandalized Tree	3	3.0
Tree Trunk Girdled	1	1.5
Project Review	20	21.5
Diseased Tree	9	35.0
Palm Fronds Down	1	3.0
TOTAL	742	1,803.01

* This information was provided by the Department on February 25, 2011 from the 'Bonnie' service request program.

The two Tree Trimmers provided 31% of the staff hours in response to the service requests, or 786.15 staff hours over an approximate thirty-one week period.

Overall, the two Tree Trimmers allocated approximately 31% of their work hours to service requests during this approximate twenty-two week period. This is equivalent to a little less than two workdays a week (1.6 workdays).

- **The two (2) Tree Trimmers full pruned or clearance trimmed 51 trees a month in the first quarter of fiscal year 2010-11.** During the time period from July 1, 2010 to September 30, 2010, the two Tree Trimmers full pruned or clearance pruned 153 trees or approximately 51 trees per month. Important

points to note regarding the work activities of the Tree Trimmers during this three-month period are presented below.⁶

- In July, the two Tree Trimmers allocated seven (7) workdays to full pruning or clearance pruning trees as noted below.
 - On July 1st, the crew pruned one (1) tree;
 - On July 9th, the crew pruned seven (7) trees;
 - On July 13th, the crew pruned twelve (12) trees;
 - On July 14th, the crew pruned five (5) trees;
 - On July 15th, the crew pruned four (4) trees;
 - On July 22nd, the crew pruned four (4) trees; and
 - On July 27th, the crew trimmed sixteen (16) trees.
- In August, the two Tree Trimmers allocated eight (8) workdays to full pruning or clearance pruning trees as noted below.
 - On August 2nd, the crew pruned three (3) trees;
 - On August 4th, the crew trimmed three (3) trees;
 - On August 5th, the crew trimmed seventeen (17) trees;
 - On August 10th, the crew trimmed one (1) tree;
 - On August 12th, the crew trimmed seventeen (17) trees;
 - On August 17th, the crew trimmed five (5) trees;
 - On August 18th, the crew trimmed three (3) trees; and
 - On August 19th, the crew trimmed two (2) trees.
- In September, the two Tree Trimmers allocated thirteen (13) workdays to full pruning or clearance pruning trees as noted below.
 - On September 1st, the crew trimmed four (4) trees;
 - On September 2nd, the crew trimmed five (5) trees;
 - On September 6th, the crew trimmed five (5) trees;
 - On September 7th, the crew trimmed six (6) trees;
 - On September 8th, the crew trimmed six (6) trees;
 - On September 9th, the crew trimmed four (4) trees;
 - On September 10th, the crew trimmed two (2) trees;
 - On September 13th, the crew trimmed four (4) trees;
 - On September 16th, the crew trimmed eight (8) trees;
 - On September 27th, the crew trimmed one (1) tree;
 - On September 28th, the crew trimmed three (3) trees; and
 - On September 29th, the crew trimmed two (2) trees.

⁶ This three-months data was the only data available from ArborPro at the time the data was requested by the Matrix Consulting Group. This data was only generated beginning in July 2010. The Department provided this data.

Almost 42% of the trees trimmed during this three-month period were clearance trims, and not full pruning of the tree.

- **The number of trees full pruned or clearance trimmed by the two (2) Tree Trimmers does not meet work output guidelines.** Not all of these workdays should have been fully allocated to trimming trees. For example, on July 1st, August 10th, and September 27th, the crew trimmed 1 tree. Applying productivity guidelines utilized by the Matrix Consulting Group to the trees that were trimmed (that includes parameters for the height and type of trim) indicates that the trees that were trimmed on those days should not have required a full crew day. The same productivity guidelines indicates that work output for other days did not require a full crew day; this includes September 10th, 28th, 29th, August 19th, etc. On some of these days, the crew could have been performing other work activities besides trimming trees. Data is unavailable to determine labor allocation by work activity.

The Matrix Consulting Group acknowledges that this crew performs activities other than tree trimming such as hanging banners, work-related training, safety committees, etc.

The talents and skills of the two (2) Tree Trimmers should be more effectively managed for block-by-block trimming of street and park trees. This tree trimming crew should typically set aside two workdays a week for responding to service requests. The other two or three workdays (depending on the 9 / 80 work week) should be set aside for block-by-block trimming of street and park trees (except for emergency service requests).

In addition, the character of the urban forest suggests that a one-person crew can trim approximately 20% of the street and park trees. Overall, 20% of the urban forest is 10 feet in height or less and have a diameter at breast height of 6 inches or less. These are trees that should be able to be trimmed from the ground using hand tools and a one-person crew. These trees should be trimmed once every three years. There are 3,635 street and park trees that are 10 feet or less. Trimming these trees

every three years should require approximately 557 staff hours annually or approximately fourteen (14) staff weeks. The proposed third Tree Trimmer should be dedicated to the trimming of these young trees. This Tree Trimmer should be capable of trimming 2.2 young trees an hour on the average.

The median height of the street and park trees in the City's urban forest is 20 feet. Overall, 75% of the urban forest is thirty feet in height or less. A frequency distribution of the height of the City's street and park trees is presented in the table below.

Height of Trees	Number of Trees By Range of Height	% of Total
0-5	509.0	2.86%
6-10	3,657.0	20.51%
11-15	2,297.0	12.88%
16-20	2,505.0	14.05%
21-25	1,782.0	10.00%
26-30	2,720.0	15.26%
31-35	1,134.0	6.36%
36-40	1,025.0	5.75%
41-45	542.0	3.04%
46-50	365.0	2.05%
51-55	298.0	1.67%
56-60	230.0	1.29%
61-65	141.0	0.79%
66-70	124.0	0.70%
71-75	121.0	0.68%
76-80	72.0	0.40%
81-85	79.0	0.44%
86-90	68.0	0.38%
91-95	30.0	0.17%
96-100	52.0	0.29%
101-110	52.0	0.29%
111-120	10.0	0.06%
121-130	4.0	0.02%
131-140	9.0	0.05%
141-150	1.0	0.01%
55	17,827.0	100.00%

The Arborist / Urban Forester should establish daily work output expectations for block-by-block tree trimming for the 2-person crew (mature trees) and the 1-person crew (young trees), and for the 2-person crew responding to service requests.

The Matrix Consulting Group recommends that these work output expectations be based upon the diameter at breast height (dbh) of the tree. Examples of the work output expectations recommended by the Matrix Consulting Group are presented below.

- It should require 2.4 staff hours, on average, for a *Tree Care Industry Association* medium class II pruning of a tree that is 12" diameter at breast height (dbh) to 18" at dbh using a 2-person crew.⁷ (The median height of trees with this range of dbh is 28 feet). Almost 19% of the street and park trees in San Luis Obispo had a 12" dbh to 18" at dbh.⁸ This also excludes travel time.
- It should require 1.4 staff hours, on average, for a *Tree Care Industry Association* medium class II pruning of a tree that is 7" dbh to 11" dbh using a 2-person crew. (The median height of trees with this range of dbh is 15 feet). Almost 25% of the street and park trees in San Luis Obispo had a 7" dbh to 11" at dbh.⁹ This also excludes travel time.
- On the other hand, 38% of the street and park trees in San Luis Obispo have a dbh of 6" or less. These trees, with a dbh of 6" or less, should require 0.5 staff hours to trim, on average, using a 1-person crew. (The median height of trees with a dbh of 6" or less is 10 feet).¹⁰ This excludes travel time. This reflects a *Tree Care Industry Association* medium class II pruning of a tree.

The Matrix Consulting Group recommends work output expectations for tree trimming as noted in the table below.

⁷ Medium class II or standard pruning is recommended where aesthetic considerations are secondary to structural integrity and tree health concerns.

⁸ This is based upon tree inventory data provided by the Public Works Department, in a Microsoft Excel spreadsheet entitled Tree Inventory 093010, to the Matrix Consulting Group on November 10, 2010.

⁹ This is based upon tree inventory data provided by the Public Works Department, in a Microsoft Excel spreadsheet entitled Tree Inventory 093010, to the Matrix Consulting Group on November 10, 2010.

¹⁰ This is based upon tree inventory data provided by the Public Works Department, in a Microsoft Excel spreadsheet entitled Tree Inventory 093010, to the Matrix Consulting Group on November 10, 2010.

DBH	Crew Size	Staff Hours Per Tree Trimmed
0" – 6"	1	0.5
7" – 12"	2	1.4
13" – 18"	2	2.4
19" – 24"	2	3.3
25" – 30"	2	3.4
31" – 36"	2	4.4

These expectations are for block-by-block tree trimming and do not include travel time. These work output expectations were developed based upon a study of actual work output for a period of a little more than two and one-half years of a city's urban forestry division.

The Public Works Maintenance Supervisor, in an e-mail to the Deputy Director / City Engineer dated February 24, 2011, indicated that the City's tree trimming crew was trimming 10.3 trees a day, on average.¹¹ It is unrealistic, from the perspective of the Matrix Consulting Group and based on the previously cited work output expectations, to expect that a 2-person tree trimming crew, using an aerial tower and trimming trees on a block-by-block basis, to complete a full prune of 10.3 mature trees per day, on average (or those trees exceeding 6" in dbh).

Recommendation #25: The talents and skills of the two (2) Tree Trimmers should be more effectively managed for block-by-block trimming of street and park trees.

Recommendation #26: This tree trimming crew should typically set aside two workdays a week for responding to service requests. The other two or three workdays should be set aside for block-by-block trimming of street and park trees (except for emergency service requests).

Recommendation #27: A one-person crew should be utilized to trim street and park trees that are 10 feet in height or less and have a diameter at breast height of 6 inches or less. These are trees that should be able to be trimmed from the ground using hand tools. These trees should be trimmed once every three years.

¹¹ E-mail from Keith Pellemeier to Barbara Lynch entitled Tree Reports, dated February 24, 2011.

Recommendation #28: The Arborist / Urban Forester should establish daily work output expectations for block-by-block tree trimming for mature trees with a 2-person crew, tree trimming of young trees with a 1-person crew, and for the 2-person crew responding to service requests.

(3) The Urban Forest Division Should Initiate A Tree Planting Program.

Best management practices for planting have been developed and implemented by measurably successful programs internationally and accepted through published American national Standards Institute and best management practice guides. Best management practices for planting programs should include five major components:

- Identification of appropriate tree stocking/desired canopy cover;
- Selection of the best tree for the site to most effectively achieve the desired design and function;
- Selection of the best quality tree at the nursery or upon delivery at the site from the nursery or contract grower;
- Installation of the tree, including site preparation, tree handling and transport, and planting; and
- Post-planting care to ensure proper establishment.

Best management practice for tree stocking include setting realistic, annual, numerical planting goals or percentage figures defining desired canopy cover. Reasonable, effective planting goals have been studied and identified by international organizations, such as the International Society of Arboriculture and American Forests.

The Urban Forestry Division recently completed an inventory of street and park trees. The inventory identified 1,130 stumps, dead trees, trees in poor condition that should be removed, or vacant spots that needed a street tree.

The Division lacks a formal long-range planting plan that includes annual numerical objectives for tree planting, tree removal, and stump grinding.

The tree planting plan should be developed by the Arborist / Urban Forester. To be most effective, this plan should:

- Segment the City into logical, geographic-based neighborhoods that share similar natural and urban development characteristics;
- Identify the trees that need to be removed, planted, or stumps ground in each neighborhood including the specific locations or street addresses and the specific tree species to be planted at those locations;
- Identify the specific number of trees should be planted each year;
- Identify the costs associated with the removals, planting, or stump grinding.

The tree planting plan should consider:

- Identification of appropriate tree stocking / desired canopy cover;
- Selection of the best tree for the locations or street addresses to most effectively achieve the desired design and function;
- Installation of the tree, including site preparation, tree handling and transport, and planting; and
- Post-planting care to ensure proper establishment.

The tree planting plan should include realistic, annual, numerical planting goals.

The funding required for the implementation of this tree planting plan should be developed as part of the fiscal year 2012-13 recommended budget by the Public Works Department.

Recommendation #29: The Arborist / Urban Forester should develop a tree planting plan to replace stumps, dead trees, and trees in poor condition as identified in the inventory of street and park trees.

Recommendation #30: The funding required for the implementation of this tree planting plan should be developed as part of the fiscal year 2012-13 recommended budget by the Public Works Department.

- (4) Urban Forestry Maintenance Division Should Develop A Tree Planting Plan To Gradually Replace Those Street Trees That Exceed 5% Of The Total Inventory.**

One of the best practices for an urban forest is that no species should be selected and planted such that it causes the total population of that species to exceed five (5) percent. No genera should be selected and planted such that it causes the total population of that genus to exceed ten (10) percent. The exception to this guide is the planting a single tree of a new genera or species in an area with a low tree population.

There are species of trees that exceed 5% of the total trees in the inventory or genus exceeds 10% or whose long-term health and sustainability is questionable (see the table below).

# of Trees	Species of Tree	% of Total
1,098	Eucalyptus	6.16%
527	Ash	2.96%
832	Liquidambar	4.67%
1,699	Coast Live Oak	9.53%

When planting new trees or replacing trees that have been removed, no species should be selected and planted such that it causes the total population of that species to exceed five (5) percent or whose long-term sustainability is questionable. Cities have learned (perhaps not very well) about the risks of over planting of a single species; first with Dutch elm disease and now with emerald ash borer, pitch canker, and sudden oak death syndrome.

In the development of the tree planting plan, the Arborist / Urban Forester should include an element to the plan that would gradually address the City's potential exposure with Eucalyptus, Ash, Liquidambar, and Coast Live Oak species.

Recommendation #31: The Arborist / Urban Forester should include an element to the tree planting plan that would gradually address the City's potential exposure with Eucalyptus, Ash, Liquidambar, and Coast Live Oak species.

(5) The Urban Forestry Division Should Develop And Install A Formal Work Planning And Scheduling System.

The Urban Forestry Division should develop and install a formal work planning and scheduling system.

Planning and scheduling for the work performed by the Division should be a disciplined approach for utilizing its staff resources. This is accomplished through:

- Prioritizing work;
- Developing the physical steps to complete the job;
- Procuring necessary tools and materials;
- Scheduling the work to be done;
- Completing the work; and
- Identifying any additional work to be completed on the asset.

The Urban Forestry Division should take a number of steps to install a formal planning and scheduling system. These steps are presented below.

- **The Arborist / Urban Forester should inspect all of the work before the development of a work order.** The Arborist / Urban Forester should first respond the address of the service request to determine the type of work required and to develop the work order. The work order should be assigned to the Tree Trimmers using the FIFO (First in - First out) system within established priorities and crew assignments.
- **The Urban Forestry Division should develop a priority system for the assignment of work orders.** The priorities should be emergency, urgent, and routine. Emergency work orders should be safety items that demand immediate response to protect and save property and lives, and should be completed the same day. Urgent work orders should be responses that require a response as soon as possible (few hours) to protect property or to prevent disruption; these work orders should be completed in one week of receipt of the request.. Routine work orders are other work that can be handled on a routine planned and scheduled basis. These should be completed within one month of receipt of the request.
- **The Arborist / Urban Forester should create and utilize work orders for all**

of the work performed by the staff of the Urban Forestry Division, and not just service requests. The work order should serve as the basis for identification of requests for services, or work. A work order does basic things for the Division. First, it alerts the staff of a requirement for services. Second, the work order describes the work or services to be performed. Third, the work order authorizes expenditures for the described work (clearance trimming, stump removal, etc.). Finally, an effective work order system will enable tracking of performance in the accomplishment of such work. The Division is able to know when the work was required, when it was completed, who performed the work, and the cost of performing that work. Thus the work order system is the backbone of a planning and scheduling system. The work order should include date, name of the requestor, location of the work, nature of the work, priority of the work, etc.

- **The Arborist / Urban Forester should prepare a three to six month schedule.** A three to six month schedule is a process of balancing workload, both current and anticipated workload demand. This is especially important for the Division given the large backlog of block-by-block tree trimming. By defining the current workload and anticipating future workloads, the Arborist / Urban Forester will be able to make an informed decision on the amount of work that can be accomplished given the staff resources available. The Division's staff resources must be balanced with the workload so that there are enough people and materials to accomplish the work, but not more people and materials than needed or more workload than can be realistically accomplished. This can be accomplished by documenting the available work hours and then documenting work hours required for tree maintenance.
- **The Arborist / Urban Forester should develop a weekly schedule.** The Arborist / Urban Forester should develop a written weekly schedule. The weekly schedule for Tree Maintenance is the plan for assigning staff resources to specific jobs in the coming week. The weekly schedule is normally developed on a Wednesday or Thursday of the preceding week. The assignment of staff resources is based on several factors:
 - Available work hours. This can be affected by planned leave, holidays, attrition, and other factors.
 - Available materials and equipment. To accurately schedule, materials planners must communicate realistic delivery dates for necessary materials.
 - Rate of success in the current week's schedule.
 - Priorities. The overall plan of the master schedule becomes a guide in developing priorities for the weekly schedule.

A weekly schedule does not necessarily define the work of individual staff, but rather the number of hours by a crew to be spent each day on specific work orders.

- **The Arborist / Urban Forester should track and report work performed versus planned.** Tracking work progress and reporting on work progress is another important part of the planning and scheduling system. Reporting on work is the process of communicating with management and customers the current progress for tree maintenance work compared to the weekly schedule and the future plans. Weekly schedule compliance is an effective method of tracking progress. For instance, how close was the actual weekly execution of the work in relationship to the plan developed in the weekly schedule? How effectively is the backlog of tree maintenance work and is the tree maintenance backlog dissipating (to the extent that a backlog exists)?

The planning and scheduling system allows the Arborist / Urban Forester to manage what, when, how, how much, and how well Urban Forestry performs its work. The system can be complex and computerized, with full scheduling and tracking controls, or more informal, with a minimum of control. The Division must find the right balance of control to enable it to meet its goals and objectives in supporting the Department's mission.

Recommendation #32: The Urban Forestry Division should develop and install a formal work planning and scheduling system.

(6) The Urban Forestry Division Should Enhance Public Information And Relations.

The Urban Forestry Division already does much in the way of public information and relations. The City Council has, for example, established a Tree Committee as an appointed five (5) member citizen advisory body that serves the community and the City Council. It also participates in the Earth Day Celebration and the Arbor Day Celebration.

The Urban Forestry Division should enhance its public relations and public information program and focus on regularly informing and educating city residents about the benefits and value of the urban forest. This should include the following:

- Increased public awareness, understanding and cooperation regarding the intentions of San Luis Obispo's Tree Ordinance;
- Employment of current accepted best management practices for pruning, planting, and other aspects of tree care;
- Proper selection of tree species and cultivated varieties that are appropriate for the San Luis Obispo climate and soil;
- Public understanding of the value of a well managed urban forest; and
- Public understanding of the value of City and community partnership for creating a better urban forest and a better community.

This should include the development of a website for the Division that includes current tree and urban forestry information, schedules and details for events, and information on programs and services. Provision of an attractive website with current and technically accurate information should establish the Division as one of the prime resources within the City for urban forestry and arboricultural references and resources.

The Division should provide regular articles and features in the local news media and popular publications, and provides regular arboriculture and urban forestry educational programs and presentations for public service and interest groups.

The Division should actively should work with neighborhood associations to circulate informational / educational brochures and programs for the general public and interested organizations and associations.

Recommendation #33: The Arborist / Urban Forester should develop a website for the Urban Forestry Division on the Public Works Department's website.

Recommendation #34: The Arborist / Urban Forester should develop and implement a public relations and public information program focused on regularly informing and educating city residents about the benefits and value of the urban forest.

(7) The City Should Work With The Community To Establish A Tree Foundation.

A tree foundation would be a non-profit 501 c (3) organization dedicated to growing healthy urban forest in San Luis Obispo. The foundation would be comprised of comprised of local citizens, corporate partners, business owners, city representatives and tree professionals.

The tree foundation would provide education, tree planting and stewardship. It would work with the Urban Forestry Division to establish and promote tree programs to foster the importance of the urban forest by:

- Proper tree planting and stewardship;
- Education and training;
- Volunteer citizen forestry;
- Promote citizen financial contributions and donations as a way to enrich the quality of the urban forest in San Luis Obispo; and
- Community partnerships.

A number of cities in California have established such non-profit 501c (3) organizations to support their urban forest including Roseville, Visalia, Sacramento, Rolling Hills Estates, among others.

These funds can be used for such expenditures as the purchase of young trees and tree planting. For example, in the 10 years of its existence, the *Greater Modesto Tree Foundation* has planted over 6,000 trees. In addition, these foundations have been utilized to solicit grants from California ReLeaf, the National Tree Trust, and American Forests, which offer tree planting grants to local governments and partnering non-profits.

Recommendation #35: The Arborist / Urban Forester should work with the Deputy Public Works Director to establish a tree foundation for San Luis Obispo that

would be a non-profit 501 c (3) organization dedicated to growing healthy urban forest in San Luis Obispo.

(8) The Urban Forestry Division Should Adopt Formal Written Service Levels For the Maintenance of the Urban Forest.

One of the City Council's Major City Goals for 2009-11 was to sustain an effective level of existing core infrastructure maintenance. This goal will continue to be important to the City's fiscal well being, since failure to maintain critical infrastructure often results in higher costs down the road.

Urban forestry maintenance is a core service for the maintenance of the City's infrastructure. To assure the maintenance of the City's urban forest, the Department should adopt formal written service levels for the Division. The service levels recommended by the consultant are presented below.

- Mature tree care is identified as the second highest priority for urban forestry management. The minimum standards established by the *Society of Municipal Arborists* include street trees must be pruned at least once every 8 years, with recommended pruning, and every 5 years for older trees. Because the majority of mature trees have an established structure, they need less frequent, but more intensive care than young trees to keep them healthy as they age. Regular inspection and maintenance are crucial to protecting this important resource and maintaining public. Large trees are the most significant component of the urban forest.
- Hazard tree abatement, or removal of dead or dying trees within the community forest is the highest priority for urban forestry management. There should be no backlog in hazard tree removal. Trees should be removed within one (1) workday after approval of the removal by the Arborist / Urban Forester. Hazard tree abatement, or removal of dead or dying trees within the community forest, should be given the highest budget priority due to potential public safety concerns. Dead and dying trees can be in danger of falling or losing major branches, with resultant property and/or personal injury concerns.
- Young tree care and new tree planting are essential parts of urban forest management, and should be the third highest priority. The health and stability of our future forest depends in large part on judicious tree selection today, as well as ongoing maintenance of young trees. Conscientious care of young trees is a prudent and cost-saving measure in the long run, because trees that are frequently inspected and pruned in the first six years of growth need much less attention and costly maintenance when mature. The *Society of Municipal*

Arborists established a minimum standard for pruning young trees once every three years, or two prunes during the first six years.

- New tree planting on an annual basis is an important element of perpetuating the community forest. Failure to plant trees on a regular basis will reduce age diversity and leave gaps in canopy cover. Cities such as Vancouver, Spokane, Modesto, and Santa Monica are known for their commitment to a managed urban forest. They report having a range of 60%-90% of all inventoried street tree planting sites filled with trees, so 80% full stocking is a reasonable standard (100% full stocking implies that all planting sites are filled).
- Develop tree removal and replacement programs for targeted areas. There are areas of San Luis Obispo where many of the street trees that are near the end of their lifespan, have health problems endemic to the species, or create conflicts with sidewalks and other paving. A comprehensive approach that involves local residents in the planning process for tree removal and replacement is an asset to long-term tree survival and has proven successful in previous projects of this type in San Luis Obispo. Projects should focus on selectively removing only trees that pose the greatest problems, while establishing an understory of newly planted replacement trees for older trees as they are gradually removed.
- Responding to citizen requests for removals or other service requests by the Urban Forestry Division should occur within one (1) workday: this would be a telephonic response acknowledging the service request and scheduling a site visit. The actual site visit should occur within five (5) workdays of the receipt of the request, on average.

These proposed service levels should be reviewed with the Tree Committee and the City Council, and adopted by the Department. The Division should use EnerGov to monitor its compliance with these levels of service.

These recommended levels of service largely reflect the existing levels of service delivered by the Urban Forestry Division. The consulting team does not recommend a reduction in these levels of service.

Recommendation #36: The service levels proposed for mature tree care, hazard tree abatement, young tree care, new tree planting, and tree removal and replacement in this report should be adopted by the Public Works Department after their review by the Tree Committee and the City Council.

Recommendation #37: The Urban Forestry Division should use EnerGov to monitor its compliance with these levels of service.

(9) The City Should Not “Load Shed” Maintenance of Street Trees to Residents.

Some cities in California have begun to shift the responsibility for maintenance of street trees from the city itself to residents. For example, the City of San Jose, California has assigned, via San José Municipal Code, to the property owner the maintenance responsibility for street trees adjacent to his/her property, including the responsibility to maintain these trees in a condition that will not interfere with the public convenience or safety in the use of the public right-of-way. The sidewalk, tree planting area (whether in a park strip or behind the sidewalk), the curb and gutter, and the street itself are all within the public right-of-way.

The consulting team does not recommend this reassignment of responsibility. Reassignment would likely result in a decrease in the quality of care provided to the City's street trees. The City should continue to maintain its urban forest with its own staff or its contractors.

Recommendation #38: The City should maintain responsibility for maintenance of street trees using its own staff or its contractors.

(10) There Are No Opportunities for Cost Reductions Within the Urban Forestry Division Without Reductions In the Level of Service and There Are Not Any Observable Redundancies in Service Delivery.

The City has been in a cost reduction mode for six of the past eight fiscal years. This reduction is apparent in the annual operating budget of the Urban Forestry Division; 93% of the fiscal year 2010-11 budget is salary and benefits. Other line-item budgets have been reduced. For example, the budget for contract services has been reduced to \$15,035. This is less than that required to full prune mature trees in the City.

As noted previously in this chapter, the consulting team recommends that the budget for contract services be increased.

Furthermore, there are no observed redundancies in the Division. That is the Division is not consistently delivering services that are also delivered by other Divisions in the Public Works Department except by design. Maintenance Workers in the Park Maintenance Division should be expected to provide clearance trimming of park trees, and provide young park tree care or pruning. Largely, Maintenance Workers in the Park Maintenance Division should be expected to provide all of the required park tree care except that care that cannot be provided from ground height. These Maintenance Workers should not be expected to prune trees using a rope and saddle or aerial tower.

(11) The Urban Forestry Division Utilizes Appropriate Equipment and Technology.

The Division is appropriately equipped to conduct its work. It utilizes the same type of equipment that other cities utilize, and that enable its efficient delivery of services. This includes an aerial tower, a brush chipper, chainsaws, etc.

The Tree Committee has recommended the acquisition of a stump grinder. The consulting team does not recommend the acquisition of a stump grinder. The Division will not grind stumps often enough to make this a worthwhile investment. The Department should continue to outsource this service.

Recommendation #39: The Public Works Department should not acquire a stump grinder. The Department should continue to outsource this service.

5. PARK AND LANDSCAPE MAINTENANCE DIVISION

This chapter presents an analysis of the Park and Landscape Maintenance Division. The analysis includes the following:

- The adequacy of the maintenance of parks in the City as inspected by the Matrix Consulting Group;
- The adequacy of maintenance management for parks and landscape maintenance;
- The levels of staffing for park and landscape maintenance and the balance of contract maintenance versus in house maintenance; and
- The adequacy of maintenance management systems and contract management systems.

The chapter opens with a description of the Park and Landscape Maintenance Division.

1. THE PARK AND LANDSCAPE MAINTENANCE DIVISION IS AUTHORIZED TWELVE FULL-TIME POSITIONS AND A LITTLE MORE THAN THREE FULL-TIME EQUIVALENT TEMPORARY STAFF.

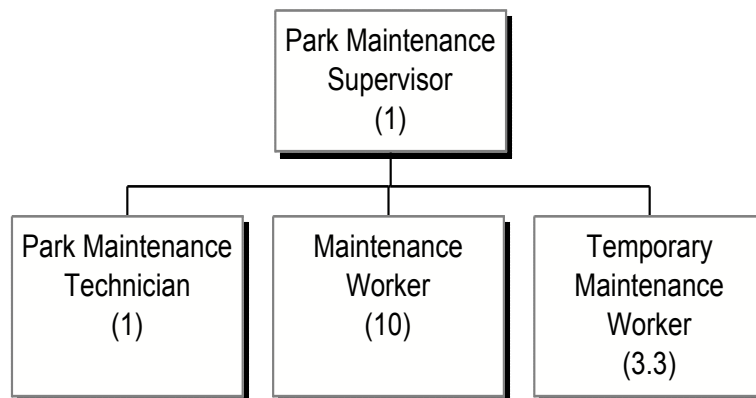
The Park and Landscape Maintenance Division is responsible for the maintenance of approximately ~~244~~ 214.2 developed parks and landscaped areas within the City.¹² The Division has two major activities as noted below.

- **Park and landscape maintenance.** The Division is responsible for maintaining parks, landscaped areas such as community gardens, street medians, landscaped areas associated with sound walls, and grounds associated with City buildings, providing janitorial maintenance for park restrooms and other park buildings, and also maintaining a lake, various sports complexes and open space contained. Over the past several decades, the responsibilities of park maintenance staff in almost all cities have evolved to include Interaction with the homeless using the City's parks, informing park users of the rules of the facilities, interacting with Police on illegal activities in the parks etc., or activities that would not normally correlate with park maintenance.

¹² This represents the maintained acreage as reported by the Park Maintenance Section that is maintained by both City staff and by contractors.

- **Park and landscape improvement.** The Division is responsible for managing minor capital maintenance projects for parks and landscaped areas, inspecting playgrounds for compliance with safety regulations, and monitoring irrigation water use and proposing conservation measures.

A total of twelve (12) full-time positions and a little more than three (3.3) full-time equivalent temporary positions are authorized for park and landscape maintenance as depicted in the chart below. In addition, a total of \$375,958 is authorized for contract park and landscape maintenance services, and the Division utilizes court-appointed Community Service, prison work crews, the Path Point organization, and volunteer groups.



The total FY 2010-11 budget for the Park and Landscape Maintenance Division in San Luis Obispo is presented in the table below.

Budget Category	Budget \$	% of Total
Staffing	\$1,100,900	50.3%
Contract Services	\$375,958	17.2%
Other Operating Expenditures	\$711,545	32.5%
Minor Capital	\$-	0.0%
TOTAL	\$2,188,403	100.0%

* This budget information was provided by the Public Works Department on February 25, 2011.

With an estimated 2010 population of 44,948, this budget indicates that the City is budgeting \$48.68 per capita for park and landscape maintenance on an annual basis. The fiscal year 2010-11 budget for maintenance per developed or maintained acre approximates \$10,216.

2. THERE ARE A NUMBER OF POSITIVE CHARACTERISTICS TO PARK AND LANDSCAPE SERVICE DELIVERY.

The diagnostic appraisal of the Public Works Department identified a number of positive characteristics in the deliver of park and landscape maintenance services.

Examples of these positive characteristics are presented below.

- The condition of parks are informally inspected daily, playgrounds are formally inspected monthly, and site-based supervisors provide critique to others' areas regularly.
- The four parks inspected by the Matrix Consulting Team were overall found to be in good condition given the absence of minor capital outlay funds available for rehabilitating parks.
- Approximately 10% of the park and landscape acreage has been outsourced.
- Irrigation management is controlled via advanced automatic systems (Rainmaster) that includes contributing weather factors. The system monitors operational aspects of the irrigation system in real time.

These are examples of the positive characteristics in the delivery of park and landscape maintenance services.

3. ANALYSIS OF ORGANIZATIONAL STRUCTURE

The fundamental questions in evaluating organizational structure are the efficiency of the plan of organization, the responsibility and accountability of managers and supervisors. The intent is to ensure the following:

- **The organizational structure fosters accountability.** The organizational structure fosters accountability among management and supervisory staff.
- **The plan of organization enhances communication and coordination.** The number of handoffs/exchanges required among staff providing service to the public or internal clients is minimized.
- **Management and supervisory resources are utilized efficiently.** The plan of organization minimizes administrative overhead.

- **The span of control for any manager or supervisor is not more or less than 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.

These principles were utilized in evaluating the organizational structure of the Park Maintenance Division.

(1) The Span of Control for the Park Maintenance Supervisor Meets Metrics.

Why should an organization be concerned about managerial layers and spans of control?

The City of San Luis Obispo has been challenged fiscally over the past several years to provide a responsive government at a lower cost. As noted in the General Fund Five-Year Fiscal Forecast presented to the Council in October 2010, the City is facing a long-term structural budget gap between revenues and expenditures for the foreseeable future unless corrective action is taken. One of the most effective ways to meet these challenges is to streamline organizational structure through increased spans of control.

At the present time, the Park Maintenance Supervisor supervises one (1) Park Maintenance Technician, ten (10) Maintenance Workers and a little more than three (3.3) full-time equivalent temporary workers in the Division.

The duties of the Park Maintenance Supervisor, reflected in the profile of the Department that was reviewed and corrected by the Department, includes providing work direction and supervision of the Division. The associated duties and responsibilities include oversight of full and part-time staff dedicated to park and landscape areas. The Supervisor is responsible for coordinating the overall Division budget, addressing broad operational issues, interfacing with the public, managing staff,

and ensuring the Division completes operational goals and objectives consistent with the its mission.

Management literature identifies various factors that cause span of control to differ among supervisors and in different organizations. For example, narrower spans of control are appropriate when the nature of work performed is complex, when organizational objectives are unclear, when tasks are uncertain, or risks are high. The chart, below, presents some of the factors that should be considered in evaluating spans of control.

Factor	Narrower Span of Control	Wider Span of Control
Nature of Work	Complex	Not Complex
Similarity of activities performed	Different	Similar
Clarity of organizational objectives	Not Clear	Clear
Degree of task certainty	Fuzzy	Definite Rules
Degree of risk in the work for the organization	High	Low
Degree of public scrutiny	High	Low
Supervisor's qualifications and experience	Weak	Strong
Burden of non-supervisory duties	Heavy	Light
Degree of coordination required	High	Low
Availability of staff assistance	None	Abundant
Qualifications and experience of subordinates	Weak	Strong
Geographic location of subordinates	Dispersed	Together

There are a number of factors in the Park Maintenance Division that argue for a wide and for a narrow span of control for the Park Maintenance Supervisor as noted below.

- **Wide span of control.** Those factors that suggest a wider span of control is possible include:
 - The nature of the work performed by the staff of the Division is less complex than other aspects of the Public Works Department i.e., Engineering Capital Project Design,
 - The activities performed are similar,
 - The organizational objectives are clear,
 - There are definite rules for the tasks performed by the staff of the Division,

- The qualifications and experience of the Park Maintenance Division and the Maintenance Worker III's are strong, and
- The degree of coordination required is low.
- **Narrow span of control.** On the other hand, there are factors that suggest the narrow span of control should be continued. These include the risk of the work for the organization, the degree of public scrutiny, the diverse geographic location of the staff assigned to the Division, and the lack of staff assistance for the Division.

A tall, narrow span of control is thought to create slower decisions and sometimes hamper an organization's ability to compete. Narrow spans of control may be most appropriate in highly technical or specialized areas that require close supervision.

A wider, flatter configuration, such as that found in the Park Maintenance Division, means fewer layers of reporting and more subordinates reporting to a supervisor. Wider and flatter organizations tend to have faster decision-making, and improved communication, motivation and morale. Spans of control that are too wide can also create problems such as inconsistent performance and inadequate supervision.

The Matrix Consulting Group utilizes span of control guidelines to shape the discussion and development of recommendations regarding spans of control and management / supervisory layers. These guidelines were developed based upon the research and analysis conducted by a number of other cities and counties that were evaluating the number of management layers and the spans of control in their organizations. These include such cities and counties as Portland, Oregon; King County, Washington; Seattle, Washington; Kansas City, Missouri; etc.

These guidelines recognize situational differences in terms of departmental size, task complexity, etc. The guidelines, for a department such as the Public Works

Department with 50 to 150 employees, suggest that not more than four layers of managers and supervisors are appropriate, and that the span of control for the ratio of first-line supervisors to non-supervisors assigned to maintenance should not be lower than 1 to 10 or higher than 1 to 20.¹³

As these guidelines apply to the Park Maintenance Division, there are three management and supervisory layers: The Public Works Director, the Deputy Director (City Engineer), and the Park Maintenance Supervisor. This falls within the guidelines. The span of control for the Public Works Maintenance Supervisor is fourteen (14), which falls within the guideline of not less than 1 to 10 or more than 1 to 20.

The plan of organization for the Park Maintenance Division should not be modified.

Recommendation #40: The span of control for the Park Maintenance Supervisor meets metrics, and the plan of organization for the Park Maintenance Division should not be modified.

(2) The Park And Landscape Maintenance Division Should Be Assigned Responsibility For The Management Of Contract Maintenance Of Park And Landscape Facilities.

At the present time, the Public Works Maintenance Supervisor in the Urban Forestry Division is responsible for managing the contract maintenance of park and landscape facilities. This involves four (4) contracts.

- **Restroom cleaning contract.** This contract involves cleaning of restrooms at thirteen (13) parks. The restrooms are cleaned once a night and locked up. The contract amounts to \$79,200 per year.
- **Park and landscape maintenance.** There are three (3) contractors that are responsible for the maintenance of seventy-two (72) parks, medians, sound walls, parking structures and miscellaneous city-owned properties. The three (3) contracts amount to \$241,000 per year.

¹³ *City of Portland Span of Control Study*, prepared for the City of Portland Audit Services Division by Public Knowledge, Inc. and The Kemp Consulting Group, 1994.

These contracts amount to the equivalent of approximately three to four full-time equivalent staff. This is based upon the City's own bid documents. "This Weeks Events", a document in which the bidders had to specify the hours by facility, stated "sample schedule for a three-man crew." It is also based upon the bid costs themselves and the comparable costs for City maintenance workers.

The responsibility for the management of these contracts should be assigned to the Park and Landscape Maintenance Division. The Park Maintenance Supervisor should be held accountable for the quality of maintenance for all of the City's park and landscaped facilities regardless of whether these facilities are maintained by staff of the Park and Landscape Maintenance Division or by contractors.

The Division has sufficient authorized staffing to supervise the delivery of these contractual services. This supervision does not need to be accomplished on a daily basis. The Park Maintenance Supervisor should assure that park and landscaped facilities that are maintained via contract are sampled on a weekly basis, and that intensive supervision be provided only when performance is noted to be a problem.

Recommendation #41: The responsibility for the management of park and landscape maintenance contracts should be assigned to the Park and Landscape Maintenance Division.

Recommendation #42: The Park Maintenance Supervisor should be held accountable for the quality of maintenance for all of the City's park and landscaped facilities regardless of whether these facilities are maintained by staff of the Park and Landscape Maintenance Division or by contractors.

2. ANALYSIS OF STAFFING

This Division provides an analysis of the workload and staffing levels of the Park Maintenance Division including outsourcing of these services.

In conducting this analysis, the project team utilized best practices found in other cities and its own experience in analyzing park maintenance practices in cities for over thirty (30) years, the best practices cities by other park maintenance consultants, and the practices of other cities with well managed parks.

The project team could not rely on best practices of the *National Recreation and Park Association* or the *American Public Works Association*. These professional organizations have developed best practices that include standards for turf mowing, maintaining an inventory of turf areas, routinely inspecting and evaluating the condition of turf areas, etc. These professional associations have not developed best practices for the staffing levels that should be utilized in the maintenance of parks and landscaped areas, the balance between outsourcing and insourcing maintenance services, alternative service delivery and its potential impact on staffing, etc.

(1) The Public Works Department Should Utilize Managed Competition To Determine Whether It Should Continue To Outsource Park and Landscape Maintenance Or Should Insource These Services.

Managed competition is a structured, transparent process that allows public sector employees to be openly and fairly compared with independent service providers (normally private sector firms) for the right to deliver services. This strategy recognizes the high quality and potential of public sector employees, and seeks to tap their creativity, experience and resourcefulness by giving them the opportunity to structure organizations and processes in ways similar to best practices in competitive businesses, yet still compatible with public sector realities.

The Government Finance Officers Association recommends that governments systematically identify and evaluate the major factors in considering a managed

competition option.¹⁴ Service level, cost, efficiency, effectiveness, quality, customer service, and the ability to monitor the service provider's work should be essential components of any managed competition decision. In addition, governments should clearly define the service parameters in the expected service delivery.

Why consider managed competition? There are a number of pragmatic reasons for cities to consider managed competition. First and foremost, competition is a way to lower costs, an important consideration for cities facing difficult financial times such as San Luis Obispo. Cities managers can also use competition to improve the quality of service provided.

The first step in the managed competition process is completing a pre-competition assessment report for any function that is moving forward into competition. At this point, the function will move forward through the following five phases:

- Phase I: Competition Planning
- Phase II: Solicitation Development
- Phase III: Employee Proposal Preparation and Development
- Phase IV: Source Selection
- Phase V: Transition and Post-competition Accountability

The length of time required for each of these phases is dependent on the circumstances of, type, and size of function undergoing competition. During Phase I, the Public Works Department would document the activities performed to maintain parks and landscaped areas, document service levels, identify potential bidders including assessing how to recruit bidders outside of San Luis Obispo County, document the inventory of park and landscaped areas, and document the existing costs. During Phase

¹⁴ Government Finance Officers Association, Managed Competition as a Service Delivery Option, 2006.

II, the Office of the City Manager should lead the team developing the Statement of Work (SOW) and the Request for Proposals (RFP). The Request for Proposal should then be issued to the Employee Proposal team and to the private sector. In Phase III, the Employee Proposal team should develop the employee response to the solicitation. As part of Phase IV, the Office of the City Manager and the Finance Department will oversee the evaluation of the proposals from the Employee Proposal team and the private sector. Once a winning proposal has been selected and approved, the City will transition to the winning service provider. At this juncture, the City will begin tracking the cost and quality of service during post-competition accountability in Phase V.

The consulting team recommends the use of managed competition since it is unclear that the previous outsourcing of park and landscaping services by the City has, in fact, reduced operating costs.

The table below summarizes the annual cost per acre for the outsourced park and landscaped areas.

Service Category	Type of Facility	Maintained Acreage	Number of Sites	Annual Cost	Annual Cost Per Acre
2	Landscaped areas, parks, and facilities with turf	9.94	19	\$119,064	\$11,984
3	Landscaped areas, parks, and facilities without turf	3.33	11	\$25,525	\$7,658
4	Traffic median islands, roadside, and sound walls	5.33	21	\$61,677	\$11,571
5	Sound walls, circles, islands and frontages with minimal vegetation	2.26	9	\$26,796	\$11,856
2	Parking Lots	1.50	12	\$48,168	\$32,112

Important points to note concerning the table are presented below.

- The contractors maintain a total of approximately 22.36 acres. This is an estimate since some of the invitation for bids for park and landscape maintenance did not disclose the acreage for some of these sites.
- The contractors maintain a total of 72 different park and landscape sites.
- The total contract for park and landscape maintenance amounts to approximately \$281,320 annually.
- The annual cost per acre approximates \$12,577.
- The range of annual costs per acre ranged from \$7,658 for landscaped areas, parks, and facilities without turf to \$32,112 for parking lots. The cost per acre for each category of facilities is higher than that typically found by the consulting firm in other cities.

In the experience of the consulting team, the cost per acre for outsourced maintenance is high compared to other cities that the consulting team has worked with. This may reflect the isolated location of San Luis Obispo and the limited number of contractors competing for these contracts.

The Park Maintenance Division does not utilize activity-based costing. As a result, it is not possible to document the annual costs of maintenance per acre on a facility-by-facility basis. These costs can only be documented at a gross level.

The facilities maintained by the staff of the Park Maintenance Division are presented in the table below.¹⁵

Type of Facility	Name of Facility	Maintained Acreage	Gross Acreage
Sports Complex	El Chorro Regional County Park-Ball Fields	0.64	-
Full Service	Laguna Lake Park	71.3	344.54
Neighborhood	Throop Park	3.05	3.05
Full Service	Jack House Gardens	0.57	0.57
Full Service	Santa Rosa Park	10.18	10.18
Landscape Only	Rodriguez Adobe	1.36	1.36
Full Service	Sinsheimer Park/Stadium	32.6	32.64
Neighborhood	Mission Plaza	1.8	1.8

¹⁵ The Park Maintenance Section provided this park acreage and list of facilities.

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Type of Facility	Name of Facility	Maintained Acreage	Gross Acreage
Full Service	Meadow/Exposition Park	17.81	17.81
Neighborhood	Laguna Hills Park	3.5	3.5
Neighborhood	Islay Hill Park	10.8	10.8
Full Service	Johnson Park	4.31	4.31
Full Service	French Park	9.7	9.7
Sports Complex	Damon Garcia	23.56	23.56
Landscape Only	Butrone Park	0.69	0.69
TOTAL		191.87	464.51

As the table indicates, City park maintenance staff are responsible for maintaining 191.87 acres.

The annual operating costs associated with the maintenance of these parks and landscaped areas are presented in the exhibit following this page. To enable an “apples-to-apples” comparison of the costs of Park Maintenance Division with the costs of contractual maintenance, some of these line-item expenditures should be excluded as noted below.

- The costs of utilities should be excluded. Those are not included in the contract costs per acre, and should not be included in the Park Maintenance Division costs. These costs amount to \$547,500.
- The landscape maintenance contracts and the restroom contracts should be excluded. The costs of the restroom-cleaning contract are not included in the contract costs per acre, and should not be included in the Park Maintenance Division costs. The landscape contracts should be excluded since this reflects the contract costs of the park maintenance. These costs amount to \$322,820.

Excluding these costs generates an annual operating cost of \$1,318,083. Given the amount of acres maintained by the staff of the Park Maintenance Division, as noted previously, this results in a cost per acre of \$6,870. This is 54% of the cost per acre of the contract costs.

Exhibit 4 (1)

Park Maintenance Division 2010-11 Budget

Line Item	Fiscal Year 2010-11 Budget
Salaries-Regular	\$584,300
Salaries-Temporary	\$156,800
Sub-Total	\$741,100
Overtime	\$14,400
Stand-By	\$10,100
Call Back	\$-
Sub-Total	\$24,500
Retirement Contributions	\$191,100
Retirement PARS 401	\$800
Health and Disability Insurance	\$112,200
Retiree Healthcare	\$17,400
Medicare	\$10,900
Unemployment Insurance	\$2,900
Sub-Total	\$335,300
Building and Construction Contracts	\$8,500
Contract Labor	\$9,800
Contract Services	\$89,758
Data Processing Services	\$300
Equipment Maintenance	\$11,200
Landscape and Pruning Contracts	\$256,400
Sub-Total	\$375,958
Publications and Subscriptions	\$200
Sub-Total	\$200
Education and Training	\$4,600
Professional Organizations	\$1,900
Sub-Total	\$6,500
City Water Service	\$479,400
City Sewer Service	\$10,600
Electric Utility Service	\$57,500
Sub-Total	\$547,500
Construction Equipment	\$700
Portable Structures	\$2,500
Sub-Total	\$3,200

Exhibit 4 (2)

Line Item	Fiscal Year 2010-11 Budget
Cement and Concrete Mix	\$300
Construction Material	\$1,500
Electrical Supplies	\$4,800
Fencing	\$1,500
Fertilizers	\$61,800
Flags and Decorations	\$1,800
Insecticides and Herbicides	\$3,900
Janitorial Supplies	\$16,000
Lumber and Hardware	\$8,500
Operating Material and Supplies	\$4,600
Paint Supplies	\$12,200
Plumbing and Heating Supplies	\$1,900
Protective Clothing	\$2,500
Safety Supplies	\$800
Sand and Gravel	\$6,300
Small Tools	\$8,300
Sprinklers and irrigation	\$13,645
Trees, Shrubs, and Nursery Stock	\$3,800
Sub-Total	\$154,145
TOTAL	\$2,188,403

However, calculating the cost per acre for maintenance by the Park Maintenance Division staff is problematic due to problems with the reported acreage maintained by the Division. This data was developed by the Division and provided to the consulting team, and the overall maintained acreage does not appear to accurately reflect day-to-day maintenance demands. This is based upon comparisons to data provided by the City's GIS Division that included data regarding square footage by type of facility component i.e., hardscape, shrub area, turf, natural areas, bare ground, etc. Examples for Sinsheimer, Damon Garcia, and Laguna Lake are presented in the paragraphs below.

- **Sinsheimer.** The amount of maintained acreage was reported as 32.6 acres. However, a total of 2.54 acres are bare ground, 0.58 acres are water features, and 14.9 acres are natural areas. These three components should not require intensive day-to-day maintenance as would turf areas, shrub areas, hardscape, etc. These three components comprise 18.02 acres or 55% of the maintained acreage for the park.
- **Damon-Garcia.** The amount of maintained acreage was reported as 15.5 acres. However, a total of 0.22 acres are bare ground, and 8.07 acres are natural areas. These three components should not require intensive day-to-day maintenance as would turf areas, shrub areas, hardscape, etc. These three components comprise 8.29 acres or 53% of the maintained acreage for the park.
- **Laguna Lake.** The amount of maintained acreage was reported as 71.3 acres. However, there are only 11.2 acres of hardscape, shrub area, turf, sand courts, play surfaces, structures, bridges, and sports courts or 16% of the maintained acreage for the park. The remaining acreage consists of natural areas, water features, and bare ground.

The Public Works Department responded that natural areas necessitate rodent control and regular inspection for trash and homeless encampments, and Laguna Lake water quality must be tested regularly during the warm season and treated for algae blooms, and trash and debris removed from the lake to keep the outflow from

plugging.¹⁶ However, these activities do not require the same level of ongoing daily and weekly effort as mowing, edging, weeding, litter collection, etc., of the developed acreage in these parks.

The development of the cost per acre for maintenance by the Park Maintenance Division staff rests upon an “apples-to-apples” comparison. It is unclear that the maintained acreage as reported by the Park Maintenance Division facilitates that comparison. Equally important, when managed competition bid documents are developed, these acreages by park component need to be clearly identified and the levels of service for each component clearly identified.

A managed competition, however, should not be dependent on cost per acre. It should be based upon costs that are “bid” per park or landscaped area using service levels that are specified in the invitation to bid. The Office of the City Manager and the Finance Department would evaluate these “bid” costs as “bid” by the Park Maintenance Division and by the private sector in Phase IV of the managed competition. Once a winning proposal has been selected and approved, the City should transition to the winning service provider or service delivery model. At this juncture, the City will begin tracking the cost and quality of service during post-competition accountability in Phase V.

Recommendation #43: The Public Works Department should utilize managed competition to determine whether it should continue to outsource park and landscape maintenance or should insource these services.

¹⁶ Comments received by the Matrix Consulting Group from the Public Works Department in a memorandum entitled Matrix Report – PW Assessment – 2nd draft comments – April 8, 2011

(2) The Existing Level Of Authorized Staffing For The Park And Landscape Maintenance Division Is Capable Of Delivering An Average Level Of Service.

Overall, the Park and Landscape Maintenance Division is authorized a little more than fourteen (14.3) full-time equivalent positions for park and landscape maintenance (excluding the Park Maintenance Supervisor). This includes one (1) Park Maintenance Technician, ten (10) Maintenance Workers, and a little more than three (3.3) full-time equivalent temporary workers. However, approximately 1.375 full-time equivalent staff are not allocated to park maintenance, but to Farmer's Market support, opening parks on the weekend, opening the Jack House for events, etc.

The staff is responsible for the maintenance of 191.87 developed acres of parks and landscaped areas. This approximates one maintenance worker for every 14.8 developed acres. In evaluating staffing for park maintenance, the project team used staffing guidelines that relate the number of developed acres per maintenance worker for various service levels ranging from excellent to average. The table that follows provides the standard definition for each of these service levels.

Service Level	Service Level Definition and Required Maintenance Staffing
Excellent	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. Requires one park maintenance worker per 4 to 6 developed park acres.
Good	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. Requires one park maintenance worker per 6 to 10 developed park acres.
Average	An average level of maintenance associated with locations of moderate to low levels of development and visitation.

Service Level	Service Level Definition and Required Maintenance Staffing
	Requires one park maintenance worker per 10 to 15 developed park acres.

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. We promote excellence in the administration, care, operations, planning, and construction of educational facilities.

Overall, the Park and Landscape Maintenance Division is capable of delivering an average level of service with the existing level of authorized staffing.

The Matrix Consulting Group does not recommend an increase in staffing for the Park and Landscape Division. Any adjustments in staffing should be held in abeyance until the completion of the managed competition.

Overall, the existing level of authorized staffing for the Park and Landscape Maintenance Division is capable of delivering an average level of service for park and landscape maintenance.

Recommendation #44: The number of authorized staff in the Park and Landscape Maintenance Division should not be increased pending completion of a managed competition.

(3) The Public Works Department Should Consider Other Alternative Service Delivery Options Beyond Managed Competition.

Alternative service delivery (ASD) refers to any process that shifts some or all of the functions or responsibilities of delivering a service from the public sector to the private sector. Alternative service delivery can take many different forms as noted below.

- Asset Sale Or Transfer, whereby a government divests itself completely of an asset, turning over ownership to a private firm, a nonprofit organization or another government.
- Contracting Out Management of an asset, service or function to a private or nonprofit entity. The government retains ownership of any asset involved. However, the managing entity assumes responsibility for personnel. If a government transfers responsibility for management of service provision or a function to a private entity, it is referred to as Commercialization. An example of a commercialization effort is long-term lease arrangement that the City of Chicago has negotiated with the Cintra-Macquarie Consortium for operation of the Skyway. An example of a non-profit entity managing an asset is the Lincoln Park Zoological Society operating the Lincoln Park Zoo in Chicago.
- Corporatization, in which a government function is spun off to a government corporation that functions much like a private corporation but with a public mission. Examples of this are the United States Postal Service or the Pension Benefit Guarantee Corporation.
- Establishing internal markets, whereby departments purchase or contract for goods or services from other departments.
- Selling a franchise to a private firm, such as a utility company. This gives the firm exclusive rights to provide a service.

- Intergovernmental contracts or cooperation, which is a variation of contracting out, involves governments cooperating to jointly purchase or deliver goods or services. This option is quite common among local governments.
- Managed Competition, in which government employees can competitively bid against private contractors to provide certain services.
- Vouchers, where the government pays for a good or service, but provides citizens with choices as to their preferred way of obtaining the good or service.

The consulting team addressed managed competition in the previous section of this chapter. Other alternative service delivery options are limited for the Park Maintenance Division.

- The consulting team does not recommend that the City divest itself of its parks.
- The consulting team does not recommend that the City contract out management of park maintenance. The extent of departmental administrative overhead in the Public Works Department is limited, and there would not be any reduction in that administrative overhead if the management of park maintenance was contracted out. While the Park Maintenance Supervisor position could be eliminated, the contractual cost of managing park maintenance would likely match the salary and fringe benefit cost of the Park Maintenance Supervisor.
- Corporatization holds limited potential with park maintenance. This alternative service delivery has been utilized elsewhere, but the use of managed competition offers as substantive benefits as corporatization since it encourages public sector employees to act like a private corporation.
- Establishing internal markets would not be possible since there are no other internal markets for the services provided by the Park Maintenance Division. The Division, in essence, has a monopoly of park and landscape service among other City departments.
- Selling a franchise to a private firm would not be possible since the maintenance of parks does not offer sufficient operating revenue to attract a private firm to a franchise.
- Vouchers is not a viable alternative since it would increase costs. The City would still have the expense of maintaining parks, but would also have the additional expense of vouchers.

There are alternative service delivery options the City should explore, however.

The City should explore intergovernmental contracts or cooperation with San Luis Obispo County Parks. The County has parks in or in the vicinity of the City's incorporated boundaries. This includes Cuesta park, and the El Chorro regional park. The City should explore with the County the potential, if any, for the City to contract with the County for the maintenance of these facilities. This would require the City to add park maintenance staff (or transfer staff from the County to the City), but the assumption of the maintenance of these facilities could offer benefits to the City and the County. As another alternative, the City could contract with the County or the School District for the management of the maintenance of the City's park system. There are instances in the State of Washington in which two agencies have adopted intergovernmental contracts in which one agency manages the operation and maintenance of the other agency's park facilities. Vancouver and Clark County, Washington actually consolidated their park and recreation departments. Given the fiscal challenges that both the City, the County, and the School District are facing, it would be worthwhile to explore intergovernmental contracts or cooperation.

Another alternative service delivery is the enhanced use of volunteers. The Division already utilizes volunteers; this alternative would shed the maintenance of entire parks to volunteers with the exception of mowing.

Some cities in California have begun to shift the responsibility for maintenance of parks from the city itself to residents as "volunteers." For example, the City of Oakland, California has recently expanded the use of volunteers to maintain its parks given the recent reductions in park maintenance staff. In fact, the City has identified parks and medians that will not receive "routine" maintenance. The only maintenance that these

parks will receive is mowing every three weeks, but policing litter and weeding will not occur on a routine basis. To address this void, the City is soliciting volunteers to maintain these parks and medians. This includes volunteers that would police litter and function as park stewards that would assume responsibility for routine maintenance that only requires the use of hand tools of these parks such as weeding.

This is unusual. Most cities utilize volunteers to supplement the efforts of paid park maintenance staff through such programs as adopt-a-park. San Jose, California, for example, uses volunteers that adopt-a-park to pick up litter, rake leaves, remove graffiti, report park hazards, sweep courts and pathways, pull weeds, care for ecosystems, plant native plants, report homeless encampments, illegal dumping, storm damage, injured or dead animals, mountain lions, and other hazards. The City asks for a minimum commitment of one year of service to your adopted park or trail. The City also asks that volunteers perform tasks at their location a minimum of once per month. This is a more typical approach to the use of volunteers. The City of San Jose has had more than seventy (70) of its parks adopted by volunteers.

The consulting team does not recommend the reassignment of all of the responsibility for park and landscape maintenance to volunteers. Reassignment would likely result in a decrease in the quality of care provided to the City's parks and landscaped areas. The City should continue to maintain its parks and landscaped areas with its own staff, and supplement these efforts with the development of a formal adopt-a-park program. The development of a formal adopt-a-park program should include:

- The development of a web page at the Public Works Department web site for the adopt-a-park program;
- Identify the parks available for adoption by volunteers;

- Identify what the volunteers can do and the minimum commitment expected from the volunteer; and
- Document how the volunteers can sign up and how to contact the Public Works Department.

While the Park Maintenance Division is already utilizing volunteers, there are opportunities to formalize the program, and expand the program into an adopt-a-park program.

In addition, the Public Works Department should work to reassign responsibility for the maintenance of some of its medians and backup lots to homeowner associations. There are a number of facilities that the City has accepted sound walls, frontages, and medians, when these facilities largely serve the subdivisions. This includes such examples as the San Luis Drive frontage, the Los Praderas sound wall, and the Tank Farm Islands. The Public Works Department should develop a policy for the consideration regarding acceptance of sound walls, frontages, and medians that defines the circumstances under which the City will accept such facilities and the circumstances, and those circumstances in which a homeowners association should be responsible for these facilities. However, the Department should also meet with relevant homeowner associations to negotiate the reassignment of responsibility for the maintenance of facilities that largely serve subdivisions.

Recommendation #45: The City and the County explore intergovernmental contracts or cooperation in the maintenance of their park systems with the County and with the School District.

Recommendation #46: The City should continue the responsibility for maintenance of the City's parks and landscaped areas using its own staff.

Recommendation #47: The Park Maintenance Division should work with the Parks and Recreation Department to formalize its volunteer program into an adopt-a-park program.

Recommendation #48: The Public Works Department should develop a policy for the consideration of the City Council regarding acceptance of sound walls, frontages, and medians that defines the circumstances under which the City will accept such facilities, and those circumstances in which a homeowners association should be responsible for these facilities.

Recommendation #49: The Public Works Department should meet with relevant homeowner associations to negotiate the reassignment of responsibility for the maintenance of sound walls, frontages, and medians that largely serve subdivisions.

3. ANALYSIS OF OPERATIONS AND MANAGEMENT

This section of the chapter provides the project team's analysis of the opportunities for improvement in the operations and management systems for the Park Maintenance Division.

In conducting this analysis, the project team utilized best practices found in other cities and its own experience in analyzing park maintenance practices in cities for over thirty (30) years, the best practices cities by other park maintenance consultants, and the practices of other cities with well managed parks.

The project team could not rely exclusively on best practices of the *American Public Works Association* or the *National Recreation and Park Association*. These professional organizations have developed best practices that include standards for turf mowing, maintaining an inventory of turf areas, routinely inspecting and evaluating the condition of turf areas, etc. These professional associations have not developed best practices for the staffing levels that should be utilized in the maintenance of parks and landscaped areas, the balance between outsourcing and insourcing maintenance services, etc.

(1) City Parks Are Being Maintained In Good Condition Given The Lack Of Minor Capital Funding And The Funding Available For Trees, Shrubs, And Nursery Stock.

As part of the study of the Public Works Department, an assessment of the adequacy of maintenance of parks was conducted. The condition was evaluated using a rating form for park conditions based on formal performance rating practices utilized in other cities.

A sample of four developed City parks was selected, of varying sizes and amenities and distributed evenly throughout the City. The parks were inspected in November 2010. The table below shows the parks that were selected.

Park	Location	Acreage
Meadow Park	2333 Meadow	17.8
Mitchell Park	1400 Osos	2.3
Islay Hill Park	1511 Tank Farm Road	10.8
French Park	1040 Fuller	9.7

Contractors maintain one of these parks – Mitchell Park.

Each park was assessed through a variety of measures, including cleanliness, signage, field maintenance, playground, picnic areas, walkways, etc.

The sections that follow provide a summary of the condition assessment conducted by the project team.

- **Lawns.** Each park was inspected with regard to turf management, including mowing, weed control, edging, irrigation, pruning, and tree-pits. With respect to those conditions, the parks were overall in good condition. The table, below, presents the results.

Measure	Standard Description of Measure	Fail	Poor	Good	Excellent
Cleanliness	Turf is free of litter (no more than 10 pieces of litter visible in a 100' by 100' area or along a 200' line)	0	0	2	2
Cleanliness	Turf is free of organic litter that impeded mowing	1	0	3	0
Color	80% of turf area is fairly green	0	2	1	1

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Measure	Standard Description of Measure	Fail	Poor	Good	Excellent
Density and Spots	80% of turf area is free of bare spots	0	1	3	0
Drainage/ Flooded Area	80% of turf area is free of standing water	0	0	2	2
Edged	80% of all edges are clearly defined and have less than four (4) inches of growth over adjoining landscape	3	0	0	1
Height/ Mowed	Lawns are mowed and kept at a uniform height of less than ankle height	0	0	4	0
Holes	Lawns are free of visible holes greater than six (6) inches in diameter and/or depth	0	0	2	2

Important points to note regarding the rating of lawn maintenance in the four parks are noted below.

- Overall, the lawn maintenance at these four parks was evaluated as “good”.
- The only problems observed at these four parks were as follows:
 - Mowing windrows at French Park (the mowing cycle was too long);
 - Failure to edge the lawn areas at French, Islay Hill, and Meadows parks;
 - Turf areas that were not fairly green at Mitchell and Islay Hill parks; and
 - Substantive bare spots in the turf at all four parks.
- **Shrubs and Groundcover Area.** Each park was inspected with regard to groundcover (presence of weeds, bare spots, mulch, etc.) and shrub areas (presence of weeds, bare spots, mulch, etc.). With respect to those conditions, the shrub and groundcover areas were overall in poor to good condition. The table, below, presents the results.

Measure	Standard Description of Measure	Fail	Poor	Good	Excellent
Cleanliness	Shrubs and groundcover is free of litter (no more than 10 pieces of litter visible in a 100' by 100' area or along a 200' line)	0	0	2	2
Plant health	90% or more of each shrub and groundcover area shows no sign of death or damage	0	0	3	1
Density	80% of shrub and groundcover area is free of bare spots	4	0	0	0

Measure	Standard Description of Measure	Fail	Poor	Good	Excellent
Pruned	100% of shrubs and groundcover has appropriate size and shape for their location	0	1	3	0
Weediness	90% or more of shrub and groundcover area is free of weeds	1	1	1	1

Important points to note regarding the rating of shrub and groundcover area maintenance in the four parks are noted below.

- Overall, the shrub and groundcover area maintenance at these four parks was evaluated as “poor” to “good”.
- Each of the four parks had shrub and groundcover areas with significant bare spots.
- French and Meadow parks had problems with shrub and groundcover areas containing weeds. Most of the shrub areas in these four parks lacked mulch.
- Some of the shrub areas at French and Islay Hill parks contained dead shrubs.
- **Trees.** Each park was inspected with regard to trees and their health, and the adequacy of trimming including ground clearance. With respect to those conditions, the trees were overall in good condition. The table, below, presents the results.

Measure	Standard Description of Measure	Fail	Poor	Good	Excellent
Limbs	No broken, or hanging limbs impede passage to pedestrians	0	1	2	1
Plant health	All trees are alive and 90% of trees are free from damage such as dead limbs, brown foliage, etc.	0	0	4	0

Important points to note regarding the rating of tree maintenance in the four parks are noted below.

- Overall, the tree maintenance at these four parks was evaluated as “good”.
- Some problems were noted in French and Mitchell parks with dead wood in the trees.
- Almost all of the tree wells / rings in the parks contained weeds and lacked mulch.

- **Hardscape and Walkways.** As with other criteria, the walkways and hardscape of the parks were inspected for cleanliness and conditions. Overall, the walkways and hardscape were clean, free of litter and debris. For the most part, the walkways had few problems and the surfaces were smooth. The table below presents the assessment of the walkways.

Measure	Standard Description of Measure	Fail	Poor	Good	Excellent
Cleanliness	Hardscape (paths, sidewalks, plazas) are free of litter and debris (no more than five (5) pieces of litter in any 25' by 25' area or along 100' line	0	0	3	1
Drainage/ Flooded Area	At least 95% of observed hardscape area is free of standing water	0	0	3	1
Graffiti	Hardscape is free of graffiti	0	0	3	1
Surface quality	Paved surface is free of irregularities in grade greater than one-half inch and free of cracks and holes greater than two (2) inches in diameter and depth	0	0	4	0
Weediness	At least 95% of paved surface is free of weeds	0	0	3	1

Important points to note regarding the rating of walkways and hardscape in the four parks are noted below.

- Overall, the walkways and hardscape at these four parks were evaluated as “good”.
 - Much of the trails at Meadows park needed seal coating or resurfacing. The Park Maintenance Division, as the site manager for each park, should be responsible for assuring that these trails and pathways are seal coated. The Division should work with the Engineering Capital Projects Design to assure that these trails and pathways are seal coated as appropriate.
 - Some of the imprinted concrete at Islay park was displaced; the displacement needed concrete grinding.
- **Athletic Fields.** Parks were inspected with regards to the condition and maintenance of the turf athletic fields i.e., baseball fields. While Mitchell park did not contain an athletic field, the other three parks did. Overall, the condition of the athletic fields was good. The results of the assessment are presented in the table below.

Measure	Standard Description of Measure	Fail	Poor	Good	Excellent
Cleanliness	Turf is free of litter (no more than 15 pieces of litter visible in a 100'	0	0	2	1

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Measure	Standard Description of Measure	Fail	Poor	Good	Excellent
	by 100' area)				
Color	Turf athletic fields are fairly green	0	1	2	0
Drainage/Flooded Area	Turf area is free of standing water	0	0	2	1
Fencing	Fencing is functional, free of protrusions, and free of holes/passages along the base	0	0	2	1
Functionality of Structures	90% of available sport-related structures (such as backstops, goal posts, dugouts, team benches, spectator stands, etc.) are operational for playing or observing sports.	0	0	2	1
Graffiti	Turf athletic fields and their sport-related and support structures are free of graffiti	0	0	2	1
Height/Mowed	Lawns are mowed and kept at a uniform height of less than ankle height	0	0	2	0
Holes	Lawns are free of that are noticeable from a 10' distance (the standard is not met if there are multiple holes or mounds caused by gophers or moles even if the holes are less than six (6) inches in diameter or depth	0	0	3	0

Important points to note regarding the rating of athletic fields in the four parks are noted below.

- Overall, the athletic fields at the three parks were evaluated as “good”.
- The athletic field at French park was being reconditioned at the time of the inspection in November 2010. That is the reason for only two parks being included in the height / mowed condition assessment, and not three.
- There were weeds in the infield at French, Islay Hill, and Meadow parks.
- There was a hole in the backstop at Meadow park.
- **Outdoor Athletic Courts.** Parks were inspected with regards to the condition and maintenance of the outdoor athletic courts i.e., basketball courts, tennis courts, etc. Mitchell park did not have these features, there were common issues among the parks that did. The results of the assessment are presented in the table below.

Measure	Standard Description of Measure	Fail	Poor	Good	Excellent
Cleanliness	Court surfaces are free of litter and debris (no more than five (5) pieces of litter in any 25' by 25' area or along 100' line)	0	0	1	2
Drainage/ Flooded Area	At least 95% of observed hardscape area is free of standing water	0	0	2	1
Fencing	Fencing is functional, free of protrusions, and free of holes/passages along the base	0	0	1	2
Functionality of Structures	90% of available sport-related structures (such as backstops, goal posts, dugouts, team benches, spectator stands, etc.) are operational for playing or observing sports. (Standard is not met if nets of basketball or tennis courts are missing).	0	0	1	2
Graffiti	Outdoor athletic courts and their sport-related and support structures are free of graffiti	0	0	1	2
Painting/ Striping	Play lines are clearly visible and worn painted surfaces do not exceed 20% of total court surface	0	0	1	2
Surface Quality	Noticeable from a ten (10) foot distance, play court is smooth, and free of irregularities in grade deeper than one-half inch and is free of cracks and holes greater than one inch in diameter and depth	0	0	1	2

All of the outdoor athletic courts were in good to excellent condition. The only problem noted was the presence of weeds in the volleyball court at Islay Hill, adjacent gopher holes, and the lack of edging of turf alongside the volleyball court.

- **Children's Play Area.** The children's play areas at the parks were assessed. Three key areas were condition, safety, and the surface under the equipment. The playgrounds were in good condition. The table below presents the condition assessment results relating to children's play areas.

Measure	Standard Description of Measure	Fail	Poor	Good	Excellent
Cleanliness	Children's play area is free of litter, debris, and weeds (no more than ten (10) pieces of litter in any 25' by 25' area or along 100' line). Sandbox is free of all foreign	0	0	2	2

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Measure	Standard Description of Measure	Fail	Poor	Good	Excellent
	debris. The surface in the children's play areas is free of playground sand, where applicable.				
Fencing	Fencing is functional, free of protrusions, and free of holes/passages along the base	0	0	0	1
Functionality of Equipment	At least 80% of intended play equipment is present and functional	0	0	2	2
Graffiti	Play area and equipment are free of graffiti	0	0	2	2
Integrity of Equipment	80% of play equipment is free of deterioration such as rust, rot, splinters, dents, and 100% is free of sharp edges and protrusions. 100% of attachments (such as bolts and screws) are secure.	0	0	2	2
Painting	Painted structures are free of peeling or chipped paint.	0	0	2	2
Surface Quality	Sand is loose (not compacted) and the level is at least 12" in depth. If rubber is used, 100% of rubber surface around playground equipment is present and adjacent rubber surfaces do not exceed 1/4 inch of vertical elevation difference.	0	1	1	1

All of the children's play areas were in good to excellent condition. The only problem noted occurred at the children's play area at Islay Hill park. The safety surface under children's play area contained a number of bare spots and, unlike Mitchell park (wood mulch) and Meadow park (sand), appeared to be a hard surface.

- **Restrooms.** Each park's restroom facilities were evaluated for cleanliness and condition. For the most part, the restrooms were clean and well stocked with paper goods. The table below presents the results.

Measure	Standard Description of Measure	Fail	Poor	Good	Excellent
Cleanliness	Entryway and interior of restrooms are free of litter, debris, and feces (this standard is met if no more than 3 pieces of litter or debris are visible on the floor. The standard is not met if feces, needles, condoms, or broken glass are present in the entryway or interior)..	2	0	1	1

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Measure	Standard Description of Measure	Fail	Poor	Good	Excellent
Cleanliness	Toilets, urinals, sinks, and diaper-changing stations are clean.	0	0	2	2
Graffiti	Restrooms are free of graffiti	0	0	2	2
Functionality of Equipment	All toilets, urinals, partitions, stall walls and doors, diaper-changing stations, water faucets, and sinks are operations and free of leaks.	0	0	2	2
Lighting	90% of lights are operational	0	0	1	1
Odor	Restroom is free of offensive odors	0	0	3	1
Painting	Paint has a uniform coat and is not peeling	0	0	3	1
Signage	Restroom signs are legible, free of graffiti, and properly installed near entrances	0	0	3	1
Supply Inventory	Restrooms are stocked with toilet paper, paper towels.	0	0	3	1
Waste Receptacles	Waste receptacles are clean and not overflowing	0	0	3	1

All of the restrooms were in good to excellent condition with two exceptions: the restrooms at Meadow park and at Mitchell park were not free of litter. Two of the parks had natural lighting. That is why only two parks had lighting evaluated in the condition assessment in the table above. In addition, Mitchell park and Meadow park appear to have been utilized by the homeless, and this usage may have impacted the cleanliness of the rest rooms.

- **Parking Lots.** The parking lots for the parks were inspected for cleanliness, striping, and structural conditions. Mitchell park did not have a parking lot; the three other parks had parking lots. For the most part, the parking lots had few problems and the surfaces were smooth. The table below presents the assessment of the parking lots.

Measure	Standard Description of Measure	Fail	Poor	Good	Excellent
ADA parking spaces	ADA parking spaces are available	0	0	2	1
Cleanliness	Parking lots and roads are free of debris. The standard is not met if needles, condoms, broken glass, and/or feces are present.	0	0	3	0
Curbs	90% of curbs in parking lots and roads are intact (when present)	0	0	3	0
Drainage/Flooded Area	Parking lots and roads are free of standing water	0	1	2	0
Graffiti	Parking lots and roads are free of graffiti	0	0	3	0
Painting/Striping	75% of parking lot and road striping is visible	1	1	1	0

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Measure	Standard Description of Measure	Fail	Poor	Good	Excellent
Signage	Signs are legible, free of graffiti, and properly installed in noticeable locations	1	0	2	0
Surface quality	Parking lots and roads are free of potholes greater than six (6) inches in diameter or depth	0	0	3	0
Surface quality	Parking lots and roads are evenly surfaced.	0	0	3	0

All of the parking lots were in good to excellent condition with two problems. The parking lot at French park had standing water, the parking lot at Meadow park had problems with faded parking stall striping, and the parking lot at Islay park had faded parking stall striping and the park sign was obscured by shrubbery.

The Park Maintenance Division, as the site manager for each park, should be responsible for assuring that these parking lots are seal coated. The Division should work with the Engineering Capital Projects Design to assure that these parking lots are seal coated as appropriate.

- **Waste Receptacles.** The waste receptacles for the parks were inspected for cleanliness, fullness, and maintenance. The waste receptacles at all four of the parks were in good condition. The table below presents the assessment of the parking lots.

Measure	Standard Description of Measure	Fail	Poor	Good	Excellent
Cleanliness of Receptacles	90% of all receptacles are clean and 100% are free of graffiti	0	0	3	1
Cleanliness of Receptacles	Immediate areas surrounding 90% of all waste receptacles are free of litter and debris (This standard is not met if more than 3 pieces of litter or debris are present in the immediate area of any waste receptacle).	0	0	3	1
Fullness	90% of all receptacles are not overflowing	0	0	3	1
Painting	When applicable, 90% of receptacles have a uniform coat of paint, and are not peeling.	0	0	3	1
Structural integrity and functionality	90% of all receptacles are free of large cracks or damage that affect their use.	0	0	3	1

Problems with waste receptacles were not present except for a lack of uniformity in the types of receptacles utilized (metal trash receptacles purpose-built for parks versus trash cans).

- **Benches, Tables and Grills.** The benches, tables, and grills at each of the parks were evaluated for maintenance / condition, availability, litter control, and cleanliness. Overall, the picnic areas were well maintained with limited problems relating to the conditions of the tables and cleanliness of the grills. Ashes and coals were observed in some of the grills, and (in some cases) pine cones in one of the grills at Meadow park. The table, below, summarizes the results.

Measure	Standard Description of Measure	Fail	Poor	Good	Excellent
Cleanliness	90% of available benches and tables are free of litter, dirt, and rust and 90% of all grills are free of litter.	0	0	3	1
Cleanliness	The immediate areas surrounding 90% of all tables, benches, and grills are free of litter and debris (the standard is not met if more than five (5) pieces of litter or debris are present in a 25' by 25' area and/or needles, condoms, broken glass or feces are present).	0	0	3	1
Graffiti	Benches, tables and grills are free of graffiti	0	0	3	1
Painting	At least 80% of the surface of all benches and tables are free of peeling or chipped paint, if applicable.	0	0	3	1
Structural integrity and functionality	90% of benches and tables are structurally sound (no broken slats), properly anchored, and free of sharp edges and protrusions. Grills are operational.	0	0	3	1

Problems were not found with the picnic areas except for the benches at French park that had problems with peeling paint. In this case, these benches were made of metal, and coated with plastic. The plastic had broken off for one of the benches for a significant proportion of the bench; the bench clearly needs to be replaced. Some of the benches at Meadow park, made of wood, were missing slats at the edge for one of benches. Many of the wooden benches at Meadow park needed painting.

- **Amenities and Structures.** The exterior of buildings in parks, drinking fountains, signage, and fencing for each of the parks were evaluated. The table, below, summarizes the results.

Measure	Standard Description of Measure	Fail	Poor	Good	Excellent
Exterior of Buildings	Exterior of building is free of vandalism and graffiti	0	0	3	1
Exterior of Buildings	90% of painting of exterior of building is of uniform color and not	0	0	3	1

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Measure	Standard Description of Measure	Fail	Poor	Good	Excellent
	peeling				
Drinking fountains	Drinking fountains are accessible, operational, and free of standing water and debris	0	0	3	1
Fencing	Fencing is functional, free of protrusions, and free of holes/passages along the base	0	0	3	1
Signage	Signs are legible, free of graffiti, and properly installed in noticeable locations	0	0	3	1

There were no problems other than the shrubs obscuring the entrance sign for Islay park (as noted previously).

* * * * *

Overall, the four parks that were inspected by the Matrix Consulting Group were in good condition, given the lack of funding available for minor capital outlay and the limited funding available for trees, shrubs and nursery stock. This is not stating that the parks are in good condition. This is merely stating that the parks are in good condition, overall, given the lack of funding available for minor capital outlay and the limited funding available for trees, shrubs and nursery stock.

(2) The Public Works Department Should Improve The Management Of Contract Park And Landscape Maintenance.

Why be concerned with effective management of contract park and landscape maintenance? The Park Maintenance Division is budgeted to spend almost \$350,000 annually in park and landscape maintenance services in fiscal year 2010-11. In effective management of these contracts can result in inefficient service delivery and a waste of public funds.

The Trust for Public Lands is a national, nonprofit, land conservation organization that conserves land for people to enjoy as parks, community gardens, historic sites,

rural lands, and other natural places. In an analysis of the outsourcing of park maintenance, *The Trust for Public Lands* noted that “while promising, privatization is not an automatic winner.” *The Trust for Public Lands* stated that for privatization to succeed, a number of pieces must be handled right. Those pieces are noted below.

- **The contracts must be bid properly.** Considering the risk of turning over public lands and services to a private, profit-making institution, it is crucial that all the details of the work product be meticulously spelled out in advance. Moreover, as with all market transactions, the process must be an open one. The only way quality will be kept up and costs kept down is if there are always multiple bidders competing.
- **The facilities must maintained in high quality.** City parks are in competition with numerous other private spaces. Only by being as good as or better than competitors will a program thrive.
- **Public sector oversight must be maintained.** It's not enough for the park agency to sign the contract, and close the file drawer. Contract performance must be continually monitored and evaluated by the park agency.

The existing processes and tools utilized by the Public Works Department for managing park and landscape contract services needs to be enhanced. The Department utilizes informal processes at the present time; these processes need to be formalized. The Department should formalize a process for inspection and monitoring of the contractor's performance in the maintenance of parks, landscaped facilities, and restrooms. Some of the important elements of the procedure are presented in the paragraphs below.

- The Parks Maintenance Technician should perform weekly inspections of a sample of the sites to verify the contractor's performance. If necessary, based on the Parks Maintenance Technician's determination, the contractor may be required to attend these inspections.
- The Parks Maintenance Technician should schedule a mandatory monthly meeting with the contractor to review prior weekly inspection reports and to verify completion of work before authorizing payment to the Contractor.

- The Parks Maintenance Technician should perform periodic, as-needed inspections for the purposes of verifying that the contractor is implementing a corrective maintenance program where necessary.
- The Parks Maintenance Technician should document all weekly, monthly and as-needed inspection cycles on an Inspection Form. The form should indicate maintenance task, frequency and the extent to which the task has been completed satisfactorily.

The processes utilized by the Division for monitoring of the performance of contactors should be expanded.

Recommendation #50: The Public Works Department should enhance the processes and tools used to manage the contracts for maintenance of parks and landscape facilities and cleaning of restrooms.

Recommendation #51: The Public Works Director should direct staff, as appropriate, to develop a formal written procedure for managing park, landscape, and restroom maintenance in consultation with the Parks Supervisor and the Deputy Director / City Engineer.

(3) The Park And Landscape Maintenance Division Should Enhance Its Maintenance Management System.

Why be concerned with effective maintenance management?

The *National Recreation and Park Association* stated that “efficient and effective maintenance operations are critical to the success of an organization’s mission, for several major reasons:

- Enhancement of the recreation experience;
- Economic efficiency;
- Reduced liability;
- Improved public image; and
- Environmental stewardship.¹⁷

In addition, the *National Recreation and Park Association* stated that

¹⁷ National Recreation and Park Association, Management of Park and Recreation Agencies, 2005.

“maintenance workload frequently exceeds the department’s ability to get the job done. Therefore, maintenance managers cannot afford to operate from crisis to crisis, but must continually seek better ways to maintain areas and facilities. The development of a comprehensive, systematic, written maintenance plan is one of the best means of ensuring that the park and / or facility maintenance operation is functioning at maximum efficiency and effectiveness.”¹⁸

The elements required for the development of an effective maintenance plan include: (1) planning the work to be performed through such activities as defining the levels of service to be provided at the different park and landscape facilities; (2) scheduling of the resources necessary for maintenance through such activities as annual and weekly schedules; and (3) monitoring and reporting performance through such activities as park and landscape condition assessments. The foundation for this effort is an automated maintenance management system: EnerGov.

The Division has some of the elements needed for development and installation of a maintenance management system. The GIS Supervisor indicated that much of the park inventory information has already been collected and is available in ArcGIS shapefiles that spatially describe geometries: points, polylines, and polygons. This includes such data as the square footage of turf, the square footage of paved areas, the square footage of shrubs and groundcover areas, etc. The City is acquiring EnerGov, and this will include an Asset Management Suite that will be deployed in the Parks and Landscape Maintenance Division.

There are, however, a number of shortcomings associated with the current approach. These include the following.

¹⁸ National Recreation and Park Association, Management of Park and Recreation Agencies, 2005.

- Service levels have not been formally defined in terms of the level of park and landscape maintenance to be provided based on the type of facility, on the intensity of use, and on local standards.
- An annual work program has not been formally developed defining what specific services are to be provided at what time of the year (i.e., fertilizing, trimming of shrubs, aerating of turf, etc.).
- Quality standards have not been developed for each work task.
- A weekly work schedule has not been developed identifying the amount of time to be spent by task for each Maintenance Worker, the location of the work, etc.
- A formal park and landscape, condition assessment is not conducted periodically to identify deficiencies and needed improvements.

The sections that follow outline a system that can be implemented by the Parks and Landscape Maintenance Division.

- **The Division Should Complete the Inventory of Parks and Landscape Facilities that Are Contained in ArcGIS Shapefiles.** The National Recreation and Park Association stated that a well-formulated maintenance plan should include an inventory of resources. “Develop a detailed inventory of all resources and facilities for which maintenance is responsible.”¹⁹ A maintenance inventory should provide information on each asset that is relevant to its maintenance. For a park and landscape facilities, basic information on both the park and facilities within the park and landscape facilities should be included. For example:
 - Park information should include both the size (developed and undeveloped acres) and location of the parks, utility locations, the square or linear footage of features in the park (such as square footage of turf, square footage of other landscaped areas), linear footage of edging, etc. The park inventory data should be supported by as-built drawings, land plans and geographic data for each park site.
 - Facility information would include the location, square footage, replacement value, and age of each structure or facility, as well as data on structural, electrical, plumbing, and mechanical systems. Again, facility information would be supported by architectural drawings and specifications.
 - Open space information should include the size the facility, the linear feet of trails, the type and square footage of vegetation (i.e., native grassland, domesticated grasses, etc.), etc. The open space inventory data would be

¹⁹ National Recreation and Park Association, Management of Park and Recreation Agencies, 2005.

supported by as-built drawings where available, land plans, and geographic data for each open space site.

- The inventory should be consistent and dovetail with the required GASB 34 requirements.

This basic information is necessary to assess conditions routinely as a precursor to planning, funding, and executing a meaningful asset management strategy. The Division collected some asset information for its parks, but does not have a comprehensive and complete inventory of park and landscape assets that meets these criteria. An example of how the data should be compiled is presented in the table below.

Park Name	Alamo Plaza		
Park Address	300 Alamo Plaza		
Park Classification	Neighborhood		
Total Acres	9.6		
Developed Acres	9.6		
Undeveloped Acres	0.0		
Year Acquired	1956		
Facility / Equipment / Installation	Description of Facility / Equipment / Installation	Linear Feet	Square Feet
Public Buildings	Restroom building	26 x 26	675
Hard Surfaced Game Courts	One asphalt basketball court with two baskets	72.5 x 45	3,265
Walks and Trails	Two internal walkways	5.5 x 111	610
Playground Equipment	One sandbox One bicycle rack Six swing sets One drinking fountain One balance beam One gym climber	28.5 x 17.5	500
Parking Area	One paved parking area with five spaces and one handicapped space	60.6 x 58	3,500
Ball Diamond	One 60' softball diamond with backstop Two bleachers Two dugouts		4,560
Fencing	One chain link fence	740	
Picnic Tables / Grills	30 picnic tables 15 barbecue grills		
Trash cans	6 trash cans		
Turf Area			222,965
Shrub Area			20,395

Groundcover Area			18,000

The Division should complete the documentation of the information in the ArcGIS Shapefiles regarding parks and landscape facilities so that this data can be input into EnerGov, and utilized to program maintenance of these facilities.

Recommendation #52: The Parks Supervisor ~~to~~ should develop a comprehensive inventory of parks and facilities.

Recommendation #53: The Park Maintenance Supervisor should document the information in the ArcGIS Shapefiles regarding parks and landscape facilities so that this data can be input into EnerGov, and utilized to program maintenance of these facilities.

- **The Park Supervisor Should Develop Service Level Standards for the Maintenance of the City's Park System.** The National Recreation and Park Association stated that a well-formulated maintenance plan should include task frequencies. "Determine the frequency with which each task is completed. Tasks should be reduced to their simplest component, and task frequencies should be established at the minimum level (annual, biannual, monthly, weekly, daily, hourly, etc.)."²⁰ Levels of park maintenance will vary depending on the type of facility, intensity of use, and on local standards. For example, parks that are widely used for a variety of leisure activities generally will require a higher level of maintenance than passive neighborhood parks. This means that different levels of service will 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.

An example for tennis courts and how this level of service could vary is presented below. The levels of service for tennis courts that vary are the frequency of the sweeping of the courts, the frequency for repainting the lines, and the frequency for replacing the nets. These levels of service vary depending upon the type of usage of these tennis courts – courts used for tournaments, courts at community parks, and courts at neighborhood parks.

Maintenance Item	Maintenance Standards		
	Tournament – high quality courts for use by better players for tournaments and normally serve the entire City	Recreation – courts provided in good condition suitable for average players normally serve a region	Neighborhood – courts suitable for beginning players and serve a neighborhood
Number of courts	3 or more provided in a grouping	3 or more provided in a grouping	1 or 2, preferable 2 in a grouping
Nets	Nylon or fabric replaced each year	Nylon or fabric, replaced as needed	Nylon

²⁰ National Recreation and Park Association, Management of Park and Recreation Agencies, 2005.

Maintenance Item	Maintenance Standards		
	Tournament – high quality courts for use by better players for tournaments and normally serve the entire City	Recreation – courts provided in good condition suitable for average players normally serve a region	Neighborhood – courts suitable for beginning players and serve a neighborhood
Surface	Colored asphalt, swept weekly, no cracks larger than ½”	Asphalt or concrete, preferably colored, surface swept monthly, no cracks larger than 1”	Asphalt or concrete, surface swept once per season, no cracks larger than 1 and ½ “
Lines	Repainted annually	Repainted every 2 years	Repainted every 3 years
Benches	Player benches provided	Player benches provided	None
Lighting	Provided, intensity minimum outdoor 30 foot candle	Provided when possible, intensity outdoor 10 to 20 foot candle	None
Spectator seating	Provided for special events	None	None
Wind screening	Provided	None	None
Bounce wall	None	At least one court size provided	None

The Public Works Department has already developed levels of service for its park and landscape maintenance contract. These include the following levels of service:

- Level 2 - High level maintenance associated with well developed public areas, malls, government grounds with weekly maintenance;
- Level 3 - Moderate level maintenance associated with locations that have moderate to low levels of development or visitation with maintenance every two weeks;
- Level 4 - Moderately low-level maintenance associated with areas that have moderate to low levels of development or visitation with monthly maintenance; and
- Level 5 - Minimum level maintenance as needed.

Each of these service level alternatives defines the frequency with which maintenance services are to be provided by the contractor. For example, service level 2 specifies the frequency of maintenance as noted below.

- Walkway and Turf Maintenance: Perform all aspects of walkway and mowing and edging work of turf maintenance once every five working days.
- Aeration: Complete aeration routinely to maintain vigorous turf but not less than two times per year.

- Reseeding / sod: Reseed or install sod in bare spots for areas larger than 4 square feet.
- Fertilizer: Apply adequate fertilizer to ensure all plants are healthy and growing vigorously. Amount depends on species, length of growing season, soils and rainfall. Rates should correspond to at least the lowest recommended rates. Distribution should ensure an even supply of nutrients for the entire year. Trees, shrubs, turf and flowers should receive fertilizer levels to ensure optimum growth.
- Weed Control: Weed control practiced when weeds represent more than 5% of the turf area.
- Litter Control: Complete all aspects of Litter Control, at minimum, 3-5 days per week as needed so high use areas are clean.
- Tree, Shrub and Groundcover Maintenance: Complete all aspects of tree, shrub and groundcover maintenance for health, safety, and to maintain a neat, well maintained appearance, and maintain walkway and other clearances. Sculpted hedges or high growth species may dictate a more frequent requirement than most trees and shrubs in natural growth plantings.
- Disease and Pest Control: Disease and pest control shall be performed as needed to prevent loss or disfiguration of vegetation.
- Surfaces: All surfaces are to be maintained in a clean condition. Surfaces are walkways, sidewalks, stairs, tops of planters, etc.

The Parks Supervisor should adapt these service level standards for use and application for those parks and landscaped facilities maintained by the Division's staff. These service levels should be developed as a formal written policy and provided to the staff of the Parks and Landscape Maintenance Division. The levels of service should include baseball / soccer fields, playground equipment, safety inspections, tennis courts, drinking fountains, mowing, edging, fertilizing (turf, bedding plants, trees and shrubs), checking irrigation systems, litter control, garbage collection, tree maintenance including small tree trimming, etc.

Recommendation #54: The Park Maintenance Supervisor should develop formal service level standards appropriate for each of the parks maintained by the staff of the Parks and Landscape Division. These service level standards should be provided to the staff of the Division.

- **The Park Maintenance Supervisor Should Develop Quality Standards for the Maintenance of the City's Parks.** The National Recreation and Park Association stated that a well-formulated maintenance plan should include

qualitative standards. "Once a comprehensive inventory has been completed, it is then necessary to establish qualitative maintenance standards for each listed item. In simple terms, a qualitative standard is a clear and accurate description of how an area, resource, facility, piece of equipment, or support component should look after maintenance has been completed."²¹ Quality standards are designed to express the results expected in the maintenance of the City's park and landscape facilities. The standards are stated as "end products". The standards are 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. An example of these standards is presented in the exhibit on the following page.

Recommendation #55: The Park Maintenance Supervisor should develop quality standards for the maintenance of the City's park system.

- **The Parks Supervisor Should Develop an Annual Calendar.** The National Recreation and Park Association stated that a well-formulated maintenance plan should include the organization of tasks. "For each task, project that period of the year when the task should ideally be completed."²² The service levels for maintenance of parks and landscape facilities should serve as the basis for the development of an annual calendar by the Parks Supervisor. The annual calendar is designed to serve as the broad framework for tasks that are performed seasonally. It designates the approximate months in which maintenance operations will be performed and serves as a reference in planning the seasonal work program insuring the scheduling and accomplishment of work. The development of an annual calendar takes into consideration two major questions:
 - What type of seasonal work is needed to provide the desired levels of service to the public? For example, for parks maintenance this would include such work activities as renovating and reseeding, fertilizing, application of pre-emergent's, aerifying, etc.
 - When will these services need to be provided? This requires defining the frequency with which work activities are performed annually (e.g., aerifying turf areas shall be accomplished twice annually, but four times annually for sports fields).

²¹ National Recreation and Park Association, Management of Park and Recreation Agencies, 2005.

²² National Recreation and Park Association, Management of Park and Recreation Agencies, 2005.

Exhibit 5 (1)

Sample Park Quality Standards

1. Sand Volleyball Courts

A. Nets

1. Nets are free from holes and are not torn or tattered.
2. Nets are hung tightly at the specified height.
3. Nets are securely attached to the support poles.
4. Support poles to have hardware intact, properly anchored and installed.

B. Surface

1. Court surface is loose sand.
2. Surface is smooth with good drainage and no standing water.
3. Surface is free of weeds, grass, litter, and debris.

C. Borders

1. Borders are well defined and intact.
2. Borders meet ASTM and National Playground Safety Institute standards.

2. Picnic Units

1. Tables are clean, free of rust, mildew, and graffiti.
2. Table hardware is intact.
3. Table frames are intact, and table and bench slats are all present, structurally sound and properly secured.
4. Table seats and top are smooth with no protrusions and have no exposed sharp edges or pointed corners.
5. Grills are operational and free of rust and metal deterioration.
6. Grills are clean and free of grease build-up and ash.
7. Grill racks are operational and secured to main body.
8. Grills are properly anchored to reduce hazards and theft.
9. Underbrush, low limbs, and debris are cleaned away from grill area to reduce possible fire hazard.
10. Trash receptacles are clean.
11. Wood trash receptacles are painted and free of damaged or missing parts.
12. Hardware for wood receptacles is intact.

3. Athletic Fields.

A. Turf

1. Turf has a healthy, dense stand of grass and coverage is no less than 95% of playable area.
2. Play area has a uniform surface and is well-drained.

Exhibit 5 (2)

3. Turf is mowed at the appropriate height for the type of grass used, the season, and the type of field.
4. Turf is edged.
4. Turf is free of litter and debris.
5. No gopher infestation or uneven, bumpy turf surfaces due to gopher damage.

B . Skinned Infields

1. Infields have a uniform surface are free of lips, holes, and trip hazards.
2. Infields are well drained with no standing water areas.
3. Infields have proper soil consistency for intended usage.
4. Infields are free of weeds and grass
5. Infields are free of rocks, dirt clods, and debris.
6. Bases and plates are properly installed, level, and are at the proper distances and anchored in accordance with manufacturer's specifications and league requirements.

C. Soccer Goals

1. Goals are properly installed and anchored.
2. Goals show no excessive bending.
3. Nets are supplied and maintained by the leagues

D . Bleachers

- 1 Hardware is intact.
2. Bracing is tightly connected.
3. Seating surface is clean, smooth, and free of protrusions and has no exposed sharp edges or pointed corners.
4. Bleacher areas have clean trash receptacles present and are in good condition.

E. Sports Lighting

1. Electrical systems and components are operational and in compliance with appropriate building codes.
2. 100% of lamps for each field are operational.
3. No electrical conducting wires are exposed.
4. Ballast boxes and components are properly installed and secured.
5. Lights provide uniform coverage on facilities.

An annual calendar needs to be developed within EnerGov that will not only guide the Division in prioritizing and performing specific tasks, but will provide the Parks Supervisor with a document to hold staff accountable for results. Examples of the tasks to be included in an annual schedule are presented in the table below.

Task	Frequency	When Task is Performed
Aeration of turf	Twice annually	March and September
Fertilization of turf	Twice annually	March and September
Rototilling sand in volleyball court	Four times annually	May, June, July, and August
Power washing tennis courts	Twice annually	June and September
Spraying pre-emergent herbicide	Twice annually	October and January

The annual calendar should list all major routine (work, indicating in a concise chart format when the operation should be performed. It should include such seasonal tasks as cultivation and soil amendment of shrub and flower beds, planting of shrubs and groundcover, aeration of soil, lawn renovation, fertilization of turf, groundcover, and shrub beds, weed control, pruning of shrubs and ground clearance of trees, etc.

Recommendation #56: The Parks Supervisor should develop an annual calendar for park maintenance activities.

- **Route-Based Schedules and Work Orders Should Be Developed Using EnerGov.** The National Recreation and Park Association stated that a well-formulated maintenance plan should include the scheduling of tasks. "Tasks and projects can now be scheduled into the weekly or monthly calendar. Data regarding tasks performed, location, and hours used are gathered and maintained daily."²³ The Park Maintenance Supervisor should prepare a bi-weekly schedule for the maintenance Workers and the Park Maintenance Technician. This is the most critical component of the use and application of EnerGov and the Asset Management Suite. These bi-weekly schedules should establish a timetable for what is to be accomplished by specific staff on a specific day at a specific location.

The bi-weekly schedule developed within EnerGov should rely on route sheets and work orders. Route sheets, or route-based work orders, should be utilized for the routine work that is performed each week in multiple locations in the maintenance of parks and landscaped areas using a single work order issued by EnerGov. An example of a route sheet is presented on the following page.

Work orders should be issued using EnerGov for that work that is not routinely performed each week such as aerifying turf, fertilizing turf, trimming trees in

²³ National Recreation and Park Association, Management of Park and Recreation Agencies, 2005.

parks, etc.

The development of these schedules is designed to formalize an existing informal system, assure consistency in the delivery of services by Maintenance Workers, and enhance accountability.

Recommendation #57: The Park Maintenance Supervisor should develop a bi-weekly schedule that relies on route sheets and work orders.

Recommendation #58: Route sheets, or route-based work orders, should be utilized for the routine work that is performed each week in multiple locations in the maintenance of parks and landscaped areas using a single work order issued by EnerGov.

Recommendation #59: Work orders should be issued using EnerGov for that work that is not routinely performed each week such as aerifying turf, fertilizing turf, trimming trees in parks, etc.

- **Park Condition Assessments Should Be Conducted by the Park Supervisor Every Six Months and Work Orders Generated To Correct Deficiencies.** The National Recreation and Park Association stated that “each organization should have a preventive maintenance program including regularly scheduled inspections and careful safety checks for each facility. Preventive maintenance is a technique for planning maintenance using a system of periodic inspections and routine replacement of critical parts to identify and correct faulty conditions. The objective is to minimize breakdowns and maximize availability. A preventive maintenance program that involves a planned and proactive approach to maintaining recreational areas, facilities, and equipment – rather than a reactive, crisis-to-crisis management style – should be the primary focus of every park and recreation maintenance program.”²⁴ An ongoing park and landscape condition inspection is necessary for planning preventive and corrective maintenance. The inspection should be based on assuring adherence to the quality standards developed by the Park Supervisor. Scheduled visual inspection of all components of parks and landscaped areas provides data that can be used for assigning priorities and estimating costs for minor capital expenditures, and evaluating the performance of the staff of the Division.

It ensures that unmet maintenance needs are documented and provides data for setting priorities and evaluating the performance of maintenance activities.

²⁴ National Recreation and Park Association, Management of Park and Recreation Agencies, 2005.

Exhibit 6

**Sample Park Maintenance
Route Schedule**

Task	Location	Mon	Tue	Wed	Thu	Fri	Mon	Tue	Wed	Thu	Fri
Job preparation	Corporation Yard	X	X	X	X	X	X	X	X	X	x
Pick up litter	Santa Rosa Park	X	X	X	X	X	X	X	X	X	x
Empty trash cans	Santa Rosa Park	X	X	X	X	X	X	X	X	X	x
Backpack blow hardscape, bleachers, benches, basketball court, tennis court, and parking lot.	Santa Rosa Park		X		X			X		X	
Safety inspect children's playground	Santa Rosa Park				X					X	
Test irrigation system	Santa Rosa Park				X					X	
Weed and cultivate shrub and groundcover beds	Santa Rosa Park			X					X		
Weed and cultivate tree basins				X					X		
Mow and edge turf	Santa Rosa Park		X					X			
Drag and water ball diamond infields	Santa Rosa Park					X					X
Rake / level fence lines and infield perimeters. Service base anchors.	Santa Rosa Park					X					X
Clean picnic tables and BBQ Grills	Santa Rosa Park				X					X	

The Parks Supervisor should issue work orders to correct problems identified during his condition assessment of parks. This should be done on a formal basis through the issuance of the work orders and by producing a monthly report identifying the work orders, their priority, and the status of resolution. The monthly report should include the work order, the location of the work order, the date the work order was issued to correct the problem, the resolution or current status of the problem, and any necessary follow-up. This should all be accomplished within EnerGov.

Recommendation #60: The Parks Supervisor should conduct park condition assessments every six months and issue work orders to correct problems identified during his condition assessment of parks.

(4) The Parks And Landscape Division Should Develop A Five-Year Minor Capital Program For Parks And Landscaped Facilities for Minor Capital Outlay.

The Trust for Public Land 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.”

In fact, the Government Finance Officers Association (GFOA) considers infrastructure replacement planning and funding to be a “best practice”. GFOA’s *Best Practices In Public Budgeting Practice 5.2* states that “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.”²⁵

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, Parks and Landscape Maintenance should be charged with identifying the necessary improvements to maintain the quality of parks, including capital costs, a priority plan for these improvements, and a five-year minor capital outlay plan for these improvements for consideration of the Public Works Director and the City Manager.

Possible operating and capital improvements, **based on inspections conducted in 2008 by the Parks and Landscape Maintenance Division**, that should be considered for this infrastructure preservation plan are presented in the exhibit at the end of this chapter.

These are illustrative and necessary projects. There are, however, many other needs within the parks system. The Parks and Landscape Maintenance Division should develop a five-year plan for these improvements.

Recommendation #61: The Park Maintenance Supervisor should develop a prioritized five-year minor capital outlay plan for parks and landscape facilities.

(5) The Public Works Department Should Expand The Sources Of Revenue And Other Resources For Park And Landscape Maintenance.

The City has adopted Quimby fees to fund park development. The City has also developed procedures for accepting donations.

“However, it is notably more difficult to fund improvements to existing aging systems and facilities in urban areas. Redevelopment, using property tax increment financing, has been an extremely effective tool to address these needs. But the use of redevelopment is strictly limited to blighted areas. With complex procedures and

²⁵ Governmental Finance Officers Association, Best Practices in Public Budgeting, 1998.

limitations imposed by the state's voters, local communities face two-thirds supermajority vote requirements for special taxes, including parcel taxes or any tax dedicated to a specific purpose. GO bonds, which may be supported from existing resources or from an ad valorem property tax increase, also require two-thirds voter approval. Assessments and property-related fees have their own cumbersome restrictions and are not easily applied to address existing infrastructure deficiencies."²⁶

As a consequence, cities have to be increasingly creative and assertive in developing new revenue sources to address existing infrastructure deficiencies. These include measures beyond those utilized by the City at the present time to fund park infrastructure.

The Public Works Department should develop funding and revenue strategies for park and landscape maintenance. The Department should develop these strategies to address the challenge created by diminishing funds (in real and inflation adjusted terms) to support operations. Park agencies draw on many sources of revenue to help them acquire parkland, develop parks and facilities, and maintain parks, from a variety of revenue options. The following are examples of revenue options that should be considered by the Department.

- **Park Impact Fees:** These fees are attached to the cost of new residential development based on the square footage or number of bedrooms per unit to generate funds for park acquisition and development. Impact fees typically range from a low of \$500 dollars per unit to a high of \$9,000 dollars per unit and should be periodically updated to address market rates and land values. The City, while it does charge a Quimby fee, does not avail itself of park development impact fees. Quimby Fees can be collected from residential subdivisions for park or recreational purposes. However, Quimby fees **cannot** be collected from commercial developments, apartment projects, or subdivisions of fewer than five (5) parcels. To ensure that such development mitigates its

²⁶ Michael Coleman, The Road Ahead for Funding City Infrastructure Needs, Western Cities, November 2007.

parks impacts, an equivalent AB 1600 fee could be collected. Also, there is authority for the proposition that Quimby fees can only be based on the value of unimproved land, and not include park improvements. Cities will often adopt an AB 1600 impact fee to “fill in the gap” left by Quimby. Also, Quimby fees cannot be used to maintain parks or recreation facilities, only for the initial development. Therefore, under this approach, cities could have three separate fees that relate to park and recreation facilities: (1) a Quimby fee applicable to residential subdivisions for the purchase of park or recreation acreage, (2) an AB 1600 fee applicable to commercial, condominium and residential developments of fewer than five parcels for the same purpose, and (3) an AB 1600 fee applicable to all new development for the construction of park improvements.

- **Corporate Naming Rights:** In this arrangement, corporations invest in the right to name an event, facility, or product within a parks system in exchange for an annual fee, typically over a ten- year period. The cost of the naming right is based on the impression points the facility or event will receive from newspapers, TV, Websites, and visitors or users. Naming rights for park facilities are typically attached to sports complexes, amphitheaters, recreation centers, aquatic facilities, stadiums, and events.
- **Corporate Sponsorships:** Corporations can also underwrite a portion or all of the costs of an event, program, or activity based on their name being associated with the service. Sponsorships typically are title sponsors, presenting sponsors, associate sponsors, product sponsors, or in- kind sponsors. Many cities seek corporate support for these types of activities.
- **Maintenance Endowment Fund:** This is a fund dedicated exclusively for parks maintenance, funded by a percentage of user fees from programs, events, and rentals.
- **Nonprofit Organizations:** Nonprofit organizations can provide support for open space and parks in various ways. Examples include:
 - **Conservancy or Friends Organization:** This type of nonprofit is devoted to supporting a specific park.
 - **Land Trust:** Land trusts are nonprofits focused on open space preservation. In Atlanta, the Trust for Public Land and Conservation Fund helps to facilitate open space acquisition by the City, but it does not own land and easements outright. Project Greenspace proposes establishment of a new land trust dedicated to acquiring and managing open space in Atlanta.
 - **Conservation District:** Conservation Districts operate like a land trust, but are set up to protect specific property areas with high open space value, such as watersheds or sensitive natural areas. The conservation

district's role is to provide landowners with tax benefits to allow their properties to be preserved as part of the district.

- **Parks Foundation:** Established to support system- wide parks and recreation needs, park foundations have helped many cities across the nation to acquire land and develop parks. For example, the Parks Foundation of Houston raises \$5 million annually, on average, for land acquisition and park improvements.
- **Greenway Foundations:** Greenway foundations focus on developing and maintaining trails and green corridors on a citywide basis. The City of Indianapolis Greenway Foundation develops and maintains greenways throughout the city and seeks land leases along the trails as one funding source, in addition to selling miles of trails to community corporations and nonprofits. The development rights along the trails can also be sold to local utilities for water, sewer, fiber optic, and cable lines on a per mile basis to support development and management of these corridors. King County in the Seattle area has done a very good job in accessing this funding source for greenway development.
- **Volunteer Services.** Cities such as Oakland make extensive use of volunteers given the limitations of general fund revenues. Options available are portrayed below.
 - **Adopt- a- Park:** In this approach, local neighborhood groups or businesses make a volunteer commitment to maintaining a specific park. Adopt- a- Park arrangements are particularly well- suited for smaller parks that are less efficient for a parks department to maintain.
 - **Neighborhood Park Initiatives:** These are formal or informal initiatives by local groups to address the needs of an individual park.
 - **Adopt- a- Trail:** This is similar to Adopt- a- Park but involves sponsorship of a segment of a trail (e.g., one mile) for maintenance purposes.

Recommendation #62: The Public Works Director should direct the preparation of a City Manager Report for the consideration of the Public Works Director, Finance Director, and City Manager regarding how funding sources and other resources available for park maintenance, rehabilitation, and development could be expanded. Upon consideration, these alternatives should be presented to the City Council for its deliberation.

(9) There Are No Opportunities for Cost Reductions Within the Park Maintenance Division Without Reductions In the Level of Service and There Are Not Any Observable Redundancies in Service Delivery.

The City has been in a cost reduction mode for six of the past eight fiscal years. This reduction is apparent in the annual operating budget of the Division; 67% of the fiscal year 2010-11 budget is salary and benefits (excluding utilities). Other line-item budgets have been reduced. For example, the budget for minor capital outlay has been eliminated.

Furthermore, there are no observed redundancies in the Division. That is, the Division is not consistently delivering services that are also delivered by other Divisions in the Public Works Department.

(10) The Park Maintenance Division Utilizes Appropriate Equipment and Technology With Some Exceptions.

The Division is appropriately equipped to conduct its work. It utilizes the same type of equipment that other cities utilize, and that enable its efficient delivery of services. This includes riding mowers, power edgers, tractors, fertilizer spreaders, field preparation machines, flail mowers, overseeders, etc.

However, in November 2009, *International Sports Turf Consulting* evaluated the condition of the sports fields at Damon Garcia. *International Sports Turf Consulting* recommended additional equipment to reduce staff hours required for the maintenance of sports fields. The recommended acquisitions are noted below.

- Purchase an Aerway aerator. This machine has a 100 gallon ballast tank on top for weight, a greens roller at the back to smooth down turf that might be rough after it passes, a 7" fracturing tine that can fracture as deep as 10" under the right conditions and a 6' turf tine that should be used at least monthly to maintain soil percolation in high wear areas.

- Purchase a new over-seeder machine for the annual overseeding that is approximately 3 times faster than your current machine.
- Acquire a 16' rotary mower that would cut your mowing time dramatically each time. Since *International Sports Turf Consulting* called for more frequent mowing, this can help offset the increased manpower costs.

The one-time cost of this equipment is presented in the table below.

Recommendation	One-Time capital Outlay
Acquire an Aerway aerator, a new over-seeder and a 16" rotary mower.	\$29,200

Recommendation #63: The Public Works Department should acquire additional equipment to reduce staff hours required for the maintenance of sports fields.

(11) The Park Maintenance Division Should Identify Alternatives To Reduce the Use of Irrigation Water.

The cost of City water represents 22% of the fiscal year 2010-11 operating budget for the Park Maintenance Division. The Division has initiated a number of alternatives to reduce the use of irrigated water for its parks and landscaped areas.

The Division should further evaluate opportunities to reduce the use of irrigated water, and develop a written proposal for the consideration of the Public Works Director and the Office of the City Manager that identifies the costs and benefits of reducing the use of irrigated water. This option strives to improve the character of our community by utilizing smart growth principles. Turf is water intensive, and San Luis Obispo could benefit visually, environmentally and financially if water usage were reduced. A viable strategy would be to replace regions of existing sod with native grasses or plants.

In addition, maintenance practices should be evaluated. In the evaluation of the Damon Garcia sports field, *International Sports Field Consulting* noted that the irrigation water costs alone account for \$7,345 per acre per year which was nearly

double what the consultants normally saw and ten times the rate the consultants normally saw for reclaimed water. This has more to do with the water rate than water usage. Scenario # 4 in their analysis included approximately a 20% savings in water costs that came from the combination of much more aeration of compacted soils, fertigation and switching to the water saving Hybrid Blue grasses.

Recommendation #64: The Park Maintenance Supervisor should further evaluate opportunities to reduce the use of irrigated water, and develop a written proposal for the consideration of the Public Works Director and the Office of the City Manager that identifies the costs and benefits of reducing the use of irrigated water replace regions of existing sod with native grasses or plants, and enhanced maintenance practices.

(12) The Park Maintenance Division Should Evaluate Opportunities to Reduce the Level of Service and the Costs of Maintenance of Sound Walls, Frontages, and Medians.

The City spends \$90,473 annually for contractual maintenance of sound walls, frontages, and medians. In addition, these landscaped areas require irrigated water: another expense.

The City of San Jose, California adopted a policy regarding the maintenance of sound walls, frontages, and medians. That policy states that, if a landscape and lighting district does not fund the costs of maintenance, the City will only plant sound walls frontages, and medians with trees and paved / composted surfaces. If a landscape and lighting district does fund the costs of maintenance, the sound walls frontages, and medians would include trees, shrubs, groundcover, and / or paving materials.

Given the significant financial challenges facing the City, the Parks Supervisor should develop a policy for the consideration of the Public Works Director, the Office of the City Manager, and the City Council that would establish a differential level of

service for those sound walls, frontages, and medians whose maintenance cost is funded via a landscape and lighting district versus those that are not. The policy should state that the sound walls frontages, and medians funded by a landscape and lighting district will be maintained at a higher level of service. Those funded by the general fund will be maintained at a lesser level of service, and converted, in the long-term, to trees and paved / composted surfaces only: it would not include shrubs and groundcover.

In addition, that policy should require that all future developments within the City that include sound walls frontages, and medians that will be dedicated to the City for maintenance by the City require the formation of a landscape and lighting district to fund the maintenance of these facilities.

Recommendation #65: The Parks Supervisor should develop a policy for the consideration of the Public Works Director, the Office of the City Manager, and the City Council that would establish a differential level of service for those sound walls frontages, and medians whose maintenance cost is funded via a landscape and lighting district versus those that are not. The policy should also require that all future developments within the City that include sound walls frontages, and medians that will be dedicated to the City for maintenance by the City require the formation of a landscape and lighting district to fund the maintenance of these facilities.

(13) The Park Maintenance Supervisor Should Report in a Formal Written Memorandum the Status of the Implementation of the Recommendations Regarding the Damon Garcia Sports Fields.

In November 2009, *International Sports Turf Consulting* evaluated the condition of the sports fields at Damon Garcia. *International Sports Turf Consulting* made a number of recommendations regarding these sports fields as noted below.

- The Park Maintenance Division must dramatically increase its maintenance level of the sports field that primarily involves an increase is in the number of aerations, fertilizations and mowings. This included
 - Deep-tine or shatter-tine aeration at least once annually to relieve and prevent deep compaction;

- Annual Top dressing to re-level the field and to replace used up organics to the soil;
 - Monthly applications of fertilizer or fertigation to grow grass as fast as it is being worn off;
 - Mowing 2-3 times a week during periods of high use because of the higher growth rate; and
 - Knife aeration at least monthly.
- Continue to replace or repair the irrigation system on these fields where this is not adequate to deliver the correct amount of water with matched precipitation. Turf cannot mend itself under the sports fields high wear conditions without this.
 - Consider implementing a lower wear time each year during the slower recuperative times from December through January for healing damaged turf. The Division already did this in June and July and this should become a policy to prevent user groups from getting around any maintenance plan for recovery during the down time.
 - Fertigation is the best and cheapest way to increase wear-ability while decreasing manpower. The growing season is 8 to 10 months long, but the Division is only fertilizing most sites 2 to 3 times a year. Turf must have nitrogen in the leaf for the plant to defend itself. This means that there are many months when sports field turf is unable to defend itself. Crop Production Services will make up a liquid product for these fields that is customized to add as many things as we possibly can through the fertigation system.
 - Over-seed the sports fields with a very aggressive Kentucky Blue grass and Texas Blue grass seed blend.
 - Use growth control products (Primo) to greatly enhance the sports field maintenance program. This type of product takes the energy produced by fertilization and mowing and causes the turf to mend much more quickly and to send roots down deep. It will normally cut mowing in half however in most cases you would need to add one or two mowing per week to keep up with the wear. You should be able to maintain these sites with 1.5 to 2 mowings per week but have substantially deeper roots and quick mending turf.
 - Use a product called sodium blocker to move the sodium in the reclaimed water and in the soil out of the root zone so it can't affect the turf. It can be put in the fertigation tank with the regular fertilizer and applied at the appropriate rate. The consultants noted that sodium accumulation is the one that is of most concern in the soil analysis, but the sodium blocker should reverse this.

- Renovate the sports fields. The fields that have bad grades and or poor irrigation systems will need to be renovated for sustainable turf. This requires the renovation of this site with a new drain system and a no-till renovation system. The cost would approximate \$1.50 per square foot if the irrigation system is still working properly.
- Use a Sports Users Committee for this site or better yet Citywide. Users are dumbfounded to discover that they are part of the problem (wear on the fields and when they want to use them). Once they realize this, users understand now that this is not just the City's problem but their problems as well and are willing to try to help.
- *International Sports Turf Consulting* developed an Annual Calendar for the Damon Garcia Sports Fields that lays out every aspect of maintenance for the year.

The Parks Maintenance Supervisor should develop a status report for the consideration of the Public Works Director regarding the status of the implementation of each of the recommendations. For those recommendations with an operating or capital expense associated with the recommendation, the Park Maintenance Supervisor should develop a budget request for fiscal year 2011-12. In addition, the Park Maintenance Supervisor should report the status regarding the extent to which the tasks defined in the annual maintenance calendar are being consistently accomplished.

Recommendation #66: The Parks Supervisor should develop a status report for the consideration of the Public Works Director regarding the status of the implementation of each of the recommendations in the report developed by the *International Sports Turf Consulting* regarding the maintenance of sports fields at Damon Garcia. For those recommendations with an operating or capital expense associated with the recommendation, the Park Maintenance Supervisor should develop a budget request for fiscal year 2011-12.

Recommendation #67: The Parks Supervisor should report the status regarding the extent to which the tasks defined in the annual maintenance calendar are being consistently accomplished.

(14) The Park Maintenance Division Should Work With the Utilities Department

To Mitigate the Impact of Recycled Wastewater on Plant Material in Parks That Are Irrigated with Recycled Wastewater.

In the face of California's rapid population growth, the competition and cost for increasingly limited water resources have necessitated the use of recycled water for landscape irrigation, particularly in urban areas. The first wastewater treatment plant used solely for recycling and reuse of water was built in San Francisco in 1932. Today, wastewater is recycled at over 300 locations throughout California for agricultural and landscape irrigation, ground water recharge, and industrial use. The California Water Reuse Board estimated that by the year 2010, landscape irrigation would account for the second largest use of recycled water next to groundwater recharge.

After treatment, sodium chloride is the only chemical compound remaining in recycled water that is potentially detrimental to landscape plants. Other elements such as boron, selenium, magnesium, and cadmium are rarely found to be above safety limits.

It appeared to the consulting team that the use of recycled wastewater impacted turf quality at French park. This may be the result of sodium chloride.

The consulting team recommends that the Park Maintenance Division and the Utilities Department work together to develop specific measures to address this problem. This could include the use of a product called sodium blocker, as noted earlier, to move the sodium in the reclaimed water and in the soil out of the root zone so it can't affect the turf. It can be put into a fertigation tank with the regular fertilizer and applied at the appropriate rate. It could also include replacement of plants with plants that are tolerant of sodium such as Ceanothus, Rose, Trumpet Vine, and

Nandina. The costs associated with sodium blocker and the replacement of plant materials should be the burden of the Utilities Department.

Recommendation #68: The Park Maintenance Division and the Utilities Department work together to develop specific measures to address the use of recycled wastewater and its impact on plants in parks. This should include the consideration of odium blocker and the replacement of plant materials. The costs associated with sodium blocker and the replacement of plant materials should be the burden of the Utilities Department.

(15) The Park Maintenance Division Should Develop a Service Level Agreement with the Parks and Recreation Department.

The Parks and Recreation Department is a primary customer of the services provided by the Park Maintenance Division. The Park Maintenance Division and the Department should work together to develop a service level agreement for the services provided by the Division on behalf of the Department.

A service level agreement (SLA) is a contract between a service provider and a customer that specifies, in measurable terms, the services the provider will deliver to the customer. This SLA includes:

- The services to be provided by the service provider (Park Maintenance);
- The response time and priorities for problem resolution, performance levels to be provided, system availability, responsiveness etc.;
- A quality agreement using a set of agreed metrics such as the service levels to be provided;
- The responsibilities of the customer i.e., scheduling and use of sports fields; and
- The responsibilities of the service provider, the rights of the customer (the parks and Recreation Department), and procedures to be used if the service provider violates any element of the SLA.

There has been a degree of conflict between the Public Works Department and the Parks and Recreation Department previously. In fact, a study of the Parks and

Recreation Department recommended that the Park Maintenance Division be transferred to the Parks and Recreation Department. Rather than move organizational boxes, the Park Maintenance Division and the Department should work together to develop a service level agreement for the services provided by the Division on behalf of the Department. It should also include the Park ranger services provided by the Parks and Recreation Department.

Recommendation #69: The Park Maintenance Division and the Parks and Recreation Department should work together to develop a service level agreement for the services provided by the Division on behalf of the Department.

Exhibit 7 (1)

**Potential Parks and Landscape
Maintenance Minor Capital Projects**

Islay
The paths are in high need of repairs. There is a sewer manhole that would have to be accessed by the paths in addition to park activities.
The sand volleyball court is slowly being buried on the south end due to wind blown sand creating a hump along the edge which grows over with turf. It gives the appearance that the edge was constructed too low.
Play equipment surface needs repair or replacement.
Sand is needed in some areas but could possibly be replaced by wood fiber.
French
Horseshoe pits do not have good surfaces for play.
Turf around play area is in need of renovation due to years of sand accumulation.
Sand box sand is heavily accumulated outside the box in the wood chips.
Sand volleyball court is attracting a stinging insect which nests in the sand.
Two tables still show signs of vandalism – bent benches.
Restroom doors are marked up and scratched.
Trash enclosure dumpster was permanently removed due to unauthorized use. Still get some dumping in the enclosure area. Revamp area.
Drainage is a problem in the first baseline area – a combination of bad drainage and irrigation system configuration
Johnson
Parking lot used by the YMCA has curb damage.
Laguna Lake
Several places where there is shoreline erosion.
The drainage swale from the large open field between the play area and the gazebo, drains to a small grated inlet that is directly under eucalyptus trees and so plugs very quickly.
The cistern next to the lake is collecting trash and other debris and should be removed
The location near the lake where the smart weed was disposed of (just to the right of the walking path in the nature preserve, as you leave the boat ramp area) when it used to be collected out of the lake in years past now boasts a large patch of smart weed. According to Todd Beights, it is attracting rats.
The boat ramp is in an unknown condition. Several years ago, patches were made along the side of the ramp due to shoreline erosion. The patches extended downward, but appear to be undermined.
The roads in general need attention.

Exhibit 7 (2)

Site will be converted to recycled water.
Floating poles at lake exit are to trap floating debris for removal.
There are channels at the downstream side of the box culverts, presumably to hold boards to raise the water height in the lake.
Some indication that the par course equipment at Laguna Lake is out of date, that is, not representative of current theories of exercise.
Meadow
Complaints regarding overhanging plants along the southerly edge of the park. Complaints range from shading to fruit dropping. Some residents like the privacy the plant materials give and others do not. Plants were raised, lower limbs trimmed, to minimize hiding places.
Confusion on the north side where park interfaces with condo property. High irrigation marks the edge of the park, but residents often assume it is the grass edge and remove plants or plant other plants in this park area.
Erosion and undermining occurring on concrete swale in the bottom of the channel at the footbridge.
Railroad Bike Path
Fencing is routinely cut as soon as repairs are made. Cuts are on regular access paths. Repairs are ineffectual and staff spends significant time to make repairs. Signage has not deterred traffic.
Santa Rosa
Horseshoe pits are in need of repair. Primarily the asphalt section and the wood back plate area.
Skate park has considerable trash stuffed along the edge and the locks are not all on allowing access to the park.
The light panel on the southerly building has been pried open on several occasions to turn on the skate park lights.
Ball field turf is in excellent condition – primarily because use is largely limited to softball play.
Bollard and curbing is needed at drive entrance off parking lot toward group picnic areas to prevent vehicle access.

6. FLEET SERVICES DIVISION

This chapter presents an analysis of the Fleet Services Division. This analysis includes:

- The adequacy of the maintenance of City's fleet;
- The plan of organization that the City utilizes for delivery of fleet services;
- The levels of staffing for fleet maintenance and the balance of contract maintenance versus in house maintenance; and
- Opportunities to reduce the size of the fleet.

The chapter opens with a description of the Fleet Services Division.

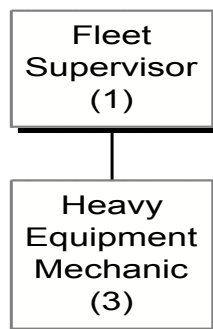
1. THE FLEET SERVICES DIVISION IS AUTHORIZED FOUR FULL-TIME STAFF.

The Fleet Services Division is responsible for the maintenance of the City's fleet excluding equipment assigned to the Fire Department and to the Transit Division. The Division has five major activities as noted below.

- **Vehicle and construction equipment maintenance.** Servicing and repairing Police patrol cars and motorcycles, autos and light trucks, commercial vehicles, construction equipment, turf mowers, and emergency generators; answering road calls for repair and towing of City vehicles; scheduling and documenting maintenance services,
- **General equipment maintenance.** Servicing and repairing radios, video recording systems, and other small equipment items; maintaining the fueling and washing islands at the Corporation Yard,
- **Equipment installation.** Installing radios, mobile data computers, video recording systems, and safety equipment.
- **Procurement.** Recommending vehicle and equipment replacements and writing specifications for procurements; managing inventories of fuel, oil, tires, and replacement parts; performing shipping and receiving tasks for the Corporation Yard.

- **Safety and environmental protection.** Arranging state-mandated inspections for smog certifications, commercial vehicles, standby generators, and cranes; monitoring and disposing of hazardous materials for the Corporation Yard.

A total of four (4) full-time positions are authorized for Fleet Services as depicted in the chart below. In addition, a total of \$57,500 is authorized for contract services.



The total FY 2010-11 budget for the Fleet Services Division in San Luis Obispo is presented in the table below.

Budget Category	Budget \$	% of Total
Staffing	\$376,600	40.98%
Contract Services	\$57,500	6.26%
Other Operating Expenditures	\$484,829	52.76%
Minor Capital	\$-	0.00%
TOTAL	\$918,929	100.00%

- This information was provided by the Public Works Department on February 25, 2011.

2. THERE ARE A NUMBER OF POSITIVE CHARACTERISTICS TO MANAGEMENT OF THE CITY'S FLEET.

The diagnostic appraisal of the Public Works Department identified a number of positive characteristics in the management of the maintenance, repair and replacement of the City's fleet. Examples of these positive characteristics are provided below.

- Most vehicle replacement cycles are adequate.
- PM intervals are based on time and/or use: 3,000 miles or 5 months.
- All work order activity is captured in SquareRigger FMIS.
- Warranty recoveries are pursued. Fleet is certified in-house for Dodge/Chrysler products.

- The Division outsources appropriate tasks such as smog inspection, truck tire installation, body work, etc.

These are examples of the positive characteristic in Fleet Services.

3. ANALYSIS OF ORGANIZATIONAL STRUCTURE

The fundamental questions in evaluating organizational structure are the efficiency of the plan of organization, the responsibility and accountability of managers and supervisors. The intent is to ensure the following:

- **The organizational structure fosters accountability.** The organizational structure fosters accountability among management and supervisory staff.
- **The plan of organization enhances communication and coordination.** The number of handoffs/exchanges required among staff providing service to the public or internal clients is minimized.
- **Management and supervisory resources are utilized efficiently.** The plan of organization minimizes administrative overhead.
- **The span of control for any manager or supervisor is not more or less than 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.

These principles were utilized in evaluating the organizational structure of the Fleet Services Division.

(1) The Span of Control for the Fleet Maintenance Supervisor Does Not Meet Metrics, But the Plan of Organization Should Not Be Modified.

Why should an organization be concerned about managerial layers and spans of control?

The City of San Luis Obispo has been challenged fiscally over the past several years to provide a responsive government at a lower cost. As noted in the General Fund Five-Year Fiscal Forecast presented to the Council in October 2010, the City is

facing a long-term structural budget gap between revenues and expenditures for the foreseeable future unless corrective action is taken. One of the most effective ways to meet these challenges is to streamline organizational structure through increased spans of control.

At the present time, the Fleet Maintenance Supervisor supervises three (3) Heavy Equipment Mechanics.

The duties of the Fleet Maintenance Supervisor, reflected in the profile of the Department that was reviewed and corrected by the Department, are noted below.

- Supervises the fleet services program and performs several primary and ancillary duties and responsibilities.
- Oversees staff and operations of fleet maintenance, operating Monday – Thursday 7:00 a.m. to 4:30 p.m. and Friday 7:00 a.m. to 3:30 p.m. providing preventive maintenance, corrective maintenance, warranty repairs, Department of Transportation regulatory inspections, fueling, vehicle pressure washing, and vehicle purchasing on City rolling stock.
- Interfaces regularly with City fleet customers and contract vendors.
- Responds to other department's equipment specifications, and provides fuel and vehicle ordering and purchasing.
- Oversees record-keeping systems for rolling stock and materials and supplies inventories. Processes invoices, logs parts, and manages work order data in SquareRigger FMIS.
- Serves as first line supervisor for 3 Heavy Equipment Mechanics.
- Recommends fleet replacements and assists in budget preparation and administers and monitors operating budget expenditures.
- Manages all fueling operations and compliance with the City's Spill, Prevention Control & Countermeasures (SPCC) Plan.
- Develops and coordinates professional training for staff.
- Performs special projects as assigned by Department management.

Management literature identifies various factors that cause span of control to differ among supervisors and in different organizations. For example, narrower spans of control are appropriate when the nature of work performed is complex, when organizational objectives are unclear, when tasks are uncertain, or risks are high. The chart, below, presents some of the factors that should be considered in evaluating spans of control.

Factor	Narrower Span of Control	Wider Span of Control
Nature of Work	Complex	Not Complex
Similarity of activities performed	Different	Similar
Clarity of organizational objectives	Not Clear	Clear
Degree of task certainty	Fuzzy	Definite Rules
Degree of risk in the work for the organization	High	Low
Degree of public scrutiny	High	Low
Supervisor's qualifications and experience	Weak	Strong
Burden of non-supervisory duties	Heavy	Light
Degree of coordination required	High	Low
Availability of staff assistance	None	Abundant
Qualifications and experience of subordinates	Weak	Strong
Geographic location of subordinates	Dispersed	Together

There are a number of factors in the Fleet Services Division that argue for a wide and for a narrow span of control for the Fleet Maintenance Supervisor as noted below.

- **Wide span of control.** Those factors that suggest a wider span of control is possible include:
 - The nature of the work performed by the staff of the Division is less complex than other aspects of the Public Works Department i.e., Engineering Capital Project Design,
 - The activities performed are similar,
 - The organizational objectives are clear,
 - There are definite rules for the tasks performed by the staff of the Division,
 - The qualifications and experience of the Heavy Equipment Mechanics are strong,
 - The degree of coordination required is low, and

- The staff are all located at one location: the corporation yard.
- **Narrow span of control.** On the other hand, there are factors that suggest the narrow span of control should be continued. These include the risk of the work for the organization, the degree of public scrutiny, and the lack of staff assistance for the Division.

A tall, narrow span of control is thought to create slower decisions and sometimes hamper an organization's ability to compete. Narrow spans of control may be most appropriate in highly technical or specialized areas that require close supervision.

A wider, flatter configuration means fewer layers of reporting and more subordinates reporting to a supervisor. Wider and flatter organizations tend to have faster decision-making, and improved communication, motivation and morale. Spans of control that are too wide can also create problems such as inconsistent performance and inadequate supervision.

The Matrix Consulting Group utilizes span of control guidelines to shape the discussion and development of recommendations regarding spans of control and management / supervisory layers. These guidelines were developed based upon the research and analysis conducted by a number of other cities and counties that were evaluating the number of management layers and the spans of control in their organizations. These include such cities and counties as Portland, Oregon; King County, Washington; Seattle, Washington; Kansas City, Missouri; etc.

These guidelines recognize situational differences in terms of departmental size, task complexity, etc. The guidelines, for a department such as the Public Works Department with 50 to 150 employees, suggest that not more than four layers of managers and supervisors are appropriate, and that the span of control for the ratio of

first-line supervisors to non-supervisors assigned to maintenance should not be lower than 1 to 10 or higher than 1 to 20.²⁷

As these guidelines apply to the Fleet Services Division, there are three (3) management and supervisory layers: The Public Works Director, the Deputy Director (City Engineer), and the Fleet Maintenance Supervisor. This falls within the guidelines.

The span of control for the Fleet Maintenance Supervisor is three (3), which is less than the 1 to 10 guidelines would suggest as appropriate. However, it is not unusual for cities with comparable populations as San Luis Obispo to have a fleet supervisor, even when their staffing in the Division is comparable to San Luis Obispo. This includes cities such as Palm Springs, Covina, Gilroy, Novato, etc. Furthermore, the roles and responsibilities of the Fleet Maintenance Supervisor are much broader than supervising the three (3) Heavy Equipment Mechanics. It includes fleet maintenance management, fleet safety, fleet asset management, fleet information system management, fleet utilization management, fleet replacement and new vehicle acquisition, equipment disposal, environmental stewardship, parts program management and inventory control, coordination of vendor repairs, and the like. This represents sufficient workload to warrant a full-time supervisor.

The plan of organization for the Fleet Maintenance Division should not be modified in the short-term. Longer-term modifications of the plan of organization of the Division are discussed in Chapter 13 – Administration.

Recommendation #70: The plan of organization for the Fleet Maintenance Division should not be modified in the short-term.

²⁷ *City of Portland Span of Control Study*, prepared for the City of Portland Audit Services Division by Public Knowledge, Inc. and The Kemp Consulting Group, 1994.

(2) Fleet Maintenance And Repair For Equipment Assigned To The Fire Department Should Be Consolidated In The Fleet Services Division.

The key objective in evaluating the plan of organization of fleet management is to determine what type of structure will yield net improvements in service effectiveness and / or cost control for stakeholders and the City as a whole, always keeping in mind that fleet customer service considerations should take precedence over cost reduction and other considerations because it is customer needs that dictate the need for vehicles and fleet management endeavors in the first place.

A clear best practice for fleet management, and a dominant trend, is the consolidation of fleet management functions into one centralized service organization.²⁸ Traditionally, it was believed that the effectiveness or responsiveness of a fleet management organization is highly correlated to its proximity to the fleet users it served. The result of this belief was the creation of numerous independent fleet management programs within a city, each serving the purported unique needs of its own group of customers relying on its presumably specialized skills and knowledge.

Increasingly, however, it has come to be recognized that many if not most fleet customer needs can be met more cost effectively through a consolidated approach to fleet management. The trend in the fleet industry clearly is toward more rather than less consolidation of fleet management functions. The move toward consolidation can be traced to the increasing cost and complexity of fleet management endeavors over the last 20 years or so and a simultaneous increase in emphasis on governmental efficiency - particularly in the face of competition from contract providers of fleet

²⁸ National Conference of State Fleet Administrators, Best Practices and Emerging Trends in State and Municipal Fleet Management, 2008.

management services. In short, the complexity of fleet management today often produces significant economies of scale that often can be captured only through collective effort.

This trend to consolidation of all fleet services, including the responsibility for fire apparatus, in a centralized fleet services function. This trend can be found in other cities in California such as Beverly Hills, Culver City, Davis, Encinitas, Lompoc, Palo Alto, Petaluma, Poway, Redondo Beach, Santa Cruz, Tracy, etc.

The San Luis Obispo Fire Department maintains and repairs the motorized rolling stock assigned to the Department. This amounts to approximately twenty-five pieces of equipment that range from fire aerial ladders to fire pumpers to pickup trucks and sedans.

Arguments have been that fire trucks are different because they are specialized pieces of emergency response equipment. Consequently, only dedicated and certified fire mechanics can maintain these units. In our experience, this overstates the case. In the first place, fire trucks have very similar components (e.g. drive train, chassis, wheels and tires) to other trucks in the City's fleet. The Fleet Services Division heavy Equipment Mechanics are as capable of doing a brake job on a fire truck as they are a dump truck. Highly specialized components, such as water pumps and aerial ladders, could be sent to vendors. Secondly, the Fleet Services Division already maintains emergency vehicles for the Police Department, and so is familiar with emergency lighting and other electronics that are on fire trucks. Thirdly, the Fire Department has many support vehicles (e.g. cars, pickups, trailers, etc.) that are nearly identical to other vehicles in the City's fleet already maintained by the Fleet Services Division.

The Matrix Consulting Group recommends that the Fire Department should focus on its mission and, initially, outsource maintenance of light-duty and support vehicles to the Fleet Services Division. There is not any immediate benefit to combining all fleet operations in the short-term since the Heavy Equipment Mechanics do not possess fire mechanic certification i.e., California State Fire Training Fire Mechanics Certification Program. In fact, the Heavy Equipment Mechanic classification does not require any certification whatsoever i.e., Automotive Service Excellence certification. Moreover, a phased approach to centralization would provide the Fleet Services Division with the opportunity to prove the value of its services to the Fire Department. This would be accomplished by the outsourcing of maintenance of light-duty and support vehicles by the Fire Department to the Fleet Services Division.

In the long-term, the Public Works Department and the Fire Department should transition the responsibility for fire apparatus maintenance to the Fleet Services Division including transferring the Fire Vehicle Mechanic position. This recommendation is based upon (1) the site constraints at fire station number one, (2) the workload capacity of the Fire Vehicle Equipment, which slightly exceeds demand, and (3) the fleet management expertise within the Fleet Services Division.

- **The site at Fire Station Number One Is Constrained.** The equipment assigned to the Fire Department are maintained at Fire Station number one. As noted in the fire master plan, this site is constrained (see the comments from the master plan below).

“At the rear of the Fire Station 1 site, the fire apparatus repair building is located. It has 1,536 square feet and is sufficient for the needs of the current fleet and one mechanic position. There is a small training tower with props with some concrete pad room for training evolutions. There is a new 2,900 square feet storage building and a new 4,376 police / fire communications center to be built this year. The entire site is 2.43 acres. With the new

communications center and storage buildings, the open training area is going to be constrained when it and the tower were small to begin with. While the City is making good use of this site, *any further headquarters expansion will effectively mean the training area has to re-locate off this property [italics added].*"

- **The workload capacity of the Fire Vehicle Mechanic slightly exceeds demand.** In evaluating key aspects of a fleet services organization, we use an analytical technique based on the vehicle equivalent units (VEU's), which was introduced several decades ago by the U.S. Air Force. This technique allows a comparison of diverse fleets by converting vehicle and equipment types to their equivalent in terms of the level of effort required to maintain a standard passenger sedan - which is used as a baseline and given a value of 1.0 Vehicle Equivalent Units (VEU's). By statistically reducing a fleet to its equivalent in terms of sedans, reasonable, standards-based comparisons can be made with the fleet operations of other organizations that have very different compositions. For example, a fleet of 100 patrol cars, which are rated at 2.5 VEU's each, constitutes a fleet of 250 VEU's. The number of mechanics/technicians required to maintain this fleet is more than a fleet of 100 sedans, but far less than a fleet of 100 fire pumper. The *National Association of Fleet Administrators* cites the use of VEU's in its *Fleet Maintenance Operations Guide*.²⁹ The Guide states that "a relatively quick way to start the process of optimizing your maintenance staff is to conduct a vehicle equivalency (VE) analysis. Vehicle equivalency is a method for breaking down a diverse fleet conceptually into a homogeneous one so it is easier to deal with. This technique is especially useful when comparing one garage to another or even one fleet to another so long as the variables discussed herein are taken into account so you are comparing "apples to apples."

The workload of the Fire Vehicle Mechanic, calculated using VEU's, is presented in the table below.

Labor Component	Hours	FTE Positions
Required Staff for 86.5 VEU's at 12.5 hours per VEU	1,081	0.72
Available direct hours at 1,500 hours per year and 1 Fire Vehicle Mechanic	1,500	1.00
Capacity excess / shortage	419	0.28

It appears that the Fire Department staffs for peak demand, as opposed to staffing for core demand and utilizing alternatives, such as outside vendors, overtime, or using the services of the Fleet Services Division to meet peak service requirements.

- **The Fleet Services Division is allocated a full-time Fleet Maintenance**

²⁹ National Association of Fleet Administrators, *Fleet Maintenance Operations Guide*, 2009.

Supervisor to manage fleet assets and service delivery, and this position should be utilized to supervise the service delivery for the fleet assigned to the Fire Department. Few functions involve as many disciplines as does fleet management. Activities included in this function range from managing the depreciation of millions of dollars of assets to diagnosing an electrical problem in a diesel engine control module. The Fleet Supervisor is the only supervisory or managerial position dedicated by the City to fleet management including equipment specification and acquisition, fleet data management and systems, fleet utilization, fleet replacement planning, vehicle upfitting, etc. The capacity of the Fleet Supervisor should be utilized to produce economies of scale for the City's fleet including the fleet assigned to the Fire Department.

The City should transition to centralized fleet services, but this should be done gradually. The Fire Department has an experienced Fire Vehicle Mechanic with over thirty (30) years experience and with specialized expertise and certification in maintaining the Department's mission-critical equipment (i.e. fire suppression equipment). Fifteen (15) vehicles should be reassigned to the Fleet Services Division from the Fire Department for maintenance services. These fifteen (15) vehicles are presented in the table below.

Equipment Number	Type of Vehicle	Model Year
423	Forklift	2004
702	Pickup Truck	2007
724	Pickup Truck	2007
801	Pickup Truck	2007
301	Pickup Truck	2002
607	Pickup Truck, Compact	2005
126	Pickup Truck, Full	2001
811	Pickup Truck, Full	2008
814	Pickup Truck, Full	2008
406	Sedan	2003
627	Sedan	2006
21	Sport Utility Vehicle	2000
236	Sport Utility Vehicle	1999
237	Sport Utility Vehicle	2000
238	Sport Utility Vehicle	2000

The maintenance and repair workload for these amounts to approximately 0.2 full-time equivalent Heavy Equipment Mechanic or approximately six (6) hours per week.

In the long-term, the Public Works Department and the Fire Department should transition the responsibility for fire apparatus maintenance to the Fleet Services Division including transferring the Fire Vehicle Mechanic position. The Fire Vehicle Mechanic position should be reclassified as a Heavy Equipment Mechanic when it becomes vacant.

Recommendation #71: In the short-term, the Fire Department should focus on its mission and, initially, outsource maintenance of light-duty and support vehicles to the Fleet Services Division.

Recommendation #72: In the long-term, the Office of the City Manager should work with the Public Works Department and the Fire Department to transition the responsibility for fire apparatus maintenance to the Fleet Services Division including transferring the Fire Vehicle Mechanic position.

Recommendation #73: When the Fire Vehicle Mechanic position becomes vacant, the position should be reclassified as Heavy Equipment Mechanic.

2. ANALYSIS OF STAFFING

This section of the chapter provides an analysis of the workload and staffing levels of the Fleet Services Division including outsourcing of these services.

(1) The Fleet Services Division Is Appropriately Staffed Given Existing Workload.

The *National Association of Fleet Administrators* cites the use of VEU's in its *Fleet Maintenance Operations Guide*.³⁰ The Guide states that “a relatively quick way to start the process of optimizing your maintenance staff is to conduct a vehicle equivalency (VE) analysis. Vehicle equivalency is a method for breaking down a diverse fleet conceptually into a homogeneous one so it is easier to deal with. This technique is especially useful when comparing one garage to another or even one fleet to another so long as the variables discussed herein are taken into account so you are

³⁰ National Association of Fleet Administrators, *Fleet Maintenance Operations Guide*, 2009.

comparing apples to apples.”

The staffing calculation for the Fleet Services Division, based upon VEU's, is presented in the table below.

Labor Component	Hours	FTE Positions
Required Staff for 362 VEU's at 12.5 hours per VEU	4,525	3.02
Available direct hours at 1,500 hours per year and 3 Heavy Equipment Mechanics	4,500	3.00
Capacity excess / shortage	(25)	0.02

Overall, the number of Heavy Equipment Mechanics authorized for the Fleet Services Division is sufficient given the existing size and composition of the fleet.

The Matrix Consulting Group further evaluated the sufficiency of staffing using three other measures. One measure was the adequacy of preventive maintenance. A review of preventive maintenance in fiscal year 2009-10 indicated that the Division was consistently providing preventive maintenance to the City's fleet at six (6) month intervals. The second measure was the timeliness of repairs. A review of the work orders opened and closed between June 30, 2010 and December 20, 2010 indicated that the Division was consistently completing the maintenance and repair within one (1) workday of opening a work order.³¹ The third measure was overtime. Overtime through February 25, 2011, amounted to \$2,368.³² These measures reinforce the adequacy of the sufficiency of the number of Heavy Equipment Mechanics authorized for the Fleet Services Division is sufficient given the existing size and composition of the fleet.

Recommendation #74: The Public Works Department should maintain the existing level of staffing for the Fleet Services Division at three (3) Heavy Equipment Mechanics.

³¹ This is based upon information provided by the Public Works Department.

³² This is based upon the Expenditure Status Report provided by the Public Works Department on February 25, 2011.

(2) The Public Works Department Should Not Outsource Fleet Maintenance and Repair Beyond Existing Levels

As we indicated earlier, VEUs provide a common denominator that allows us to compare fleets of different size and mix. The benchmark for total maintenance and repair and parts expense per VEU is \$1,000 to \$1,500. The reason that a range of costs is utilized in this benchmark is to account for varying conditions that are difficult to quantify in a VEU analysis. These conditions include a fleet's operating environment, utilization levels, age, and the local market for labor, parts, and vendor services. The calculation of the maintenance and repair costs for the Fleet Services Division is presented in the table below.

Line Item	Fiscal Year 2010-11 Budget
Salaries	\$250,700
Sub-Total	\$250,700
Overtime	\$3,000
Sub-Total	\$3,000
Retirement Contributions	\$68,700
Retirement PARS - 401	\$800
Health and Disability Insurance	\$41,900
Retiree Healthcare	\$5,800
Medicare	\$3,700
Unemployment Insurance	\$1,000
Sub-Total	\$121,900
Contract Services	\$12,600
Data Processing Services	\$1,000
Equipment Maintenance	\$6,000
Overhaul and Major Repairs	\$35,000
Special Equipment Installation	\$2,900
Sub-Total	\$57,500
Education and Training	\$1,000
Sub-Total	\$1,000
Equipment Replacement Parts	\$85,829
Lubricants	\$10,600
Tires, Batteries, and Accessories	\$43,800
Sub-Total	\$142,229
TOTAL M & R	\$576,329
Vehicle Equivalency Units	362
M & R Cost Per VEU	\$1,592
Target Cost Per VEU	\$1,875

This VEU benchmark is based on primary maintenance and repair services,

therefore in order to apply the benchmark, normal maintenance and repair costs must be isolated from those associated with non-routine activities. These non-routine activities are often associated with customer driven decisions and actions such as repair of accident damage, modifications to vehicles and equipment, unloading deliveries of supplies for other Divisions with a forklift at the corporation yard, and costs to prepare vehicles for service. Through experience from the analysis of dozens of municipal fleets, an 80-percent / 20-percent has been identified as a good benchmark for the split between primary and non-routine activities. Therefore the City VEU cost comparable to the benchmark is 80% of the total VEU cost and is reflected in the Target Cost per VEU in the table above.

The Fleet Services Division falls within or better the metric for Maintenance and Repair Cost per Vehicle Equivalence Repair Unit. The Division's Maintenance and Repair Cost per Vehicle Equivalence Repair Unit is \$1,592: the target is \$1,875.

The existing service delivery of the Division, relying on the three (3) Heavy Equipment Mechanics for much of the maintenance and repair of the City's fleet, excluding the Fire Department, is cost effective. This analysis indicates that the Department should not outsource additional services or all of the services provided by the Division. It is delivering those services cost-effectively.

In fact, in a recent analysis of a Sheriff's Office that relied exclusively on the outsourcing of maintenance and repair services for its fleet, a number of findings were made as noted below.

- "The Sheriffs outsourced model is yielding a cost of service about 45-percent greater than that of FLTM [that insourced the maintenance and repair of its fleet]. The greatest challenges in an outsourced model are managing the quality and the overall cost of service, with the latter being the most difficult. While a

contract may provide an hourly rate, fiat rate pricing and parts mark up formula, the true cost of service is in what repairs are done and the type and quantity of parts utilized. Therefore, even if a labor rate at one service provider is lower than another, the total cost of service *over time* may be more expensive at the lower hourly rate vendor because of the specific repairs that are performed and parts used. Effective management requires *active* oversight by staff with maintenance expertise, use of a sophisticated fleet management information system, and both pre and post-repair *reviews* of costs and service levels. The Sheriff does not currently *have* the staff organization or information systems to manage vendors in this *proactive* manner.”

- “In a sample review of detailed maintenance records we found evidence that raises questions regarding the effectiveness of the Sheriff’s oversight of maintenance vendors. In a review of just 20 randomly selected repair invoices (less than 2-percent of the total), we found questionable services in over half of the sample.”

The existing balance of service delivery used by the Fleet Services Division should be maintained. Routine maintenance and repair of the City’s fleet should continue to be performed by the three (3) Heavy Equipment Mechanics. Work that requires specialized expertise or equipment such as engine or transmission overhauls should continue to be outsourced.

Recommendation #75: Routine maintenance and repair of the City’s fleet should continue to be performed by the three (3) Heavy Equipment Mechanics. Work that requires specialized expertise or equipment such as engine or transmission overhauls should continue to be outsourced.

(3) The Public Works Department Should Explore Other Alternative Service Delivery Options Beyond Managed Competition.

Alternative service delivery (ASD) refers to any process that shifts some or all of the functions or responsibilities of delivering a service from the public sector to the private sector. Alternative service delivery can take many different forms as noted below.

- Asset Sale Or Transfer, whereby a government divests itself completely of an asset, turning over ownership to a private firm, a nonprofit organization or another government.

- Contracting out management of an asset, service or function to a private or nonprofit entity. The government retains ownership of any asset involved. However, the managing entity assumes responsibility for personnel. If a government transfers responsibility for management of service provision or a function to a private entity, it is referred to as Commercialization. An example of a commercialization effort is long-term lease arrangement that the City of Chicago has negotiated with the Cintra-Macquarie Consortium for operation of the Skyway. An example of a non-profit entity managing an asset is the Lincoln Park Zoological Society operating the Lincoln Park Zoo in Chicago.
- Corporatization, in which a government function is spun off to a government corporation that functions much like a private corporation, but with a public mission. Examples of this are the United States Postal Service or the Pension Benefit Guarantee Corporation.
- Establishing internal markets, whereby departments purchase or contract for goods or services from other departments.
- Selling a franchise to a private firm, such as a utility company. This gives the firm exclusive rights to provide a service.
- Intergovernmental contracts or cooperation, which is a variation of contracting out, involves governments cooperating to jointly purchase or deliver goods or services. This option is quite common among local governments.
- Managed competition, in which government employees can competitively bid against private contractors to provide certain services.
- Vouchers, where the government pays for a good or service, but provides citizens with choices as to their preferred way of obtaining the good or service.

The consulting team addressed managed competition in the previous sections of this chapter. Other alternative service delivery options are limited for the Fleet Services Division as noted below.

- The consulting team does not recommend that the City divest itself of its fleet. Without the fleet, the City would be unable to deliver services.
- The consulting team does not recommend that the City contract out management of the Division. While this would enable the elimination of the Fleet Services Supervisor position, the costs of the contract would likely cost as much, if not more, than the cost of the supervisor, particularly given the isolated geographical location of San Luis Obispo.

- The consulting team does not recommend that the City spin off the Fleet Services Division like a private corporation. The existing costs of maintenance and repair per vehicle equivalency unit are competitive, and the benefits of spinning off the Division are unlikely to offer much in the way of savings, if any.
- The consulting team has previously recommended that the Fire Department “purchase” equipment maintenance and repair services from the Fleet Maintenance Division, and that the Fire Equipment Mechanic position be transferred from the Fire Department to the Fleet Services Division (and the position reclassified as a Heavy Equipment Mechanic). With that change in service delivery, the Division would be providing maintenance and repair of all licensed equipment owned and operated by the City.
- Selling a franchise is not a viable option since the Division generates little revenue on its own to support a franchise.
- Intergovernmental contracts and cooperation merit exploration. With the transfer of the Fire Equipment Mechanic position to the Fleet Services Division (and its reclassification as a Heavy Equipment Mechanic), there would be some limited capacity for assumption of additional maintenance and repair workload. The Public Works Department should explore the potential of insourcing fleet maintenance and repair with its own Transit Division, with the County, and with the School District. This exploration should only occur after the Fire Equipment Mechanic position to the Fleet Services Division is transferred to the Fleet Services Division.
- The consulting team does not recommend that the City use managed competition for the Fleet Services Division. The recent history of outsourcing of fleet maintenance and repair (i.e., Indianapolis, San Diego County, Charlotte, etc.) indicate that the public sector has been at a lower price point than the private sector. In addition, the existing costs of maintenance and repair per vehicle equivalency unit are competitive.
- A form of vouchers offer potential to reduce fleet size, but are unlikely to enable a substantive reduction in costs. In this instance, vouchers would be reimbursement of employees for the use of their own personal vehicle for City business. This is discussed in the next section of this chapter.

The Public Works Department should explore alternative service delivery, particularly insourcing of fleet maintenance and repairs for other public sector agencies.

Recommendation #76: The Public Works Department should explore alternative service delivery, particularly insourcing of fleet maintenance and repairs for other public sector agencies.

3. ANALYSIS OF OPERATIONS AND MANAGEMENT

This section provides the project team's analysis of the opportunities for improvement in the operations and management systems for the Fleet Services Division.

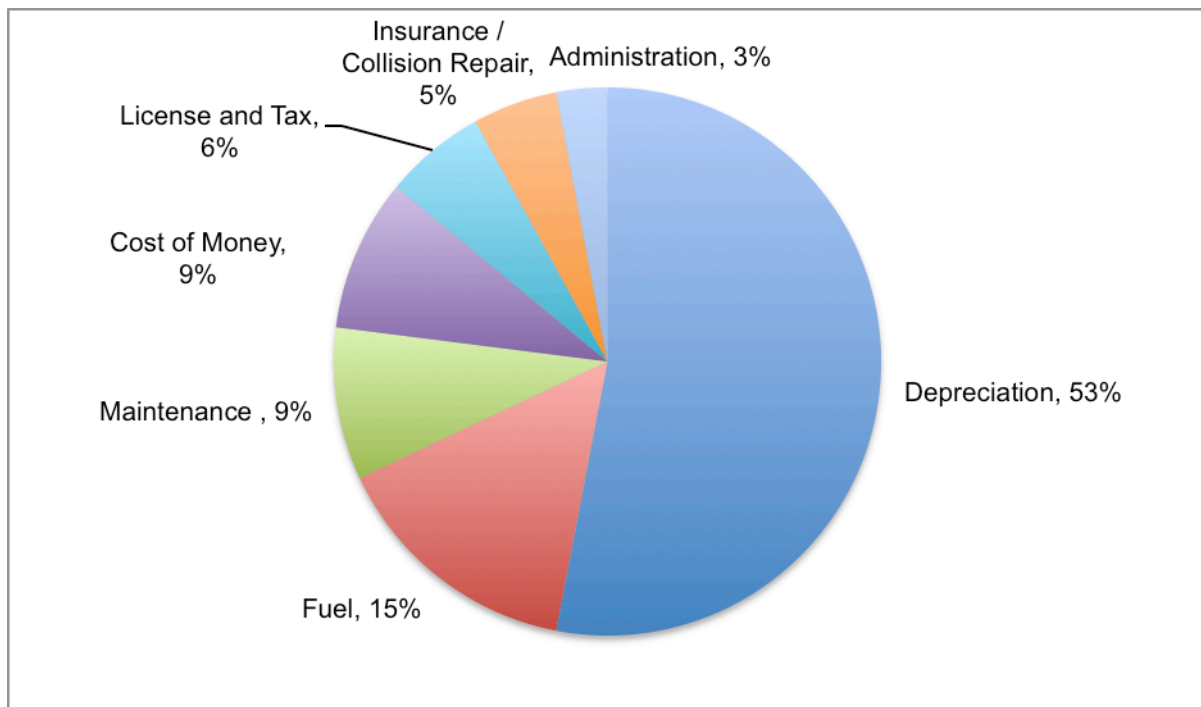
In conducting this analysis, the project team utilized best practices found in other cities and its own experience in analyzing fleet services practices in cities for over thirty (30) years, the best practices cities by other fleet services consultants, and the practices of other cities with well managed fleets.

The consulting team could not rely exclusively on best practices of the *American Public Works Association* or the *National Association of Fleet Administrators*. The *American Public Works Association* and the *National Association of Fleet Administrators* have developed best practices that include standards for the qualifications of mechanics, daily inspections of equipment by operators, replacement policies, the development of formal specifications for equipment to be acquired, etc. The *American Public Works Association* and the *National Association of Fleet Administrators* have not developed best practices for fleet reduction, alternative fuel, etc.

(1) The City Should Reduce The Amount Of Motorized Rolling Stock In Its Fleet.

Why should a City care about the number of vehicles in its fleet? The primary factor driving fleet related costs for any organization is the number of vehicles and composition of the vehicles in a 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, derived from the *National Association of Fleet Administrators* and **NOT** from data provided by the City of San Luis Obispo, 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 preceding 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.

The reduction of the number and size of fleets is a best practice.³³ These best practices recognize that “A good fleet size management program starts with recognition that an organization does not have to own all of the units necessary to conduct its business.”

Despite obvious benefits, most cities do not actively manage the size and composition of their fleets. This same challenge is evident with the City of San Luis Obispo. While utilization statistics (e.g., average number of miles driver per year) are only one factor that should be considered in justifying the need for a vehicle or piece of equipment, the relatively high number of vehicles (33 identified for the three vehicle classes in the table below) that fail to travel more than 5,000 miles per year indicates a very high probability that significant fleet size reductions are possible.

Class of Vehicles	0-5,000	5,001-10,000	10,001-15,000	15,001-20,000	20,001-30,000	30,001-40,000	Total
Pickup Truck	20	26	9	3	3	0	61
Sedan	6	12	5	0	2	0	25
Sport Utility Vehicle	7	4	1	0	0	2	14
TOTAL	33	42	15	3	5	2	100

Fortunately, there are many strategies that San Luis Obispo 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 supervisors – who have technical expertise and access to jurisdiction-wide fleet data that department’s lack.

³³ National Conference of State Fleet Administrators, Best Practices and Emerging Trends in State and Municipal Fleet Management, 2008.

The other is using economic incentives to motivate fleet users to make sound vehicle acquisition and utilization decisions out of enlightened self-interest.

A cost effective fleet size management plan usually consists of a combination of all of these methods using the tool set noted below.

- A policy that clearly sets forth the City's fleet size management principles;
- An organizational approach that fosters cooperation among fleet program stakeholders;
- Financial practices for fleet operations that raise awareness among fleet users of the fixed and variable costs associated with fleet ownership such as monthly depreciation charges;
- An effective fleet replacement program;
- The use of fleet management software to provide for the efficient collection, analysis, and distribution of fleet utilization data;
- A baseline authorized allocation of vehicles for each organizational unit established through a detailed study of fleet size requirements that considers mission activities, staffing, vehicle use, and the feasibility of employing other transportation alternatives; and
- A procedure for demonstrating the need for acquiring new vehicles (whether they are replacement units or additions to the fleet).

Each of these elements is discussed below.

- **The City Should Adopt a Fleet Size Policy and Procedure that Includes a Policy For Sport Utility Vehicles.** Securing upper management and fleet user support for a fleet size management policy is a crucial element of success for a fleet size management program. The policy should clearly communicate the need to use taxpayer funds wisely, acknowledge the essential role that vehicles and equipment play in achieving the organization's mission, and outline management expectations for employees.

The concern regarding the size of vehicles in a fleet originates from a number of perspectives. One of these perspectives is cost. In a recent study released by the National Association of Fleet Administrators, sport utility vehicles were found to cost an average of \$0.056 per mile more than a typical sedan. Sport utility vehicles do not comprise a significant proportion of the City's fleet. A total of 15 of 246 pieces of motorized rolling stock in the City consist of sport utility

vehicles. However, it is difficult to understand the need for sport utility vehicles for some of the current assignments i.e., Information Systems, Building Inspectors, Park Ranger, etc. It is difficult to understand the need for seven (7) sport utility vehicles in the Police Department.

There are a number of features that should be included in the fleet size policy and procedure. These features are presented below.

- A policy that clearly sets forth the City's fleet size management principles;
- An approach that recognizes fleet asset management is a shared responsibility between the Fleet Services and the departments;
- Financial practices for fleet operations that raise awareness among fleet users of the fixed and variable costs associated with fleet ownership;
- An information management approach that provides for the efficient collection, analysis, and distribution of fleet utilization data; and
- A procedure for demonstrating the need for acquiring new vehicles (whether they are replacement units or additions to the fleet).

This policy should include criteria for the purchase and assignment of sport utility vehicles. The criteria that address this policy are presented below.

- The sport utility vehicle must transport three or more passengers, in addition to the driver, a minimum of three times a week.
- If cargo or equipment is transported, the length must exceed 70 inches to warrant a sport utility vehicle comparable to the Ford Explorer or 60 inches to warrant a sport utility vehicle comparable to the Ford Escape and otherwise be incompatible with transport in a van pickup truck, or automobile. The equipment must be transported at least two days per week.
- The need for a sport utility vehicle rather than a sedan, van or truck, to fulfill as vehicle's mission must be sufficiently specific and quantifiable.
- If a four wheel drive option is requested, the request must include the percentage that four wheel drive use is expected and why this use could not be satisfied with a four wheel drive pickup truck.
- If more than one sport utility vehicle size meets the above criteria, then the smallest, least expensive sport utility vehicle must be selected i.e., comparable to a Ford Escape.

- Current sport utility vehicles in the City's fleet are not exempt from this requirement.
- All sport utility vehicle requests should be reviewed by a committee consisting of the Fleet Services Supervisor, the Director of Finance and Information Systems, and a Deputy Director / Public Works. If the request is denied, the committee should recommend an alternate vehicle.

In addition, the fleet size policy and procedure should include other aspects that encourage the use of fuel-efficient vehicles. The criteria that address this policy and procedure are presented below.

- All vehicles purchased by the City for its fleet will be consistent with the City's policy to standardize vehicles with the most fuel efficient and lowest emissions within the vehicle class, commercially available, practical, and reasonably cost-competitive for the class of vehicles needed for specific assignments.
- The most fuel efficient vehicles are those with a fuel economy rating (combined average of city and highway mileage) determined by the U.S. Environmental Protection Agency that is within 10% of the highest rated vehicle (most fuel efficient) in that class meeting the criteria above.
- It shall be the policy of the City to encourage the selection of vehicles of a smaller class size whenever possible to achieve increased miles per gallon. Requests for new or replacement vehicle purchases must be accompanied with written justification addressing the need for a specific model and type. The Fleet Services Supervisor shall work with operating departments to determine whether a proposed vehicle could be downsized and still complete its required function within the department.

The City should adopt a policy that will increase fuel efficiency, lower emissions, and control fleet costs. The policy should provide vehicle replacement criteria that limit the use of sport utility vehicles to work assignments where they are essential, and to encourage the purchase of fuel-efficient vehicles.

Recommendation #77: The Public Works Director should direct staff to develop a fleet policy that clearly sets forth the City's fleet size management policy and procedure for the consideration of the Public Works Director and the City Manager.

Recommendation #78: The fleet policy should include criteria for the purchase and assignment of sport utility vehicles.

Recommendation #79: The fleet size policy and procedure should include other aspects that encourage the use of fuel-efficient vehicles.

- **Fleet Reduction Should Be a Collective Effort of Departments, the Finance and Information Services Department, and the Fleet Services Division.** Evaluating fleet size and usage patterns of a group of fleet assets should always be done in the context of the City's mission, the types of functions performed, and the levels of service required. Vehicles and equipment are necessary tools used to accomplish these goals. It is San Luis Obispo's fiduciary responsibility to provide these tools in the most efficient and economical manner possible. Traditionally, fleet managers and supervisors (rather than departments) were held to account for fleet size decisions. However, it is difficult to regulate department's behavior and have them want to continue to do business with you if this responsibility is assigned to fleet managers or supervisors.

Managing fleet size, composition, and utilization is a shared responsibility between:

- Fleet users;
- Budget analysts; and
- Fleet supervisors.

The most appropriate role for the Fleet Services Division is to provide information and guidance departmental management aimed at helping the department's optimize their vehicle assignment, composition, and utilization practices.

Effective implementation of City's fleet size management principles initiative is dependent on the existence of an organizational culture that supports development of policies and programs that support efficient and economical service delivery. An organizational culture that promotes implementation of cross-functional / cross-organizational programs, based on collaboration and a strategic perspective – is essential to success in implementing a fleet size management program.

Recommendation #80: The Office of the City Manager should lead a collective effort of Departmental Management, the Finance and Information Services Department, and the Fleet Services Division in a reduction of the number and size of equipment in the City's fleet.

- **The City Should Reduce the Number of Vehicles in Its Fleet By Not Less Than 10%.** As a first step in the analysis of utilization, the Matrix Consulting Group mapped the distribution of vehicles and equipment ~~five~~ for three (3) different types of classes of equipment: general purpose or unmarked sedans, pickup trucks, sport utility vehicles. The number of equipment in these three (3) classes of vehicles represent 41% of the fleet maintained by the Fleet Services

Division. This information helped the project team map the fleet and evaluate the basis for future activities such as creating effective motor pools. The data indicate that there are many units in the fleet that have low levels of utilization.

The Matrix Consulting Group compared average annual utilization data among similar units – such as general-purpose sedans. The project team documented the utilization of equipment within a class in terms of age and life-to-date mileage.

Data regarding the utilization of the vehicles in these three classes of vehicles is presented below.³⁴

- **General Purpose Sedan.** There are twenty-five (25) general purpose or unmarked sedans included in the analysis of annual mileage. The specific annual mileage utilization for this class is presented below.
 - Median annual mileage – 7,681 miles
 - 25th percentile – 6,055 miles (6 vehicles)
 - 75th percentile – 9,088 miles (19 vehicles)
- **Pickup Trucks.** There are sixty-one (61) pickup trucks included in the analysis of annual mileage. The specific annual mileage utilization for this class is presented below.
 - Median annual mileage – 6,571 miles
 - 25th percentile – 4,041 miles (15 vehicles)
 - 75th percentile – 9,543 miles (46 vehicles)

One pickup truck - #9702 – assigned to the Water Treatment Plant - has 27,004 life-to-date miles although it is a 1997 model year pickup. It is averaging 1,929 miles of use annually.
- **Sport Utility Vehicles.** There were fourteen (14) sport utility vehicles included in the analysis of annual mileage. Specific annual utilization for this class is presented below:
 - Median annual mileage – 5,538 miles
 - 25th percentile – 2,787 miles (4 vehicles)

³⁴ The Public Works Department provided this information and it is based upon Square Rigger Report #81. The annual mileage was calculated based upon life-to-date mileage divided by the years in service.

- 75th percentile – 9,045 miles (11 vehicles)

There is clearly a significant amount of what would appear to be underutilized equipment (equipment at or below the 25th percentile in terms of annual mileage for the same class of equipment) in the fleet maintained by the Fleet Services Division.

Mileage is but one of the aspects in the analysis of opportunities to reduce the fleet. Other aspects should be included in the analysis as noted below.

- Equipment allocation and assignments should be documented through interviews with managers and supervisors.
- Fuel consumed by equipment for a year should be documented as an indicator of utilization.
- Random observations of equipment should be conducted at various locations where vehicles are parked to identify equipment that are consistently parked during normal business hours.
- An economic threshold should be established using the City's mileage reimbursement to identify the point at which it would be more beneficial for the City to reimburse employees for use of their own vehicles focusing on sedans.

The City should initially set an objective of eliminating twenty five (25) vehicles from its fleet (initially excluding the Fire Department).³⁵ This would represent a 10% reduction in the City's total fleet (initially excluding the Fire Department). This reduction would require an increase in the mileage reimbursement for the use of personal vehicles on City business. The estimated annual operating and capital cost savings resulting from the reduction of twenty five (25) vehicles from its fleet (initially excluding the Fire Department) is presented in the table below, which includes an offset of the increase in mileage reimbursement for the use of personal vehicles.

Recommendation	Annual Cost Savings
The City should initially set an objective of eliminating twenty-five (25) vehicles from its fleet (initially excluding the Fire Department).	\$70,000

Recommendation #81: The Office of the City Manager, the Finance and Information Services Director, and the Public Works Director should work with departmental management to reduce the City's fleet by 10% (excluding the Fire Department).

³⁵ The Fire Department was excluded since the Square Rigger fleet management information system does not provide mileage information for the Fire Department's fleet.

- **A Medium and Heavy Equipment Pool Should Be Established and the Existing Dump Truck Pool Should Be Reduced.** The City has a significant amount of underutilized medium and heavy equipment. This is evident in the table below that presents the medium and heavy trucks assigned to departments.

Vehicle Number	Class of Vehicle	Assignment	Model Year	Life-To-Date Mileage	Average Annual Mileage
421	Aerial Tower	Urban Forestry	2003	18,979	2,711
9105	Dump Truck, 5 to 8 Yard	Wastewater Collection	1991	7,756	408
9104	Dump Truck, 5 to 8 Yard	Park Maintenance	1991	16,448	866
840	Dump Truck, 5 to 8 Yard	Wastewater Collection	2008	1,995	998
9106	Dump Truck, 5 to 8 Yard	Streets Maintenance	1991	30,106	1,585
9107	Dump Truck, 5 to 8 Yard	Streets Maintenance	1991	39,553	2,082
9713	Dump Truck, 10 Yard	Streets Maintenance	1994	518,568	32,411
1015	Refuse Packer, 1 Ton	Park Maintenance	2011	1,546	N.A.
206	Street Sweeper	Streets Maintenance	2001	71,864	7,985
817	Street Sweeper	Streets Maintenance	2008	17,978	8,989
909	Street Sweeper	Streets Maintenance	2009	15,515	15,515
611	Truck, 1 to 2 Ton	Wastewater Collection	2006	5,224	1,306
122	Truck, 1 to 2 Ton	Streets Maintenance	2001	20,528	2,281
234	Truck, 1 to 2 Ton	Streets Maintenance	2002	18,882	2,360
508	Truck, 1 to 2 Ton	Wastewater Collection	2004	17,363	2,894
510	Truck, 1 to 2 Ton	Urban Forestry	2004	18,153	3,026
507	Truck, 1 to 2 Ton	Wastewater Collection	2004	21,193	3,532
30	Truck, 1 to 2 Ton	Streets Maintenance	2000	40,115	4,012
116	Truck, 1 to 2 Ton	Streets Maintenance	2000	50,791	5,079
414	Truck, 1 to 2 Ton	Streets Maintenance	2003	35,720	5,103
316	Truck, Light	Parks and Recreation	2002	23,056	2,882
401	Truck, Light	Water	2003	96,607	13,801
718	VACON Sewer Cleaner	Wastewater Collection	2006	10,713	2,678
859	VACON Sewer Cleaner	Wastewater Collection	2008	6,933	3,467
204	VACON Sewer Cleaner	Wastewater Collection	2002	42,060	5,258
9109	Water Truck	Urban Forestry	1991	27,707	1,458

Examples of the low level of utilization for this equipment are presented below.

- The City has six (6) heavy dump trucks. The average annual mileage for these six (6) dump trucks ranges from a low of 408 miles for a truck assigned to Wastewater Collection to a high of 32,411 miles for a truck assigned to Street Maintenance.
- The City has nine (9) trucks – 1 to 2 tons. The average annual mileage for these nine (9) trucks ranges from a low of 1,306 miles for a truck assigned to Wastewater Collection to 5,103 miles for a truck assigned to Street maintenance.

This same problem can be found with skid steer loaders and front wheel loaders (although only two pieces of equipment are assigned to each of these two classes of equipment). The two (2) skid steer loaders received a total of 478 hours of use on an annual average: the skid steer loader assigned to Street Maintenance only receives an annual average of 73 hours of use. The two (2) front wheel loaders received a total of 419 hours of use on an annual average: the front wheel loader assigned to Wastewater Collection received an annual average of 161 hours of use.

Overall, the City should evaluate the extent of heavy equipment in its fleet, determine which heavy equipment should be eliminated from the fleet and rented instead when needed, and agree on which equipment should be “pooled” in a heavy equipment “pool.” The existing dump truck pool should be evaluated to determine which of the dump trucks can be eliminated.

Recommendation #82: The Office of the City Manager, the Finance and Information Services Director, and the Public Works Director should work with departmental management to evaluate the extent of heavy equipment in the City’s fleet, determine which heavy equipment should be eliminated from the fleet and the “pool”, what equipment should be rented instead when needed, and agree on which equipment should continue to be “pooled” in a heavy equipment “pool.”

(2) The Heavy Equipment Mechanic Classification Should Be Revised To Require ASE Certification.

The *National Association of Fleet Administrators*, in its *Fleet Maintenance Operations Guide*, noted that “the importance of hiring and retaining qualified maintenance technicians in a fleet maintenance operation cannot be overstressed. Fortunately, the industry has responded to the demand for quality technicians with robust technician certification programs in both the United States and Canada. The most widely recognized and credible certifying organization for automotive technicians is the National Institute of Automotive Service Excellence, better known as ASE.”³⁶

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

³⁶ National Association of Fleet Administrators, *Fleet Maintenance Operations Guide*, 2009.

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 Heavy Equipment Mechanics have obtained EVT certification. In addition, the Heavy Equipment Mechanic classification does not require Automotive Service Excellence certification. The Division, however, has initiated the process of requiring ASE certification and scheduled the EVT certification training.

A number of local governments in California have Fleet Services 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 cities:

Napa
Clovis
Downey
Modesto
Woodland
Oxnard
Chico
Yuba City
Milpitas
Livermore
Brentwood
Corona

ASE credentials must be recertified every five years. Most fleet operations reimburse mechanics for the expense of ASE certification.

The City should initiate measures to increase the number of EVT-certified mechanics and the ASE-certified mechanics. These measures are presented below.

- The City should be proactive in providing training to its technicians to obtain such certification. The Fleet Supervisor should develop a formal training plan for the Heavy Equipment Mechanics to assure the necessary training in light of continued technological advances in vehicles, equipment, and diagnostic equipment.
- In developing a training plan, the Fleet Supervisor should link the skill development of the Heavy Equipment Mechanics to an assessment of their strengths and weaknesses.
- The Heavy Equipment Mechanic classification description should require ASE certification (or obtaining the certification within two years of appointment).
- 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. Incentivizing mechanics to achieve ASE certification improves vehicle/equipment knowledge, elevates skill levels, and keeps them up-to-date with changing automotive and diagnostic technologies

A comprehensive training and certification program will help minimize risk and liability, provide credibility to the Fleet Services Division, and better enable the heavy Equipment Mechanics to use technology to increase productivity and efficiency, which in turn, lowers costs.

Recommendation #83: The Fleet Services Supervisor should initiate training and develop training plans to enable the Heavy Equipment Mechanics to obtain EVT and ASE certification.

Recommendation #84: The Fleet Services Supervisor should work with the Human Resources Department to modify the Heavy Equipment Mechanic classification to require ASE certification (or obtaining the certification within two years of appointment).

Recommendation #85: The Public Works Director should work with the Human Resources Department to evaluate the costs and benefits of financial incentives for EVT and ASE certification.

(3) The Fleet Services Division Should Set Objectives For Chargeable Hours By The Heavy Equipment Mechanics.

Why be concerned about the chargeable hours of the three (3) heavy equipment Mechanics? The *National Association of Fleet Administrators*, in its *Fleet Maintenance Operations Guide*, states “technician productivity is the third most critical performance metric to measure in a fleet maintenance and repair operation (behind safety and effective downtime).”³⁷ The extent of chargeable hours indicates what proportion of their productive work hours is spent on the shop floor in the maintenance and repair of vehicles. This needs to be maximized or overtime will be increased, a greater proportion of work will be outsourced, and maintenance and repair costs will increase.

The benchmark utilized by the Matrix Consulting Group for chargeable hours per mechanic amounts to 125 hours a month or 72% of their available work hours.

However, a review of actual hours charged to work orders in fiscal year 2009-10 indicated that the three (3) Heavy Mechanics charged an overall average of 99 hours per month or 79% of the benchmark. The table below presents a summary of the data. This table is based upon data provided by the Public Works Department.³⁸

Technician	Annual Labor Hours	Monthly Hours
Heavy Equipment Mechanic # 1	1,434.01	119.5
Heavy Equipment Mechanic #2	1,310.99	109.2
Heavy Equipment Mechanic #3	1,105.18	92.1
Total	3,850.18	99.42

³⁷ National Association of Fleet Administrators, *Fleet Maintenance Operations Guide*, 2009.

³⁸ Square Rigger Report #69 for the time period from July 1, 2009 to June 30, 2010, provided by the Public Works Department on December 23, 2010.

The Fleet Services Division should establish a policy regarding labor reconciliation that requires the Fleet Supervisor to review the monthly direct-billed hours report to ensure accountability for all Heavy Equipment Mechanics. This same policy should also require the Fleet Supervisor to monitor adherence to this objective and report monthly to the executive management of the Public Works Department.

Recommendation #86: The Fleet Services Supervisor should set an objective of an average of 125 working hours charged to work orders per month per Heavy Equipment Mechanic (this excludes leave).

Recommendation #87: The Fleet Supervisor should review the monthly direct-billed hours report to ensure accountability for all Heavy Equipment Mechanics, and report actual adherence to this objective to executive management of the Public Works Department on a monthly basis.

(4) The Fleet Services Supervisor Should Utilize The Capabilities Of The Fleet Management Information System To Plan And Schedule The Work Of The Heavy Equipment Mechanics.

The National Association of Fleet Administrators noted in its Fleet Maintenance Operations Guide that “to the extent possible, shops should strive to maximize scheduled work and minimize unscheduled work. By its very nature, unscheduled work is more costly and disruptive than is scheduled work both for the shop and the customer. A fleet that lets scheduled services slip for any reason is asking for trouble and usually gets it in the form of excessive downtime, customer dissatisfaction and higher costs.”³⁹

There are a number of issues pertaining to the effectiveness of supervision of the Heavy Equipment Mechanics. These issues can be summarized as follows:

- The Fleet Supervisor does not directly measure the workload and productivity of the Heavy Equipment Mechanics.
- The Division does not have formalized system of priorities for the scheduling of

³⁹ National Association of Fleet Administrators, Fleet Maintenance Operations Guide, 2009.

repairs.

These issues directly impact staff workload and productivity. To resolve these problems, the Fleet Services Division should establish a formal work scheduling system. The features of this system are noted below.

- The priorities of its equipment repairs should be clearly established to ease the loading of work within the shop. These priorities should be written into the repair order itself. These priorities should be distributed to key managers and supervisors in operating departments in formal written policy and procedure regarding the shop scheduling process.
- Time guidelines should be established for the work to be accomplished. These guidelines could be based on manufacturer allowed shop time (for example, as shown in the annual Parts and Time Guide) and should cover the majority of work performed by staff. These time guidelines should be written on the repair order itself, as a method for the Fleet Supervisor to communicate his performance expectations. Heavy equipment Mechanics should be held accountable for meeting or closely approximating these guidelines on a consistent basis. The Fleet management information system can support the development of these estimates as well.
- The Fleet Supervisor should maintain a "to do" list of repairs on equipment which can be scheduled for periods of low workloads. The Fleet Supervisor should develop a list every week to keep track of all the deferred repairs.
- The Fleet Supervisor should track workload and backlog to assure each Auto Mechanic and the Heavy Equipment Mechanic has sufficient work, that important repair priorities are addressed in their proper time frame, and to assign work as it arrives.

The Heavy Equipment Mechanics should have backlogs of scheduled work. The fleet management information system should be utilized to develop a formal work schedule for each Heavy Equipment Mechanic. When a Heavy Equipment Mechanic completes a repair or preventive maintenance, they should access the fleet management information system to determine their next job, even in the absence of the Fleet Supervisor. The Fleet Supervisor should monitor the actual time that the Heavy Equipment Mechanics take to accomplish repairs versus the time guidelines

established using the fleet management information system.

In essence, the Matrix Consulting Group is proposing a scheduling system known as "shop loading", in which each staff is assigned work with clear expectations as to the time required to perform the work. The Fleet Supervisor should act as a "service writer", pulling up the history of the equipment on the fleet management information system; initiating the work order by identifying the tasks to be performed along with estimated repair times; assigning a priority to work order; and reviewing the shop workload and recommending the assignment of the work order to a specific Heavy Equipment Mechanic. The Fleet Supervisor should assign the work and review the work completed to assure quality including a road test, if appropriate, and comparing actual repair times with the estimated repair time and determining the reasons for variances.

Recommendation #88: The Fleet Supervisor should use the fleet management information system to develop time guidelines for completing repair and maintenance of equipment.

Recommendation #89: The Fleet Supervisor should develop formal written priorities for repair and maintenance of equipment and adopt these priorities in a formal written policy and procedure.

Recommendation #90: The Fleet Supervisor should develop and install a more formal work planning and scheduling system using the fleet management information system.

(5) The Fleet Services Division Should Provide Maintenance And Repair Cost Information To Their Customers On A Monthly Basis.

All fleet services organizations capture a vast amount of equipment data in their fleet management information systems.

This information should be shared with customers. Why is this important? It enables customers to monitor relevant fleet management, maintenance and repair

metrics, and demonstrate to these customers the cost-effectiveness of the services provided by the Division.⁴⁰

The Fleet Services Division should provide routine monthly information to middle managers within the City regarding the costs for equipment maintenance, repair and utilization. One of the goals of this reporting should be to heighten customer awareness of the cost and utilization of equipment so that they are willing to evaluate alternatives. Without timely and useful information regarding the costs for equipment maintenance, repair, and replacement as well as utilization, such a process will not occur.

The Fleet Services Division should make the generation, analysis, and distribution of management information to their customers regarding fleet operations one of their core services.

Recommendation #91: The Fleet Services Division should provide information to their customers on a monthly basis regarding the costs for equipment maintenance, repair, and utilization.

(6) The Fleet Services Division Should Develop and Adopt Service Level Agreements with its Customers.

The *National Association of Fleet Administrators* noted in its *Fleet Maintenance Operations Guide* that “if you want to better manage your client’s expectations, a service level agreement (SLA) may be worth considering. An SLA is a negotiated agreement designed to create a common understanding about services, priorities and responsibilities. By providing a shared understanding of needs and priorities, SLA’s can serve as a great communications tool, and a conflict prevention tool. To be continuously effective an SLA must be a living document. Reviews should be completed on a predetermined frequency to assess adequacy and negotiate

⁴⁰ National Conference of State Fleet Administrators, *Best Practices and Emerging Trends in State and Municipal Fleet Management*, 2008.

adjustments. Done properly, SLA's are an objective basis for gauging maintenance operations effectiveness. It will help ensure that both parties use the same criteria to evaluate service quality.⁴¹

The benefits of an SLA, as noted by the National Association of Fleet Administrators, included the following:

- Sets clear performance expectations of the customer and service provider;
- Clarifies the roles and responsibilities of both parties;
- Focuses attention on customer's priority needs;
- Encourages a service quality culture, and continuous improvement;
- Provides a mechanism for both parties to plan for the future;
- Puts purchasing power into the hands of the customer;
- Provides a useful tool for the customer to monitor performance;
- Service providers are in a better position to plan their delivery function;
- Can provide greater certainty of income for service providers

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 #92: The Fleet Services Division should develop and adopt service level agreements with its customers.

⁴¹ National Association of Fleet Administrators, Fleet Maintenance Operations Guide, 2009.

(7) The Fleet Services Division Should Develop an Alternative Fuel Policy and Procedure for Consideration of the City Manager.

The use and deployment of alternative fuel vehicles is a best practice.⁴² The cost of natural gas (CNG) vehicles is becoming more competitive. This is not merely done for environmental reasons. The costs of gasoline and diesel have increased significantly over the past five years, while the cost of natural gas has decreased. The trends are back to fuels like CNG and more fuel efficient choices like hybrids and ethanol vehicles. Bio-diesel choices are increasing with fuel product availability. Plug-in hybrids are becoming more popular. Electric vehicles are making a strong comeback with improved battery options.

The Fleet Services Division already has a number of alternative fuel vehicles in the City's fleet. However, the Division should develop a policy and procedure for the expansion of alternative fuel vehicles in applications that will not result in impairment of service delivery. For example, a law enforcement patrol sedan would not be a recommended application for a hybrid electric vehicle, but could be an appropriate application for compressed natural gas. There are a number of alternative fuels that the City should consider including hybrid electric vehicles, compressed natural gas, ethanol, propane, and biodiesel.

The Fleet Supervisor should develop a policy that the City shall purchase, where practical, low-emission and alternative fuel vehicles for its fleet. The City should ensure that, for fleet units operating bi-fuel or flex-fuel vehicles (vehicles that operate on either motor gasoline or an alternative fuel, as defined by the Federal Energy Policy Act), an

⁴² National Conference of State Fleet Administrators, Best Practices and Emerging Trends in State and Municipal Fleet Management, 2008.

average of 50% of the fuel used by those vehicles should be alternative fuel. This should reflect a leadership in alternative fuels by the City.

Money can be saved by driving smaller vehicles and / or by using more fuel-efficient vehicles versus hybrid vehicles. Under many scenarios, the lowest net present value gasoline model in a class is less expensive than the hybrid model in the same class.⁴³

Managers of the Public Works Department should evaluate the fleet's vehicle usage to determine usage levels, since vehicle usage is a significant factor in determining overall cost. Many hybrid vehicle purchases are made to reduce one's carbon emission output by reducing fuel consumption. This can be good for the environment and good for public relations.

The Fleet Services Division should develop a formal written policy and procedure for continued introduction of alternative fuel vehicles into the City's fleet for the consideration of the City Manager. This policy should seek to balance the additional costs associated with hybrid vehicles with the City's long-term responsibility for environmental stewardship.

Recommendation #93: The Fleet Services Division should develop an alternative fuel policy for consideration of the City Manager.

(8) The Fleet Services Division Should Be Established As An Internal Service Fund.

Why use an internal service fund for fleet maintenance, repair, and replacement services?

The National Association of Fleet Administrators noted in its Fleet Maintenance

⁴³ University of North Carolina at Chapel Hill, When are Alternative Fuel Vehicles a Cost-Effective Option for Local Governments, 2007

Operations Guide that “requiring customers to pay for services makes them more aware of the costs involved and, therefore, less likely to incur frivolous charges. In this manner, chargeback systems can increase customer accountability and reduce expenses.” It further noted that “an internal service fund is very popular in government organizations as a means to enhance departmental accountability.”⁴⁴

In the consulting teams experience, implementation of an accurate cost charge-back system is one of the most powerful financial management tools that a City can implement to control fleet related costs. Such systems clarify the total cost of ownership for a City by aggregating all fleet costs into a single cost pool. If costs are charged-back to end users in a manner that users can understand, then market economic forces are created that exert downward pressure on overall costs. Furthermore, departments that must directly pay for the fleet resources and services the departments use are much more motivated to hold fleet management organizations accountable for the costs - and cost competitiveness - of the goods and services the latter provide. Consequently, properly designed cost charge-back systems promote efficiencies in both the provision and use of vehicles and fleet management services.

Fleet service organizations use one or more of four basic types of cost charge-back systems:

- **Proportional Cost Allocation Systems** - these systems distribute fleet services costs to fleet user agencies by allocating the fleet service organization's costs among customer organizations using an allocation statistic, such as the percentage of vehicles in the fleet that is assigned to each customer agency. This is the approach used by the City of San Luis Obispo.
- **Time-Based Systems** - these systems charge the cost of fleet services activities to customers on some increment of time, the most common of which is

⁴⁴ National Association of Fleet Administrators, Fleet Maintenance Operations Guide, 2009.

by the month. Costs are grouped into vehicle classes and charges to customers are based on the average unit cost in each class.

- **Usage-Based Systems** - these systems allocate fleet costs to users based on the number of miles (or engine hours) that are driven in a defined period of time (normally monthly). As with time-based systems, vehicle class average charge-back rates are calculated.
- **Service-Based Systems** - These charge-back systems operate much like those used by commercial repair shops and car leasing/rental companies. Fully allocated charge-back rates are calculated for each line of business in which the fleet management organization engages (such as vehicle maintenance and repair labor, vehicle acquisition and disposal, parts, fuel services, etc.). Customers receive charges for the actual services that they consume, such as hours of labor (at a fully burdened rate per hour).

The strongest systems, in our experience, are those with service-based elements. The rate system should reflect the costs of the major categories of goods and services provided in managing, maintaining and repairing the fleet based on actual detailed, transaction-level information. For example, the true cost of an hour of mechanic labor, the cost of vehicle parts and the overhead associated with acquiring and distributing those parts. These are transactional costs that occur each time a vehicle is brought to the shop for repair. There are also administrative costs that are incurred to provide general management of the fleet; these are generally fixed expenses for activities related to all vehicles in the fleet.

Recommendation #94: The Fleet Services Division should be established as an internal service fund.

(10) There Are No Opportunities for Cost Reductions Within the Fleet Services Division Without Reductions In the Level of Service and There Are Not Any Observable Redundancies in Service Delivery.

The City has been in a cost reduction mode for six of the past eight fiscal years. The Fleet Services Division has not been exempt from these reductions. There are no

observable opportunities to reduce costs within the Division without reducing levels of service.

There are no observed redundancies in the Division. That is the Division is not consistently delivering services that are also delivered by other Divisions in the Public Works Department.

(11) The Fleet Services Division Utilizes Appropriate Equipment and Technology.

The Division is appropriately equipped to conduct its work. It utilizes the same type of equipment that other cities utilize, and that enable its efficient delivery of services.

(12) The Support Staff Located at the Corporation Yard Should Provide Clerical Support to the Fleet Services Division.

There are two support staff assigned to the City's corporation yard. This includes one (1) full-time position and one (1) temporary position. The duties of these positions, reflected in the profile of the Department that was reviewed and corrected by the Department, are noted below.

- One (1) Administrative Assistant III is assigned to the Corporation Yard, providing clerical assistance to both public works and utilities department staff; answers phones and dispatches; inputs work order information; processes payment vouchers; assists in the Community Service worker program; supports the Tree Committee and tree supervisor; and performs other duties as assigned.
- One (1) Public Works Temporary Worker works 16 hours per week (0.4 FTE) providing support and coverage for the Admin. Asst. III position at the Corp Yard. Additionally, the position provides payment processing for Department invoices, time sheet processing every other week, reviewing documents for accuracy.

The Fleet Supervisor processes the invoices for the Fleet Services Division, and "attaches" these invoices to work orders in the Square Rigger fleet management

information system. This is an unproductive use of the available work hours of the Fleet Supervisor. This responsibility should be assigned to the Administrative Assistant III or the Public Works Temporary Worker. These two staff have a substantive workload, but have the capacity to process these invoices and attach these invoices to work orders, if training is provided by the Fleet Supervisor. This will require the acquisition of an additional Square Rigger license, however, for these support staff. The cost impact of this recommendation, in terms of the cost of the additional license, is presented in the table below.

Recommendation	One-Time Cost Impact
Acquire an additional Square Rigger license for the support staff located at the corporation yard.	\$450

Recommendation #95: The responsibility for processing Fleet Services Division invoices and attaching them to work orders in the Square Rigger fleet management information system should be assigned to the Administrative Assistant III or the Public Works Temporary Worker at the corporation yard.

Recommendation #96: The Public Works Department should acquire an additional Square Rigger license for the Administrative Assistant III or the Public Works Temporary Worker at the corporation yard.

(12) The Fleet Services Division Utilizes Appropriate Equipment and Technology.

The Division is appropriately equipped to conduct its work. It utilizes the same type of equipment that other cities utilize, and that enable its efficient delivery of services.

(13) The Two City Hall Pool Vehicles Appear To Warrant Continued Assignment.

The City Hall has two pool vehicles – two sedans. As of December 23, 2010, one of the sedans had 59,581 life-to-date miles, while the other had 63,312 life-to-date

miles.⁴⁵ These two sedans are each utilized approximately 7,700 miles annually based upon an annual average of this life-to-date mileage.

The reimbursement rates utilized by the Internal Revenue Service would require reimbursement of \$0.50 per mile. That would require reimbursement of approximately \$3,850 per vehicle annually. Given the City's existing replacement policies and the existing costs of operations and maintenance, the continued assignment of these two sedans appears warranted.

(14) Each City Organizational Unit Located At the Corporation Yard Should Make Arrangements to Unload Their Own Supplies That Are Delivered to the Corporation Yard.

At the current time, the Fleet Services Division unloads all of the supplies and materials delivered to the corporation yard, regardless of the organizational unit for whom those supplies and materials are destined.

This requires one of the Heavy Equipment Mechanics to stop the maintenance and repair work that they are performing, drive a forklift to the delivery truck, unload the supplies, and then return to work. This is an ineffective use the time of the Heavy Equipment Mechanic.

The organizational units located at the corporation yard should make arrangements for the unloading of these supplies and materials at the corporation yard, possibly including the requirement that the vendor unload these supplies and materials.

Recommendation #97: The organizational units located at the corporation yard should make arrangements for the unloading of these supplies and materials at the corporation yard, possibly including the requirement that the vendor unload these supplies and materials.

⁴⁵ This is based upon Square Rigger report #81 that was provided by the Public Works Department on December 23, 2010.

7. FACILITIES MAINTENANCE DIVISION

This chapter presents an analysis of the Facilities maintenance Division. This analysis includes:

- The adequacy of the maintenance of City facilities;
- The adequacy of maintenance management for facility maintenance;
- The levels of staffing for facility maintenance and the balance of contract maintenance versus in house maintenance; and
- The adequacy of maintenance management systems.

The chapter opens with a description of the Facilities Maintenance Division.

1. THE FACILITIES MAINTENANCE DIVISION IS AUTHORIZED SIX FULL-TIME STAFF AND A HALF-TIME TEMPORARY WORKER.

The Facilities Maintenance Division is responsible for the maintenance of thirty-nine (39) City buildings ranging from the City Hall, the Corporation Yard Building A with shops, Fire Station #1, the Ludwick Community Center, the Police Station, the Public Works and Community Development departments office space at 919 Palm Street, etc.

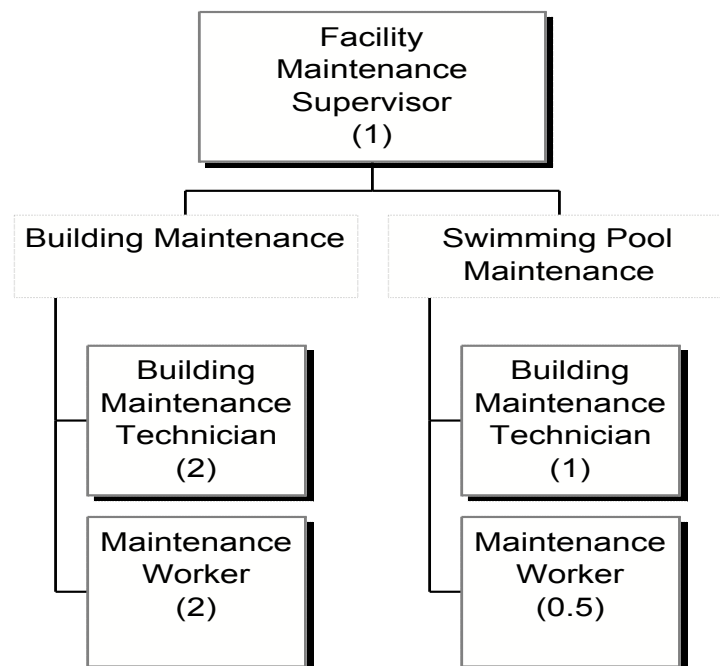
The Division has five major activities as noted below.

- **Skilled in-house craft maintenance** including plumbing, electrical, carpentry, flooring, mechanical, hardware, painting, roofing, pump, boiler, furniture, tile, filtration system maintenance, and drinking water purification system repairs. Two full-time regular Building Maintenance Technicians and three full-time regular Building Maintenance Workers perform this work.
- **Specialized in-house technical service** including Servicing and maintaining heating, ventilation and air conditioning (HVAC) systems, power generation systems, security and fuel alarm systems, locksmithing, telemetry, controls, filtration systems, specialized software. This work is performed by two full-time regular Building Maintenance Technicians and two full-time regular Building Maintenance Workers and supervised by the Facilities Maintenance Supervisor and various contractors.
- **Swimming pool operations** including operating and monitoring the pool water

heating and treatment systems, and cleaning pool tile and plaster surfaces. A half-time temporary Maintenance Worker performs this work with assistance from a full-time regular Building Maintenance Worker.

- **Contract and housekeeping service** including work is performed by contractors with ongoing service contracts: HVAC filter service, janitorial service, reverse osmosis and de-ionized water systems, fire extinguishers, kitchen hood ansul systems, first aid kits, elevator inspection, alarm monitoring, pest control, floor refurbishment, kitchen range duet cleaning. The Facilities Maintenance Supervisor supervises this work.
- **Building improvement** including the construction of minor capital maintenance projects. Contractors typically perform this work, and the Facilities Maintenance Supervisor supervises this work.

A total of six (6) full-time positions and one-half (0.5) full-time equivalent temporary positions are authorized for swimming pool maintenance and for facility or building maintenance as depicted in the chart below. In addition, a total of \$266,000 is authorized for contract maintenance services: \$19,500 for swimming pool contract maintenance and \$230,000 for building contract maintenance.



The total FY 2010-11 budget for the Facility Maintenance Division in San Luis

Obispo (including swimming pool maintenance) is presented in the table below.

Budget Category	Budget \$	% of Total
Swimming Pool		
Staffing	\$109,800	27%
Contract Services	\$19,500	5%
Other Operating Expenditures	\$279,500	68%
Minor Capital	\$-	0%
Sub-Total	\$408,800	100%
Building Maintenance		
Staffing	\$482,500	45%
Contract Services	\$230,000	22%
Other Operating Expenditures	\$347,400	33%
Minor Capital	\$8,900	1%
Sub-Total	\$1,068,800	100%
Total		
Total Swimming Pool and Building Maintenance		
Staffing	\$592,300	40%
Contract Services	\$249,500	17%
Other Operating Expenditures	\$626,900	43%
Minor Capital	\$-	0%
TOTAL	\$1,468,700	100%

The total 2010-11 budget for these two programs – swimming pool maintenance and building or facility maintenance – amounts to \$1,468,700.

2. THERE ARE A NUMBER OF POSITIVE CHARACTERISTICS IN THE SERVICE DELIVERY OF FACILITIES MAINTENANCE.

The diagnostic appraisal of the Public Works Department identified a number of positive characteristics in the delivery of facility maintenance services. Examples of these positive characteristics are presented below.

- An annual preventive maintenance program has been developed and is currently in FoxPro. This will be transitioned to the new EnerGov.
- The Division outsources custodial maintenance.
- The Division outsources the preventive maintenance of heating, ventilating, and air conditioning systems.
- The swimming pools comply with the California Code of Regulations Title 22, Chapter 20 as it pertains to swimming pools.
- The pool filter systems consist of high rate sand filter system that is fully automated

These are examples of the positive characteristics in the delivery of facility maintenance services.

3. ANALYSIS OF ORGANIZATIONAL STRUCTURE

The fundamental questions in evaluating organizational structure are the efficiency of the plan of organization, the responsibility and accountability of managers and supervisors. The intent is to ensure the following:

- **The organizational structure fosters accountability.** The organizational structure fosters accountability among management and supervisory staff.
- **The plan of organization enhances communication and coordination.** The number of handoffs/exchanges required among staff providing service to the public or internal clients is minimized.
- **Management and supervisory resources are utilized efficiently.** The plan of organization minimizes administrative overhead.
- **The span of control for any manager or supervisor is not more or less than 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.

These principles were utilized in evaluating the organizational structure of the Facilities Maintenance Division.

(1) The Span of Control for the Facilities Maintenance Supervisor Does Not Meet Metrics, But the Plan of Organization Should Not Be Changed.

Why should an organization be concerned about managerial layers and spans of control?

The City of San Luis Obispo has been challenged fiscally over the past several years to provide a responsive government at a lower cost. As noted in the General Fund Five-Year Fiscal Forecast presented to the Council in October 2010, the City is facing a long-term structural budget gap between revenues and expenditures for the

foreseeable future unless corrective action is taken. One of the most effective ways to meet these challenges is to streamline organizational structure through increased spans of control.

At the present time, the Facilities Maintenance Supervisor supervises five (5) full-time staff and one (1) part-time staff. The duties of the Facilities Maintenance Supervisor, reflected in the profile of the Department that was reviewed and corrected by the Department, are noted below.

- The Facilities Maintenance Supervisor, reporting directly to the City Engineer (Deputy Director), is responsible for managing the facilities maintenance program for the City, including in-house staff oversight and contractual services, such as HVAC, fire alarms, janitorial services, etc., provided to facilities, and budget preparation and management. Infrastructure maintained includes cost allocated locales such as City Hall, Corp Yard, Public Works Administration, Fire and Police Departments, Utility Facilities, Swim Center, Recreation Centers, and the like.
- Other facilities periodically maintained not part of the cost allocation modeling includes parking structures, parks facilities, and City-owned adobes and various other small outbuildings.

Management literature identifies various factors that cause span of control to differ among supervisors and in different organizations. For example, narrower spans of control are appropriate when the nature of work performed is complex, when organizational objectives are unclear, when tasks are uncertain, or risks are high. The chart, below, presents some of the factors that should be considered in evaluating spans of control.

Factor	Narrower Span of Control	Wider Span of Control
Nature of Work	Complex	Not Complex
Similarity of activities performed	Different	Similar
Clarity of organizational objectives	Not Clear	Clear
Degree of task certainty	Fuzzy	Definite Rules
Degree of risk in the work for the organization	High	Low
Degree of public scrutiny	High	Low
Supervisor's qualifications and	Weak	Strong

Factor	Narrower Span of Control	Wider Span of Control
experience		
Burden of non-supervisory duties	Heavy	Light
Degree of coordination required	High	Low
Availability of staff assistance	None	Abundant
Qualifications and experience of subordinates	Weak	Strong
Geographic location of subordinates	Dispersed	Together

There are a number of factors in the Facilities Maintenance Division that argue for a wide and for a narrow span of control for the Facilities Maintenance Supervisor as noted below.

- **Wide span of control.** Those factors that suggest a wider span of control is possible include:
 - The nature of the work performed by the staff of the Division is less complex than other aspects of the Public Works Department i.e., Engineering Capital Project Design,
 - The activities performed are similar,
 - The organizational objectives are clear,
 - There are definite rules for the tasks performed by the staff of the Division,
 - The qualifications and experience of the Building Maintenance Technicians and Maintenance Workers are strong, and
 - The degree of coordination required is low.
- **Narrow span of control.** On the other hand, there are factors that suggest the narrow span of control should be continued. These include the risk of the work for the organization, the degree of public scrutiny, the staff are located at diverse locations, and the lack of staff assistance for the Division.

A tall, narrow span of control is thought to create slower decisions and sometimes hamper an organization's ability to compete. Narrow spans of control may be most appropriate in highly technical or specialized areas that require close supervision.

A wider, flatter configuration means fewer layers of reporting and more subordinates reporting to a supervisor. Wider and flatter organizations tend to have faster decision-making, and improved communication, motivation and morale. Spans of

control that are too wide can also create problems such as inconsistent performance and inadequate supervision.

The Matrix Consulting Group utilizes span of control guidelines to shape the discussion and development of recommendations regarding spans of control and management / supervisory layers. These guidelines were developed based upon the research and analysis conducted by a number of other cities and counties that were evaluating the number of management layers and the spans of control in their organizations. These include such cities and counties as Portland, Oregon; King County, Washington; Seattle, Washington; Kansas City, Missouri; etc.

These guidelines recognize situational differences in terms of departmental size, task complexity, etc. The guidelines, for a department such as the Public Works Department with 50 to 150 employees, suggest that not more than four layers of managers and supervisors are appropriate, and that the span of control for the ratio of first-line supervisors to non-supervisors assigned to maintenance should not be lower than 1 to 10 or higher than 1 to 20.⁴⁶

As these guidelines apply to the Facility Maintenance Division, there are three (3) management and supervisory layers: The Public Works Director, the Deputy Director (City Engineer), and the Facilities Maintenance Supervisor. This falls within the guidelines.

The span of control for the Facilities Maintenance Supervisor is six (6), which is less than the 1 to 10 guidelines would suggest as appropriate. However, it is not unusual for cities with comparable populations as San Luis Obispo to have a facilities

⁴⁶ *City of Portland Span of Control Study*, prepared for the City of Portland Audit Services Division by Public Knowledge, Inc. and The Kemp Consulting Group, 1994.

maintenance supervisor, even when their staffing in the Division is comparable to San Luis Obispo. This includes cities such as Lompoc, Azusa, Novato, Gardena, Montclair, Pico Rivera, Monterey Park, etc. or cities of much smaller population such as Commerce. Furthermore, the roles and responsibilities of the Facilities Maintenance Supervisor are much broader than supervising the six (6) full-time and part-time Building Maintenance Technicians and Maintenance Workers. It includes facility maintenance management, facility safety, facility asset management, facility information system management, facility asset replacement, energy efficiency, coordination of vendor repairs, and the like. This represents sufficient workload to warrant a full-time supervisor.

The plan of organization for the Facilities Maintenance Division should not be modified in the short-term. Changes should be made in the long-term. These changes are discussed in Chapter 14 – Administration.

Recommendation #98: The plan of organization for the Facilities Maintenance Division should not be modified in the short-term.

(2) The Responsibility For The Maintenance And Repair Of The Parks, Golf, Bus Yard, And Water Treatment Administrative Facilities Should Be Assigned To The Facilities Maintenance Division.

Why consolidate responsibility for facility maintenance and repair?

In general, consolidation efforts are initiated to reduce costs, improve service delivery and quality, and unify management. Other benefits gained from such a consolidation can be found in reduced duplication of efforts and management, improved sharing of resources, information, and communications, flexibility in operating as the cost environment changes, and the ability to have broad expertise on a single team for problem solving. Consolidation creates a comprehensive customer service

organization designed to service a wide variety of customers and their needs in a number of ways. The fragmentation of responsibility results in decentralized management of the maintenance and repair of facilities with facilities-related spending embedded within various departmental budgets, facility maintenance entrusted to departmental managers and supervisors that are not trained to manage facilities, and incomplete information and little or no capital planning or funding for those facilities.

At the present time, there are a number of city-owned buildings that are not maintained by the Facilities Maintenance Division. These buildings are noted in the exhibit on the following page.⁴⁷ As the exhibit notes, these buildings not maintained by the Division encompass a wide range from restrooms to sheds to the Golf Course clubhouse to the Bus Yard administration building / shops to the Water Reclamation Facility administration / operations facility to the Whale Rock Water Treatment Pump Station 1. Altogether, these facilities amount to 58,318 square feet.

The Division is already charging work order hours and / or costs to some of these facilities including the facilities at the Damon-Garcia sports fields, bus stops, Broad Street restrooms, the Bus Yard, French park, Islay park, Santa Rosa park, Sinsheimer stadium, and Throop field. However, the Division is not assigned responsibility for the maintenance of these facilities. It responds to requests for assistance when received from the departments or Divisions that are assigned responsibility for the maintenance / repair of these facilities.

⁴⁷ This information was provided by the Facilities Maintenance Division.

Exhibit 8

**Buildings Not Maintained by the
Facilities Maintenance Division**

Facility	Square Footage	Facility Location / Assignment
Broad Street Restrooms	330	Parks
Damon Garcia Concession Stand	240	Parks
Damon Garcia Restrooms	720	Parks
Damon Garcia Service Building	810	Parks
French Park Restroom	596	Parks
Islay Park Storage Shed	54	Parks
Islay Park Restrooms	480	Parks
Johnson Park Restrooms	348	Parks
Laguna Lake Hillside Park Restrooms	350	Parks
Laguna Lake Restroom	425	Parks
Meadow Park Restrooms	325	Parks
Mission Plaza Adobe	375	Parks
Mission Plaza Park Restrooms	288	Parks
Mitchell Park pavilion	600	Parks
Mitchell Park Restrooms	640	Parks
Santa Rosa Park Ball Field Restrooms	504	Parks
Santa Rosa Park Restroom	2,430	Parks
Santa Rosa Park Scorekeeper Shed	108	Parks
Santa Rosa Park Storage Shed	330	Parks
Sinsheimer Park Restrooms	1,248	Parks
Sinsheimer Park Scorekeeper Shed	132	Parks
Throop Park Restrooms	567	Parks
Throop Park Scorekeeper Shed	378	Parks
Sub-Total	12,398	
Golf Course Clubhouse	2,500	Golf Course
Golf Course Workshop	750	Golf Course
Golf Course Event Deck	450	Golf Course
Sub-Total	3,700	
Bus Yard Shop and Administration	5,654	Bus Yard
Bus Wash	2,025	Bus Yard
Sub-Total	7,679	Bus Yard
Water Reclamation Facility Administration / Operations	14,492	Water Reclamation Facility
Switch Gear	3,869	Water Reclamation Facility
Sub-Total	18,361	
Whale Rock Water Treatment Office / Shops	2,500	Whale Rock Water Treatment
Whale Rock Water Treatment Plant House	2,792	Whale Rock Water Treatment
Whale Rock Water Treatment Pump Station 1	1,250	Whale Rock Water Treatment
Whale Rock Water Treatment Pump Station 2	1,250	Whale Rock Water Treatment
Sub-Total	7,792	
Water Treatment Hydro	483	Water Treatment
Water Treatment Ozone	8,025	Water Treatment
Sub-Total	8,508	Water Treatment
TOTAL	58,318	

A decentralized facility organizational structure and management practices will have a direct and sometimes an adverse impact on the effective management of the major facilities' functions. These functions include execution of the planning, design and construction activities integral to major repairs, restoration and renewal of facilities, providing new facilities, and operating and maintaining facilities. The consulting team does not believe any substantive benefit is derived from this decentralization other than reducing workload and “headaches” for the Facilities Maintenance Supervisor.

Facility organizational structure and management practices should be centralized in the Facility Maintenance Division. A decentralized approach to facility maintenance has a number of disadvantages including:

- The lack of city-wide processes for facilities functions such as maintenance management, preventive maintenance practices, service levels, capital project management, and energy management;
- A decentralized operation makes it difficult to track how much money is being spent on facilities because facilities management will be buried in so many separate budgets;
- Facility equipment and systems are becoming increasingly complex and computer-based, and require skilled and knowledgeable staff for their maintenance; and
- A lot of employees are concentrating on facilities maintenance rather than their core competency.

Effective facility management has important cost consequences for the City. Over a 30-year life span of a building, the lion's share of spending will be consumed not by construction of the building, but its operation and maintenance. The staffing tab is more than just significant; it can account for 90% or more of the total life cycle cost.

The responsibility for the maintenance of these facilities should be assigned to the Facility Maintenance Division.

These facilities are not included in the City's cost allocation plan: funding will need to be allocated so that the Facility Maintenance Division can properly maintain these buildings. This will impact only those facilities utilized by enterprise funds. That includes the facilities used by Golf, Transit and the Utilities Department.

Each of the departments or divisions that currently maintain these buildings have budgeted funds to maintain these buildings. These funds should be transferred to the Facilities Maintenance Division.

The workload and staffing impact of the reassignment of these facilities to the Facilities Maintenance Division is presented in the following section.

Recommendation #99: The responsibility for the maintenance and repair of the Parks, Golf, Bus Yard, and Water Treatment Administrative facilities should be assigned to the Facilities Maintenance Division.

Recommendation #100: The departments or divisions that currently maintain their own buildings – Parks Maintenance, Transit, Utilities, and Golf - have budgeted funds to maintain their buildings. These funds should be transferred to the Facilities Maintenance Division.

Recommendation #101: The cost allocation plan should be revised so that funding is allocated to the Facility Maintenance Division so that it can properly maintain these buildings. This will impact only those facilities utilized by enterprise funds. That includes the facilities used by Golf, Transit and the Utilities Department.

4. ANALYSIS OF STAFFING

This section provides an analysis of the workload and staffing levels of the Facilities Maintenance Division including the potential of alternative service delivery.

(1) The Building Maintenance Technician Assigned To Swimming Pool Maintenance Should Be Utilized More Extensively For Building Maintenance.

The City has two swimming pools at Sinsheimer Park. The pools consist of a 50 meter x 25 meter outdoor pool, and a 20 feet by 50 feet outdoor therapy / tot pool.

The Facilities Maintenance Division allocates one and one-half (1.5) full-time equivalent staff to the maintenance and repair of these pools. This includes a Building Maintenance Technician and a half-time (0.5) Building Maintenance Worker. The Building Maintenance Worker allocates all of his time to pool maintenance and repair. The Building Maintenance Technician allocates an estimated 70% of his time to pool maintenance and repair; the remaining 30% is allocated to maintenance of the bathhouses (approximately 8,288 square feet).

The experience of the consulting team in evaluating pool maintenance at other cities indicates that the level of staffing for the maintenance and repair of these two (2) swimming pools should approximate one (1) full-time equivalent position. This is somewhat less than allocated by the Facilities Maintenance Division. The Building Maintenance Technician assigned to swimming pool maintenance should be assigned responsibility for the maintenance and repair of additional buildings beyond the two bathhouses at Sinsheimer Park. These buildings should not exceed 24,500 square feet in additional responsibility.

This is NOT recommending a decrease in pool hours in which the pools are open to the public. It is NOT recommending the closure of the pools. Rather, the experience of the consulting team indicates that one and one-half (1.5) full-time equivalent staff is unnecessary for the maintenance and repair of these pools. One (1) full-time facilities maintenance staff is sufficient. **This has NOTHING to do with the hours that the swimming pools are open or closed.**

The equivalent of one-half (0.5) full-time equivalent of the Building Maintenance Technician position should be utilized for the maintenance of other facilities beyond the

swimming pools; these facilities would continue to include the new therapy pool, the Sinshiemer stadium, Sinshiemer Pool/new bath house, Sinshiemer swimming pool, Sinshiemer Pool/old bath house, but should be substantively expanded to include other buildings beyond this park. The position has been underutilized.

Recommendation #102: The Building Maintenance Technician assigned to swimming pool maintenance should be assigned responsibility for the maintenance and repair of additional buildings beyond the facilities at Sinsheimer Park.

Recommendation #103: The Facility Maintenance Supervisor should assign work orders to the Building Maintenance Technician assigned to swimming pool maintenance for the maintenance and repair of facilities beyond those facilities at the swimming pool.

(2) An Additional Building Maintenance Technician Should Be Authorized for the Facilities Maintenance Division.

The exhibit following this page presents the square footage of buildings and other types of facilities (i.e., parking garages, warehouses, etc.) maintained by the Facilities Maintenance Division. Important points to note regarding the exhibit are presented below.

- **These various buildings comprise 665,288 square feet.** However, 65% of this square footage consists of parking structures. These parking structures include the structure at 842 Palm Street, 919 Palm Street, and 871 Marsh Street.
- **The total amount of buildings that are equipped with heating, ventilating, and air conditioning comprise 186,052 square feet.** These include such buildings as City Hall (22,971 square feet), the Corporation Yard buildings A and B (24,301 square feet), Fire Station #1 (17,498 square feet), the Ludwick community center (15,190 square feet), the Police Station (24,000 square feet), and the Public Works Department / Community Development Department offices (16,000 square feet).

Exhibit 9 (1)

**Buildings Maintained by the
Facilities Maintenance Division**

Location	Square Feet	Air Conditioned? 
919 office space	16,000	
City /County Library	6,695	
City Hall	22,971	
City/County Museum	4,724	
Corp Yard Bldg A/shops	14,843	
Corp Yard Bldg B/admin	9,458	
Corp Yard Bldg D/flammable stor	1,050	
Corp Yard Bldg E/ fuel island	2,475	
Corp Yard Bldg WH/warehouse	6,000	
Corp Yard Bldg WWC/waste water col	1,500	
Fire Station #1	17,498	
Fire Station #2	2,850	
Fire Station #3	3,576	
Fire Station #4	3,130	
Jack House gift shop	288	
Jack House residence	3,632	
Jack House serv bldg	543	
Ludwick Com Cnter	15,190	
Meadow Park meeting rm	6,752	
New Dispatch Center	6,044	
New Fire storage	2,900	
New Therapy pool	1,350	
Old Library	11,300	
Parking Enf offices	3,700	
PD admin	24,000	
PD annex	1,225	
Radio sheds @ FS 2&3	300	
Railroad museum	5,300	
Recreation Dept Offices	4,200	
Senior Center	5,766	
Sinshiemer Pool/new bath house	5,913	
Sinshiemer Pool/old bath house	2,375	
Sinshiemer stadium	2,830	
Sinshiemer swimming pool	12,300	
Utility admin	3,810	
Total	232,488	

Exhibit 9 (2)

Location	Square Footage	Air Conditioned? (Y/N)
Parking Structure #1 Palm	122,600	
Parking Structure #2 Marsh	224,200	
919 Parking Structure #3 Palm	86,000	
Parking Structure #2 addition	88,248	
Total	521,048	

- **Those buildings that the Division allocates most of its work order hours to are typically those buildings that are equipped with heating, ventilating, and air conditioning equipment.** The table below presents a distribution of the staff hours charged to work orders by building for those buildings to which not less than 100 staff hours were charged between January 1, 2010 and December 7, 2010.⁴⁸

Building	Staff hours	% of Total Work Hours
City Hall	420.26	18.6%
Fire Station #1	200.50	8.9%
Jack House	186.25	8.2%
Marsh Parking Structure (838 Pacific)	133.05	5.9%
Police Station	351.95	15.5%
Ludwick Center	196.00	8.7%
Recreation Offices	139.45	6.2%
Senior Center	108.50	4.8%
Swim Center	529.37	23.4%
TOTAL	2,265.33	100%

* Note: This table represents those buildings that not less than 100 staff hours were charged to work orders between January 1, 2010 and December 7, 2010.

The amount of staff hours allocated to these nine (9) buildings amounted to 2,265 hours: that amounted to 65% of all of the staff hours charged to work orders between January 1, 2010 and December 7, 2010. Seven (7) of these (9) facilities consist of buildings equipped with heating, ventilating, and air conditioning. The exceptions are the Marsh Parking Structure and the Swim Center. (The staffing for the swim center will be evaluated separately from that required for the maintenance and repair of buildings.)

The *International Facility Management Association Report #32 – Operations and Maintenance Benchmarks* – published in 2009 - reports that the average gross square feet per maintenance staff amounted to 49,000 square feet.⁴⁹ Of the 665,288 square feet maintained by the Division, 186,052 square feet are equipped with heating, ventilating, and air conditioning equipment. This would indicate the need for almost four (3.8) staff – Building Maintenance Technicians and Building Maintenance Workers.

⁴⁸ This is based upon information provided by the Public Works Department in a report entitled Building Maintenance Division – Statistics for Work Completed between 01/01/10 and 12/07/10.

⁴⁹ International Facility Management Association, Operations and Maintenance Benchmark Report #32, 2009.

There are two extenuating factors, however, that indicate one (1) additional Building Maintenance Technician position should be authorized as noted below.

- The consulting team recommends that the departments or divisions that currently maintain their own buildings – Parks Maintenance, Transit, Utilities, and Golf - should transfer this responsibility to the Facilities Maintenance Division. These facilities contain 58,318 square feet, not all of it heated, ventilated, or air conditioned. Approximately 36,000 square feet is air conditioned. That, combined with the factored space that is not air conditioned would equate to approximately 37,300 square feet that requires maintenance and repair.
- There is 479,236 square feet of space that is not heated, ventilated, or air conditioned. While this space does not require the same level of maintenance and repair as buildings that are heated, ventilated, or air conditioned, the space does require some attention. Almost three-quarters (73%) of this space consists of parking structures. In the time period from January 1, 2010 to December 7, 2010, the Division's staff allocated 204.8 staff hours to the maintenance of parking structures.⁵⁰ This amounts to 5.8% of the total staff hours charged to all of the City's buildings on work orders by the staff of the Division. This would suggest that a factor or equivalent of 5.8% of this space should be utilized for the assessment of staffing. This would suggest that this space is equivalent to approximately 28,000 square feet of heated, ventilated, or air conditioned space.

This would indicate that a total of 1.3 full-time equivalent staff are required for the maintenance of these facilities.

Altogether, a total of 5.1 staff are required for the maintenance and repair of all of these facilities: those that are currently assigned to the Division and those recommended to be assigned to the Division. This compares to the existing allocation of four and one half (4.5) full-time equivalent staff available: the four (4) Building Maintenance Technicians and Workers assigned to facility maintenance and one-half (0.5) of the Building Maintenance Technician assigned to swimming pools (who, as noted earlier, should allocated one-half of his available work hours to the maintenance

⁵⁰ This is based upon information provided by the Public Works Department in a report entitled Building Maintenance Division – Statistics for Work Completed between 01/01/10 and 12/07/10.

of facilities other than swimming pools). This is a deficit of a little more than one-half (0.6) full-time equivalent.

The Matrix Consulting Group recommends that an additional full-time Building Maintenance Technician be authorized. This recommendation is based on the paragraphs noted below.

- **Workload exceeds existing staff capacity by a little more than one-half (0.6) full-time equivalent.** The Division requires a total of 5.1 staff for the maintenance and repair of all of these facilities: those that are currently assigned to the Division and those recommended to be assigned to the Division. This compares to the existing allocation of four and one half (4.5) full-time equivalent staff available.
- **The Division needs to substantively improve the preventive maintenance of the City's facilities.** As discussed later in this chapter, there are substantive opportunities to improve the extent of preventive maintenance.
- **The response time to service requests by customers – other divisions and departments in the City - is lengthy.** This will be discussed later in this chapter. The response time when parts are ordered is fourteen (14) days, and eleven (11) days when parts are not ordered. This response time is too lengthy.

This position should replace, in part, work being performed by contractors – specifically maintenance and repair of the heating, ventilating, or air conditioning equipment. This contract amounts to \$17,900.

The annual cost impact of this recommendation is presented in the table below.

Recommendation	Annual Cost Impact
A Building Maintenance Technician position should be authorized for the Facilities Maintenance Division.	\$76,300
The contract for maintenance and repair of the heating, ventilating, or air conditioning equipment should be eliminated when the recommended Building Maintenance Technician position is filled.	(\$17,900)

Recommendation #104: The City should authorize an additional Building Maintenance Technician position for the Facilities Maintenance Division.

Recommendation #105: The Public Works Department should cancel the contract for maintenance and repair of the heating, ventilating, or air

conditioning equipment should be eliminated when the recommended Building Maintenance Technician position is filled.

(3) The Facility Maintenance Division Uses The Right Balance of Contractors and In-House Staff.

At the present time, the Facility Maintenance Division uses contractors in wide variety of roles. These roles are noted below.

- Janitorial maintenance has been outsourced.
- Window washing, carpet extraction and bonnet cleaning, window washing, hard floor scrubbing and recoating, shower and changing area scrubbing, spot cleaning of folding tables and stacking chairs, high dusting, wood floor refinishing, heating, ventilating, and air conditioning equipment filter changing, fire extinguisher service, pest inspection and control services, fire and security alarm monitoring, and elevator maintenance all have been outsourced.

Overall, the consulting team believes that the Division has an effective mix of contractors and in-house staff. The consulting team does not recommend that any additional services be outsourced. The Division, with the exception of the Building Maintenance Technician assigned to pool maintenance, effectively utilizes its staff given the amount of staff available and the square footage of buildings that these staff are assigned responsibility for maintenance and repair. In fact, with the recommended addition of a Building Maintenance Technician, the consulting team recommends that the changing of heating, ventilating, and air-conditioning equipment filters be insourced.

Recommendation #106: The Facility Maintenance Division should not change the existing balance of contractors and in-house staff with the exception of preventive maintenance of its heating, ventilating, and air conditioning components.

(4) The Public Works Department Should Explore Alternative Service Delivery Options For Facilities Maintenance.

Alternative service delivery refers to any process that shifts some or all of the

functions or responsibilities of delivering a service from the public sector to the private sector. Alternative service delivery can take many different forms as noted below.

- Asset Sale Or Transfer, whereby a government divests itself completely of an asset, turning over ownership to a private firm, a nonprofit organization or another government.
- Contracting out management of an asset, service or function to a private or nonprofit entity. The government retains ownership of any asset involved. However, the managing entity assumes responsibility for personnel. If a government transfers responsibility for management of service provision or a function to a private entity, it is referred to as Commercialization. An example of a commercialization effort is long-term lease arrangement that the City of Chicago has negotiated with the Cintra-Macquarie Consortium for operation of the Skyway. An example of a non-profit entity managing an asset is the Lincoln Park Zoological Society operating the Lincoln Park Zoo in Chicago.
- Corporatization, in which a government function is spun off to a government corporation that functions much like a private corporation, but with a public mission. Examples of this are the United States Postal Service or the Pension Benefit Guarantee Corporation.
- Establishing internal markets, whereby departments purchase or contract for goods or services from other departments.
- Selling a franchise to a private firm, such as a utility company. This gives the firm exclusive rights to provide a service.
- Intergovernmental contracts or cooperation, which is a variation of contracting out, involves governments cooperating to jointly purchase or deliver goods or services. This option is quite common among local governments.
- Managed competition, in which government employees can competitively bid against private contractors to provide certain services.
- Vouchers, where the government pays for a good or service, but provides citizens with choices as to their preferred way of obtaining the good or service.

The potential of alternative service delivery options are limited for the Facilities Maintenance Services Division as noted below.

- The City should not divest itself of its facilities. Without these facilities, the City would be unable to provide offices for its employees to deliver services.

- The City should not contract out management of the maintenance of its facilities. The cost of management of the maintenance of facilities would likely exceed the salary and fringe benefit cost of the Facilities Maintenance Supervisor, particularly given the isolated geographical location of the City.
- Corporatization offers little in value given the staffing of the Division is less than that suggested in benchmarks established by the *International Facility Management Association* Report #32 – Operations and Maintenance Benchmarks – published in 2009.⁵¹
- Establishing internal markets is not a viable option once the Division assumes responsibility for the maintenance and repair of all of the City's facilities, as recommended earlier in this chapter.
- Selling a franchise is not a viable option. The Division generates little revenue on its own to support a franchise.
- Intergovernmental contracts with the County and the School District should be explored. Under this arrangement, the City would establish an intergovernmental contract with the County and / or the School District to manage the maintenance of their facilities or to maintain and repair their facilities. Other public sector agencies have adopted such intergovernmental agreements. This is most often observed for joint use facilities such as consolidated dispatch centers or consolidated library systems, or in instances in which one agency uses a facility belonging to another agency such as school facilities.
- Managed competition offers little merit. As noted earlier, the staffing of the Division is less than that suggested in benchmarks established by the *International Facility Management Association* Report #32 – Operations and Maintenance Benchmarks – published in 2009.⁵²
- The use of vouchers offers little merit. The Police Department and the Fire Department, for example, could be provided with vouchers to obtain facility maintenance and repair services from the private sector. However, the staffing of the Division is less than that suggested in benchmarks established by the *International Facility Management Association* Report #32 – Operations and Maintenance Benchmarks – published in 2009.⁵³ In addition, the facility assets owned by the City require professional management. The Facility Maintenance Supervisor best provides that management.

⁵¹ International Facility Management Association, Operations and Maintenance Benchmark Report #32, 2009.

⁵² International Facility Management Association, Operations and Maintenance Benchmark Report #32, 2009.

⁵³ International Facility Management Association, Operations and Maintenance Benchmark Report #32, 2009.

Overall, the alternative service delivery option with the greatest potential for the Public Works Department would be intergovernmental contracts with the County, with the School District, or the Federal Government.

Recommendation #107: The Public Works Department should explore facility maintenance and repair intergovernmental contracts with the County, with the School District, or the Federal Government.

5. ANALYSIS OF OPERATIONS AND MANAGEMENT

This section provides the project team's analysis of the opportunities for improvement in the operations and management systems for the Facilities Maintenance Division.

In conducting this analysis, the project team utilized best practices found in other cities and its own experience in analyzing facility management services practices in cities for over thirty (30) years, the best practices cities by other facilities management consultants, and the practices of other cities with well managed facilities.

The consulting team could not rely exclusively on best practices of the *American Public Works Association* or the *International Facility Management Association*. The *American Public Works Association* and the *International Facility Management Association* have developed best practices that include standards for the condition assessments, preventive maintenance, etc. The *American Public Works Association* and the *International Facility Management Association* have not developed best practices for predictive testing and inspection programs, how to develop a deploy a preventive maintenance program, etc.

(1) The Facilities Maintenance Division Should Conduct Formal Condition Assessments Of Primary City Facilities And Use These Assessments To Develop A Written, Five Year Plan For Building Component Replacement.

The *American Public Works Association* recommends in its *Public Works Management Practices Manual* under practice 16.4 that “a condition assessment of all facilities and major facilities is maintained and updated on a regular basis.”⁵⁴

Why conduct condition assessments? Information on conditions helps identify needed maintenance.

Facility condition assessment is a process of (1) developing a database of existing conditions of buildings by conducting a facilities condition assessment, (2) assessing facility conditions, and (3) reporting and presenting findings. The condition assessment assists in the development of a quantitative basis for major maintenance and capital renewal. This condition assessment should focus on the primary city-owned buildings, and use a simple approach in conducting the assessment.

The recommended steps that the Facilities Maintenance Division should utilize in conducting the facility condition assessment are provided below.

- **The building components included in the condition assessment should be defined.** The assessment should characterize a building using ten (10) building systems. Each of these elements is described as follows:
 - Foundations: This includes stem walls and foundations as observed from the perimeter or available crawl spaces, and also includes exterior stairs and retaining walls;
 - Envelope: This includes exterior sidings and their finishes, window systems, exterior doors, frames, and hardware, and the structure’s supporting columns and beams;
 - Floor System: This includes the structural portions of the floor, whether on-grade or elevated, as well as interior stair systems;
 - Roof System: This includes the structure supporting the roof and the actual roofing materials (membrane, shingles, flashing, etc.) themselves;

⁵⁴ American Public Works Association, *Public Works Management Practices Manual*, 2004.

- Finishes: This includes interior walls, ceilings, and floor finishes as well as interior door and window systems;
 - Specialties: This includes toilet partitions, interior signage, fixed seating (gym, auditorium, lecture, cafeteria, etc.), and room casework items (chalkboards, tack boards, built-in cabinets, etc.);
 - HVAC System: HVAC stands for “Heating, Ventilation and Air Conditioning”, including everything related to making those systems operate;
 - Plumbing System: This includes all of the typical plumbing fixtures as well as the piping going to, and coming from, those fixtures;
 - Electrical System: This includes the equipment providing service to the building and the devices inside the building – lighting, lighting controls, outlets, panels, wiring, etc., and also including low voltage devices providing communications and data; and
 - Safety Systems: The components included here relate to fire detection and suppression, exiting, asbestos, and ADA accessibility.
- **The condition assessment should generate a facility condition index.** A Facility Condition Index (FCI) – describes the current existing state, or physical condition, of a building as compared to the cost model. The total estimated cost of the repairs is divided by the current replacement value (CRV) for the facility (cost model), resulting in the FCI. The higher the FCI is, the poorer the relative condition of the facility. The formula to calculate the FCI is: $\text{Total Deficiencies} / \text{CRV} = \text{FCI}$. For example: $(\$2,400,050 \text{ in total deficiencies}) / (\$3,675,000 \text{ CRV}) = 65.31\%$. The FCI is a nationally recognized facility management benchmark that is used to objectively assess the current and projected condition of a building expressed as a ratio. The CRV used to calculate the FCI can be developed by using a building cost model template from the R.S. Means® Construction Database for a building of similar use, construction type, and of the same physical size. The standard guideline for FCI is: Good = 0% to 5%, Fair = 5% to 10% (functional and repairable), Poor = 50 to 70% (needs significant attention), and Critical = greater than 70% (candidates for replacement).
- **The condition assessment should be conducted every three to five years.** The success of any ongoing facility assessment process depends on the use of the data collected, and the regular updating and management of new data as repair projects are completed or new concerns become evident with building age. It is highly recommended that the Division to perform FCI condition assessments on a 3 to 5 year recurring basis to achieve maximum benefit from this powerful and worthwhile tool in the overall management of their facility maintenance operations.
- **The Division should train its Building Maintenance Technicians to conduct the condition assessments.** Well-prepared training sessions in the use of the inspection forms should be designed to guide conducting a thorough inspection, and accurately reporting results. This training could include building component

maintenance standards, use of inspection forms, describing and quantifying deficiencies, estimating maintenance and capital renewal project costs, and use of results. Training is essential to the objectivity of trainers and the consistency in the assessment among all of the trainers

- **The Division should develop inspection forms and criteria to guide the condition assessment.** The staff of the Division should record their observations in forms that are customized to the type of building component that is being evaluated. These forms are designed to ensure consistency in the rating of building components by the different staff from the Division.

An example of the inspection criteria that could be utilized for air conditioning systems is presented in the table below.

What to look for during inspections under this category	Examples of deficiencies found in this category
• All areas should be a comfortable temperature and not overly hot or cold • All areas should have good air circulation and should not be stuffy or stale • Exterior AC units should be in good repair	• Air Conditioning System is not working • Problems with the AC system exist • Temperature falls outside acceptable range as measured by temperature meter • Air flow delivery is impaired as demonstrated in an air flow delivery test using electronic flow meters • There is inadequate ventilation as measured by indoor and outdoor CO₂ levels as measured by a CO₂ meter • Humidity is excessive as measured by humidity meters • There is a build-up of dust, dirt, mold, or mildew on the air ventilation grills or the air return grills • Sharp unprotected corners on exterior units • AC units vibrating or excessively noisy
• The Facilities Maintenance Division should use diagnostic tools to supplement condition assessment observations. Staff of the Division should use diagnostic tools to supplement their observations in the field as they perform building and equipment condition assessments. As an example, diagnostic tools such as infrared scanning equipment should be used to detect loose electrical connections or “hot spots”, warm and cold areas in roofing systems and to pin point air leaks and insulation voids or damaged insulation. These tools could also include testing instruments to measure indoor air quality such as electronic flow meters, CO ₂ meters, humidity meters, etc., when indoor air quality appears to be a problem	
• The condition assessment should rank the deficiencies that were identified (i.e., immediate, year one, year two through five, etc. The costs associated with addressing the deficiencies identified in the condition	

assessment will be substantial. The Division should prioritize deficiencies. Suggested priorities, in broad descriptive categories, are presented below.

- Liability proposals: special matters requiring early attention to remove jeopardy through life safety, property damage, regulatory.
 - Program and operational purposes: actions necessary to support an organization's mission and meet operational requirements.
 - Economy and efficiency measures: projects that also support program and operational objectives but deserve special attention because they will result in immediate or eventual cost savings.
- **The condition assessment should include cost estimates for remediating deficiencies.** The condition assessment conducted by the Division did not, initially, include the cost for remediation of observable deficiencies identified by Division. The assessment should include these costs to assist facility management staff in the prioritization of resources across all of the building renewal and replacement needs of the City. The cost estimates for repair of a given facility system should be taken directly from the RS Means Square Foot Cost, or Mechanical Cost Data, or Electrical Cost Data, etc. The costs used should represent construction costs only, and not reflect design fees, contingencies, and other so called “soft” costs. The costs used should be current dollars. Depending upon the year of construction an inflation allowance should be added. These cost estimates should be used to identify and prioritize specific projects. Subsequently, a more detailed, project-specific cost estimate should be developed to ensure project budgets or requests for funding are reasonable and accurate at the anticipated time of construction.

The *Building Research Board of the National Research Council* recommended that an appropriate total budget allocation for routine facility maintenance *and* capital renewal should be in the range of 2% to 4% of the aggregate current replacement value (excluding major infrastructure such as foundations). The *Association of Physical Plant Administrators* (APPA) recommended that the specific percentage for a facility depends on a wide range of factors, and the relationship between maintenance and repair requirements and current replacement value may vary widely, for any one building may be outside the proposed range. APPA indicated that the 2% to 4% range is most valid as a budget guide for an inventory of buildings and over periods of several

years. The *International Facility Management Association* Report #32 – Operations and Maintenance Benchmarks – published in 2008 reports that the 274 public and private facility management organizations that reported data indicated that they were spending 1.55% of current replacement value for routine maintenance and repair at the mean.

However, it will be pointless to conduct these assessments without any capital funding to address needed building component replacements. Until such funding is available, these assessments should be considered a low priority.

Recommendation #108: The Facilities Maintenance Division should conduct formal condition assessments every three to five years of primary City facilities and use these assessments to develop a written, five year plan for building component replacement.

Recommendation #109: The City should allocate approximately 1.5% to 3% of current replacement value of City buildings (excluding the value of land) to building component replacement on an annual basis.

Recommendation #110: The City should allocate approximately 1% to 2% annually to ongoing facilities maintenance and repair including major maintenance.

(2) The Facilities Maintenance Division Should Develop A Five-Year Capital Replacement Plan For Minor Capital Outlay.

The *American Public Works Association* recommends in its *Public Works Management Practices Manual* under practice 16.5 that “a component replacement plan should be established for major components. Development of this plan allows agencies to project maintenance budgets and reduce the need for deferred maintenance. This expense may be a capital or non-capital expense.”⁵⁵

Why develop plans for minor capital outlay? Unless planned, replacement tends to occur when equipment breaks - typically a more costly arrangement that interrupts use of the building. City's should look out five years and develop plans to guide

⁵⁵ American Public Works Association, *Public Works Management Practices Manual*, 2004.

replacement that meets their overall needs and reduces facility downtime.

The Division should prepare a five-year capital replacement plan for minor capital outlay. This plan should be established within the context noted below.

- **The Division should be based upon the useful life of building components.** The Division should develop a five-year plan that contains an inventory of all buildings' components and systems, their condition, and estimates of their expected remaining useful life, and the proposed replacement of facility assets over this five-year time span.
- **The Division should base the five-year plan upon the facility condition assessments.** The Division has expended considerable effort on facility condition assessments. These assessments should serve to drive much of the "Major Maintenance Plan." This should include the identification of facility equipment that needs to be replaced based upon these assessments.
- **The plan should include those assets that the Facility Maintenance Supervisor identified as needing replacement.** The Facility Maintenance Supervisor has already developed a list of building components that need replacement. Examples of the components proposed for replacement are presented in the table below.

Capital Project	Estimated Capital Outlay Cost
Replace chiller at Police Department	\$100,000
Replace the lighting and T-bar at the Swim center bath house	\$22,500
Replace the motor starter with a variable frequency drive	\$22,000
Replace cooling compressors at Corporation Yard	\$21,000
Replace the Police Station boiler	\$18,000
Replace the main pool boilers	\$25,300
Replace the variable air volume controllers in the Police Station	\$28,000
Replace the roof at the Ludwick community center	\$87,000
Replace the roof at the Meadow Park recreation center	\$40,000
Replace the HVAC package air conditioning and heating unit at the Police Station	\$24,000
Re-plaster the swim center main pool	\$180,000
Replace the pool cover at the swim center	\$23,000

Not all of components would be eligible for minor capital outlay. Some of these replacements would need to be included in the five-year capital improvement program.

The Division is budgeted \$8,900 for minor capital outlay in 2010-11. It has been authorized little in the way of capital improvement program funding in the past several years excluding roof replacement. This is not sustainable. These building components will ultimately fail, and require replacement. If the City waits to replace these components at the point of failure, the buildings may suffer damage that will cost more to address.

Recommendation #111: The Facilities Maintenance Division should develop a five-year capital replacement plan for minor capital outlay.

Recommendation #112: The City should develop funding plans to address deferred capital replacement requirements for City buildings.

(3) The Facilities Maintenance Division Should Enhance Its Preventive Maintenance Systems and Levels of Service.

The *American Public Works Association* recommends in its *Public Works Management Practices Manual* under practice 16.8 that “a preventive maintenance program establishes and addresses all building maintenance functions. Practice 16.9 states that “the preventive maintenance schedule is determined and recorded.”⁵⁶

Why preventively maintain building components? Many building-industry and facility-management groups, including the American Public Works Association, the Building Owners and Managers Association, 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.⁵⁷ They advocate preventive maintenance for its effects on

⁵⁶ American Public Works Association, *Public Works Management Practices Manual*, 2004.

⁵⁷ American Public Works Association, *Public Works Management Practices*; David A. Avedesian, *How to Design and Manage Your Preventive Maintenance Program*, Building Owners and Managers Association International; Rex O. Dillow, *Facilities Management: A Manual for Plant Administration*, Association of Physical Plant Administrators; and Association of School Business Officers, International,

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.

The Matrix Consulting Group reviewed the preventive maintenance of building components at City Hall in 2010. There were not significant elapsed calendar days (with one exception) between the date the preventive maintenance was scheduled versus the data actually performed. This sample is presented in the table below.

Date	Preventive Maintenance Performed	Elapsed	Staff Hours
04-Jan-10	PM access control systems	0	1.0
05-Jan-10	PM roof drains - clean roof	1	0.5
07-Jan-10	PM lighting - standard	0	6.0
08-Feb-10	PM roof drains - clean roof	0	0.5
02-Mar-10	PM roof drains - clean roof	0	0.4
24-Mar-10	PM air venting and circulation - clean / replace air filters	0	2.0
02-Apr-10	PM appliances, supplies - battery recycle buckets	0	1.0
05-Apr-10	PM sewer line - roots	0	0.0
18-May-10	PM roof drains - clean roof	0	0.3
24-Jun-10	PM fire control systems	77	0.0
24-Jun-10	PM drains and wastewater - sewer gas	0	0.5
29-Jun-10	PM air venting and circulation	0	1.0
07-Jul-10	PM appliances, supplies - battery recycle buckets	0	0.5
21-Jul-10	PM lighting - standard	0	15.0
09-Aug-10	PM drains and wastewater - drain cleaner	0	0.5
04-Oct-10	PM roof drains - clean roof	0	0.5
04-Oct-10	PM appliances, supplies - battery recycle buckets	0	0.5
12-Oct-10	PM audio and video - Zetron System	6	2.0
12-Oct-10	PM sump pumps	0	1.0
13-Oct-10	PM drains and wastewater - sewer gas	0	0.5
21-Oct-10	PM boilers and hydronics	0	2.0
28-Oct-10	PM roof drains - clean roof	0	4.5
02-Nov-10	PM sewer line - roots	19	1.0
02-Nov-10	PM power - fan belt on exhaust fans, clean intake grill in bathrooms, check exhaust fan in lower level restrooms & clean intake registers	16	1.0
01-Dec-10	PM access control systems	16	1.0

Based upon this sample, the Division is completing the preventive maintenance that is scheduled for the City Hall.

However, there are a number of recommendations to enhance the preventive maintenance systems used by the Division.

- **The Division should establish an electrical component preventive maintenance program.** The Division does not have an electrical preventive maintenance program. Data provided by the Institute of Electrical and Electronics Engineers indicates that circuit breakers that are not preventively maintained for more than twenty-four months have a failure rate that is six times as high as circuit breakers that received maintenance less than twelve months ago and three and one-half times higher than circuit breakers that received preventive maintenance twelve to twenty-four months ago. The results for electric motors are similar.

The Division should establish a preventive maintenance program for electrical systems. The specific actions that the Division needs to take to establish this program are presented below.

- Inspection of critical electrical components;
- Testing of the electrical equipment; and
- Cleaning and maintenance of the electrical equipment.

The preventive maintenance program should include such components as main distribution panels, sub-panels, motors, etc.

In developing the preventive maintenance program for electrical components, the Division should develop a preventive maintenance guideline for these components and also checklists. The guideline and checklists developed by the Division should be utilized to determine what aspects of the electrical components are inspected and how often these aspects are inspected.

- **Expand the plumbing preventive maintenance program.** The Division should enhance its preventive maintenance program for plumbing components to include backflow preventers, water heaters, etc. The specific actions that the Division needs to take to establish this program are presented below.
 - Inspection of critical electrical components;
 - Testing and calibration of the equipment; and

- Cleaning, flushing, and maintenance of the equipment.

In developing the preventive maintenance program for plumbing components, the Division should develop a preventive maintenance guideline for these components and also checklists. The guideline and checklists developed by the Division should be utilized to determine what aspects are inspected.

- **Expand the preventive maintenance of the heating, ventilating, and air conditioning systems.** The preventive maintenance program for heating, ventilating, and air conditioning equipment does not appear to include all of the tasks necessary to preventively maintain central air conditioning units. This includes such tasks as the following:
 - Check coils for leaking, tightness of fittings
 - Check evaporator condition and function;
 - Check register and duct distribution;
 - Check piping condition;
 - Inspect damper for dirt accumulations and adjust, check felt; repair or replace as necessary;
 - Check damper motors and linkage for proper operation;
 - Lubricate mechanical connections of dampers sparingly
 - Check vapor barrier condition;
 - Check blower condition;
 - Check condition of interlock functions and limit and shutdown switches;
 - Check for excessive debris build-up and chips and cracks on blades;
 - General lubrication and lubrication of flow control valves; or
 - Check noise, vibration and stability of mounted units, check mounting for tightness, and check mounting bolts and tighten if needed.

In modifying the preventive maintenance program for heating, ventilating, and air conditioning components, the Division should develop a preventive maintenance guideline for these components and a checklist to more completely cover the required preventive maintenance.

An effective preventive maintenance program for building components is essential given the age of the City's buildings, to reduce costs associated with building maintenance and repair, to reduce electrical utility costs, and to reduce risk.

Recommendation #113: The Facilities Maintenance Division should enhance the preventive maintenance program for City buildings by establishing an electrical component preventive maintenance program, expanding the plumbing preventive maintenance program, and expanding the preventive maintenance of the heating, ventilating, and air conditioning systems.

(4) The Facility Maintenance Division Should Establish A Predictive Testing And Inspection Program.

Why utilize predictive testing practices?

Predictive testing uses techniques, such as vibration analysis of moving parts while equipment is operating, to detect trends that indicate excessive wear. This allows repairs to be made before equipment fails, but only when conditions warrant the repair, not on a regularly scheduled basis as with preventive maintenance. Predictive maintenance helps avoid unnecessary overhauls when analysis indicates the equipment is in good condition and does not need work.

Predictive Testing and Inspection should be developed and deployed by the Facility Maintenance Division to determine the most effective approach actions that, when taken, will reduce the probability of failure and which are the most cost effective. A Predictive Testing and Inspection program increases the probability that a machine or building component will function in the required manner over its design life cycle with a minimum of maintenance and at the lowest cost by using non-intrusive testing techniques to assess machinery condition. These techniques are briefly described below.

- Vibration monitoring and analysis - Analysis of system and equipment vibration levels is one of the most commonly used techniques. Vibration monitoring helps determine the condition of rotating equipment and structural stability in a system.
- Infrared thermography - Infrared thermography is the application of infrared detection instruments to identify pictures of temperature differences. Because thermography is a non-contact technique, it is especially attractive for identifying hot / cold spots in energized electrical equipment such as transformers, motor control centers, switchgear, substations, switchyards, or power lines, and other areas where “stand off” temperature measurement is necessary.

- Lubricant and wear particle analysis - Lubricating oil analysis is performed for three reasons: to determine the machine mechanical wear condition, to determine the lubricant condition, and to determine if the lubricant has become contaminated. All machines with motors 7.5 HP or larger, and critical or high cost machines should be evaluated for routine lubricating oil analysis.

The Division should develop recommendations for the consideration of the Public Works Director to establish a Predictive Testing and Inspection program. This should only include, initially, the use of infrared thermography. As the Division gains experience with infrared thermography, it should expand the use Predictive Testing and Inspection to include lubricant and wear particle analysis and vibration monitoring and analysis.

Recommendation #114: The Facilities Maintenance Division should develop recommendations for the consideration of the Public Works Director to establish a Predictive Testing and Inspection program.

Recommendation #115: The Predictive Testing and Inspection program should only include, initially, the use of infrared thermography.

Recommendation #116: As the Facilities Maintenance Division gains experience with infrared thermography, it should expand the use Predictive Testing and Inspection to include lubricant and wear particle analysis and vibration monitoring and analysis.

(5) The Facilities Maintenance Division Should Develop And Install A Formal Work Planning And Scheduling System.

The work performed by Facilities Maintenance Division is not formally planned and scheduled on a routine, ongoing basis.

Why plan and schedule work? The Association of Physical Plant Administrators noted that “the first basic element in a sound maintenance management program is the work control function. Work control essentially comprises three processes:

- The work order system, which identifies and categorizes work;
- Work authorization, which cites availability of resources; and

- Work planning, scheduling, and reporting.”⁵⁸

The Facilities Maintenance Supervisor should develop and install a formal work planning and scheduling system within EnerGov. The planning and scheduling system should be developed to accomplish the following:

- Reduce the rate of equipment failures;
- Lower maintenance costs;
- Improve planning and scheduling of work;
- Manage resources to improve productivity;
- Define the minimum requirements for preventive maintenance;
- Provide periodic reports to management.

The steps necessary to establish this planning and scheduling system are portrayed below.

- Develop and utilize a work order generated by EnerGov for the performance of all preventive maintenance and corrective repairs. The Facilities Maintenance Division staff should not perform any work without the assignment of a written work order. At a minimum, the work order should include the following components:
 - The building;
 - The location;
 - The date the request for service was made and the date of completion;
 - The equipment on which the preventive maintenance or corrective repairs is to be performed;
 - Specific work instructions; and
 - The cost of the service including the hours of labor, amount of materials and supplies, and other costs such as contractors.

⁵⁸ Association of Physical Plant Administrators, Facilities Management: A Manual for Plant Administration, 1997.

This work order should serve as the basis for all assignments to the Facilities Maintenance Division staff.

- **Develop a planning and scheduling system.** Planning and scheduling defines how staff resources will be utilized over a period of time and provides the basis for evaluating actual labor hours versus planned. Also it is a means for notifying the customer of milestones and completion dates. Scheduling can be divided into three types: master scheduling, weekly scheduling, and daily scheduling.
 - Master scheduling is the broadest, largest range type of scheduling. It looks forward to a horizon that is at least three months. A typical master schedule has the characteristics portrayed below.
 - It has a three to six month horizon.
 - Two schedules would be developed: one for corrective repairs and one for preventive maintenance.
 - Only large jobs or projects are scheduled for the corrective repair schedule. These would typically be anything more than 24 to 32 work hours of labor. No attempt is made to schedule emergency or minor repairs.
 - The time period in the master schedule is typically divided into bi-weekly or monthly schedules.
 - All available capacity is not scheduled for corrective repairs. Typically, only 50% of available labor hours should be scheduled. The remainder is reserved for emergencies, and preventive maintenance.
 - Preventive maintenance should be included in the master schedule and list the equipment and the type of preventive maintenance to be performed.
 - Master schedules are shared with operating departments.
 - Weekly scheduling is fed by the master schedule with jobs that have been anticipated and planned well in advance. The weekly schedule also contains unplanned jobs that arise unexpectedly or result from a shift in priorities. A typical weekly schedule has the characteristics portrayed below.
 - While master schedules contain only 50% to 80% capacity, weekly schedules should attempt to contain 80% to 90% of capacity.

- Weekly schedules reflect known leave by employees.
- Jobs are not scheduled until major items of material are available in the warehouse.
- Daily scheduling is the process of converting the weekly schedule into daily assignments through work orders.

The preparation of this scheduling system should be the responsibility for the Facilities Maintenance Supervisor.

Recommendation #117: The Facilities Maintenance Supervisor should develop, install, and assure the utilization of a work planning and scheduling system by the supervisors of the Facilities Maintenance Division.

(6) The Facilities Maintenance Division Should Set Objectives For Chargeable Hours By Its Building Maintenance Technicians And Building Maintenance Workers.

The benchmark utilized by the Matrix Consulting Group for chargeable hours per Building Maintenance Technician and Building Maintenance Worker amounts to 125 hours a month or 72% of their available work hours.

However, a review of actual hours charged to work orders in calendar year 2010 (through December 7) and adjusted for the full calendar year indicated that the six staff (excluding the Facilities Maintenance Supervisor) charged a median of 63 hours per month. The table below presents a summary of the data.

Technician	Annual Labor Hours	Monthly Hours
Division Employee #1	837.0	74.02
Division Employee #3	718.0	63.50
Division Employee #4	1,045.0	92.41
Division Employee #5	476.0	42.10
Division Employee #6	316.0	27.95

Overall, a median of 63 hours was charged to work orders per employee per month or 51% of the benchmark.

The Division should establish a policy regarding labor reconciliation that requires the Facilities Maintenance Supervisor to review the monthly direct-billed hours report to ensure accountability for all of the staff of the Division. This same policy should also require the Facilities Maintenance Supervisor to monitor adherence to this objective and report monthly to the executive management of the Public Works Department.

Recommendation #118: The Facilities Maintenance Supervisor should set an objective of an average of 125 working hours charged to work orders per month for its staff (this excludes leave).

Recommendation #119: The Facilities Maintenance Supervisor should review the monthly direct-billed hours report to ensure accountability for its staff, and report actual adherence to this objective to executive management of the Public Works Department on a monthly basis.

(7) An Internal Service Fund Should Be Established For The Facilities Maintenance Division.

Why establish an internal service fund for the Facilities Maintenance Division?

The use of a charge-back system has three primary benefits, which are presented in the points below.

- Charge-back systems improve the consumption and provision of facility resources by: (a) illustrating linkages between the behavior of facility users and the costs of the facility maintenance and repair and related services they consume; and (b) encouraging facility users to hold the Division accountable for the quality and costs of the goods and services provided. The second of these effects has a more profound impact on the cost-effectiveness of a facility management organization than virtually any other process improvement that can be implemented in an organization.
- The second reason for implementing a charge-back system is to promote equitable treatment of facility users. Since facility users pay for only the resources they use in a transaction, service-based charge-back system, there is no cross-subsidization of facility costs.
- The third reason for implementing a charge-back system is to ensure the timely operation and maintenance of facilities and related equipment. Using a charge-back system allows for facility capital costs to be amortized over several years

making it easier to accommodate peaks in asset replacement spending requirements.

Since using a charge-back system to finance the Division would mean paying for facilities and related maintenance and repair services delivered by the Division, facility customers would behave more cost effectively than they would if these resources were given to them. For the same reason, facility customers also would put more pressure on the Division to charge prices that are competitive with the private sector than they would if the resources were provided free of charge or that are not readily apparent in a cost allocation system.

Internal service funds are designed to account for the financing of goods and services provided by one department or division to other departments or divisions on a cost reimbursement basis. Internal service funds are internal billing arrangements used by facilities managers to allocate the costs of facility-related services to their internal customers.

To be effective, the underlying principle of this system must be to emulate commercial practice, to provide and bill services in a manner that closely approximates how landlords transact business with their tenants regarding contract rent (i.e. the rental rate stipulated in a lease agreement). For most facilities supervisors, the closest equivalent to contract rent is the rate per square foot charged to internal tenants for the space they occupy.

Recommendation #120: The Public Works Director should direct staff, as appropriate, to develop and present a financial policy and procedure to the Public Works Director, Finance and Information Services Director, and City Manager that would establish the Facility Maintenance Division as an Internal Service Fund.

Recommendation #121: The Facility Maintenance Division should be established as an Internal Service Fund.

(8) The Facilities Maintenance Supervisor Should Assure That Formal Energy Audits Are Conducted Of The City's Primary Buildings.

The *American Public Works Association* recommends in its *Public Works Management Practices Manual* under practice 16.12 that "energy consumption reports are periodically performed for all facilities under the control of operation of the agency. Facilities can consume vast amounts of energy. Annual review of the energy consumed (electricity, gas, or fuel oil) and energy lost will allow operations or equipment changes which assist in minimizing energy consumption based on the development of utility record costs and consumption by building unit."⁵⁹

Why conduct these energy audits? Electric utility and gas utility budgets in fiscal year 2010-11 amount to \$229,700 or 21% of the budget for building maintenance (excluding swimming pool maintenance).

An energy audit of a building is the crucial first step to assess where energy is consumed in City buildings. An energy audit identifies where energy is consumed and how much energy is consumed in an existing building. Information gathered from the energy audit can be used to introduce energy conservation measures or appropriate energy-saving technologies, such as electronic control systems, in the form of retrofits. Energy audits identify economically justified, cost-saving opportunities that result in significantly lowered electrical, natural gas, steam, water and sewer costs.

The steps involved in conducting an energy audit are noted below.

- **Initial data gathering.** At least two years' worth of utility energy data should be compiled and reviewed. The data should include electricity, and natural gas. The information developed will be the basis for evaluating characteristics of systems

⁵⁹ American Public Works Association, *Public Works Management Practices Manual*, 2004

operations, establishing energy benchmarks vis-a- vis averages, determining potential savings, setting an energy-reduction target, and defining a baseline against which to measure the effectiveness of energy efficiency / conservation measures to be implemented.

- **On-site inspection.** This step involves detailed inspection of building components and systems. The actual amount of time needed for this inspection will depend on how thorough the initial data gathering and assessments have been, the need for measurement and testing equipment, and complexity of the building and their associated systems. The inspection is essentially a comparison to “best practices” and entails an assessment of how the various systems are set up, their actual operating conditions, and the control methods used to manage the building systems.
- **Data analysis.** The analysis subsequent to the on-site inspection is a necessary and important step. The analysis of the data involves calculating energy efficiencies. Electric demand data and thermal data analyses should be used to assess energy savings opportunities. Recommendations on mechanical, electrical, lighting, structural, operational and maintenance improvements should be developed at this stage. These recommendations comprise energy conservation measures and operations and maintenance measures that are identified based on key indicators derived from the audit data, records examined and actual inspections.
- **Report.** The last and final step is the organization of the audit into a comprehensive report. The final written report should include data, recommendations, savings estimates, and cost estimates for recommended conservation measures and systems improvements.

The Facilities Maintenance Supervisor should work with Pacific, Gas and Electric and Southern California Gas Company to conduct these energy audits. In addition, the Supervisor should consult with his peer at Cal Poly San Luis Obispo. Cal Poly San Luis Obispo has installed a large solar photovoltaic system, and is investigating opportunities for even larger solar systems, wind power, fuel cells, biomass systems, and cogeneration or combined heat and power systems. Cal Poly San Luis Obispo completed a campus wide energy audit in 2010 to identify opportunities for conservation.

Recommendation #122: The Facilities Maintenance Supervisor should assure that formal energy audits are conducted for all of the City's primary buildings.

(9) The Response To Work Order Requests By The Facilities Maintenance Division Is Lengthy.

The table below presents the work orders completed by the Facilities maintenance Division for the past eleven (11) years from 2000 to 2010, and the average number of days required to close work orders.

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Number of work orders	1,122	1,161	1,042	1,175	1,176	1,125	1,464	1,541	1,600	1,500	1,580
Avg. days to complete / Parts ordered	23	39	31	15	22	15	23	24	27	46	14
Average days to complete / no parts ordered	8	7	7	10	6	5	6	6	11	29	11

Important points to note concerning the table are presented below.

- **These columns represent the number of workdays to complete work orders.** The average workdays to complete / parts ordered represents the elapsed time from the opening of the work order, not the elapsed time after the parts were ordered. The average workdays to complete / no parts ordered, represents the elapsed time from the opening of the work order.
- **The peak in 2009 represented a change in actual elapsed time.** The elapsed time in that calendar year was, in fact, longer due to a confluence of events including vacant positions in the Division and the remodeling of City Hall which required significant support and allocation of staff hours by the Division to complete.
- **The number of work orders completed by the Division has increased by 41% over the past eleven years** from 1,122 in 2000 to 1,580 in 2010. However, in the last four years, the number of work orders completed has been fairly consistent. This data should be viewed with caution; work orders comprise only 51% of the net available work hours of the staff of this Division.
- **The number of days required to complete a work order has varied widely over the past ten years.** The average days required to complete a work order when parts were not ordered ranged from five (5) days in 2005 to twenty-nine (29) days in 2009. In 2010, the average days required to complete a work order when no parts were ordered amounted to eleven (11). In instances when parts

were ordered, the average days required to complete a work order ranged from fourteen (14) days in 2010 to forty-six (46) days in 2009. Clearly, 2009 was not a good year.

- **Some type of work orders were more problematic than others.** Not all work orders are created equal in terms of the timeliness of their response. The table below presents a sample of the largest volume of work orders (>3% of all work orders) by type for the period from January 1, 2010 through December 7, 2010.

Type of Work Order	Number of Work Orders	% of Total Work Orders	Did the Work Order Require Ordering Parts?	
			Parts Ordered	No Parts Ordered
Visual FoxPro Apps	152	11.2%	2	23
Lighting - Standard Fixtures	194	14.2%	2	5
Appliances-Supplies and Hardware	60	4.4%	0	9
Access Control Systems	53	3.9%	50	2
Drains and Wastewater	62	4.6%	0	48
Door, Window and Casings	55	4.0%	1	10
Air Venting and Circulation	56	4.1%	0	15
Modular Furniture	51	3.7%	0	6
Mechanical Lock	65	4.8%	24	3
TOTAL	748	54.9%		

The work orders comprise a wide variety of work ranging from Visual FoxPro Applications to Lighting – Standard Fixtures. In some cases, the work orders requiring parts were completed more quickly than work orders that did not require parts i.e., Visual FoxPro Apps, Lighting-Standard Fixtures, etc. The type of work order that required the longest response time was Access Control System when parts were ordered. Some types of work orders were completed the same day as the work order request was received i.e., Appliance – Supplies and Hardware, Air venting and Circulation, Modular Furniture, when parts were ordered.

An eleven (11) day response time to work order requests, when no parts were ordered, is problematic: it is too long. At this point, however, it is difficult to determine whether this response time presents a serious life-safety problem.

To develop a better sense of the extent of this problem, the Division should assign a priority to each work order and document and report the response time by priority (as well as by type of work order, department, building, etc.). The *Association of Physical Plant Administrators* recommends the use of priorities. “Another important

element of the work order system is the ability and flexibility to *categorize* work. Different categories of work will be accomplished in different ways by an organization and by different components of the organization. Because an organization responds differently to various types of work, it is easier to identify and track progress through a simple means of categorization.”⁶⁰

A possible priority system could range from priority 1 to 5, and represent an assessment made by the Facilities Maintenance Supervisor of the need for immediate attention by the Division. The possible priority coding system is presented below.

- **Priority 5** – These work orders represent secondary work or fill-in work. Response time by the assigned technician is not to exceed five (5) workdays for beginning the work with work to be completed two (2) days. Examples of this work include general lighting calls, carpentry and routine maintenance, discretionary work, job estimates and technician-generated work orders.
- **Priority 4** – These work orders represent the primary work performed by the Division and this should be the default priority. Response time by the assigned technician is not to exceed three (3) workdays for beginning the work with work to be completed two (2) days. Examples of this work include re-lamping in general circulation areas, general maintenance calls, preventive maintenance, and unique work requests.
- **Priority 3** – These work orders represents expedited work. Response time by the assigned technician is not to exceed one (1) workday for beginning the work with work to be completed two (2) days. Example of work include hot/cold air calls in limited areas, plugged toilets, minor water leaks, limited power failures, etc.
- **Priority 2** – These represent urgent work. The response time by the assigned technician is not to exceed two (2) hours during regular working hours. Examples of thus work include main sewer stoppage, heating / AC system failure, building equipment failure, major power failure, security breach, building safety hazards.
- **Priority 1** – These represent emergency work. The response time by the assigned technician is not to exceed one (1) hour. Examples of this work include power outages that could be life threatening, bomb threats, natural gas leaks,

⁶⁰ Association of Physical Plant Administrators, Facilities Management: A Manual for Plant Administration, 1997.

water main breaks, major power outages, building or equipment fire, etc. Local law enforcement agencies and/or fire department(s) should be contacted immediately upon receiving the call and prior to the contacting the on-call technician.

This priority system should be installed in fiscal year 2011-12, and the results of response time to work orders reported to the Public Works Director at the conclusion of that fiscal year.

Recommendation #123: The Facilities Maintenance Division should develop and install a methodology for prioritizing work orders, and report the response time by priority (as well as by type of work order, department, building, etc.).

(10) The Facility Maintenance Division Should Develop and Adopt Service Level Agreements with Its Major Customers, and Enhance Its Existing Service Level Agreements.

What are service level agreements?

Service level agreements are, essentially, business contracts with Facility Maintenance Division customers that formalize the extent of services the Division will provide. By formally documenting the Division's basic service levels and using that information with its customers, the Division creates a prospect to enhance customer service. These documents form a type of obligation for both the Division and the customer, much like service contracts do within private industry.

Why develop service level agreements with the major customers for the services delivered by the Division?

Documented service level agreements play an important role in managing both the Division's performance and the customer's expectations. When service level agreement documentation is shared throughout the staff of the Division, the Division is then able to link expectations to employee job performance. In addition, other benefits include:

- Defining basic levels of services to designated buildings or departments;
- Document basic customer expectations;
- Provide clear service level expectations and priorities based upon existing staffing;
- Establish basic and extended pricing for extra work not included in the service level agreement (what the customer would have to fund);
- Provide tracking of work performance through inspections, measurements and agreed upon reports or graphics;
- Establish mechanisms or recurring communications opportunities between the Division and its customers.

The Division has developed service level agreements with, for example, the Police Department and the Fire Department. These agreements should be enhanced.

The newly developed and enhanced service level agreements should include the elements noted below.

- An overview and purpose statement for the service level agreement including the principles of the services and service levels provided by the Division to its customers i.e., all services that we provide will be of the highest quality available in the facility maintenance and repair industry, we will understand our customers' needs and will meet these needs effectively, responsively and courteously, etc.
- A delineation of the services provided by the Division.
- The scope of services to be provided by the Division as part of the agreement. For example:

PM Focus. A comprehensive PM program is the cornerstone of effective facility maintenance. The objective of a PM program is to minimize facility equipment failure by maintaining a constant awareness of the condition of equipment and correcting defects before they become serious problems. A PM program minimizes unscheduled repairs by causing most maintenance and repair activities to occur through scheduled inspections. An effective PM program pays dividends not only in improved facility equipment safety and reliability, but also financially by extending the life of equipment, minimizing the high cost of breakdowns, and reducing lost employee productivity resulting from facility

equipment downtime. The Facilities Maintenance Division will focus efforts on behalf of Integrated Waste Management on PM activities as described below.

- The services that are not part of the agreement i.e., facility remodeling, furniture moving and assembly, etc.
- The Facilities Maintenance Division roles and responsibilities in providing the services i.e., The Facilities Maintenance Division will achieve a PM compliance rate of 100% for Fire Department facilities. That is, 100% of scheduled services will be completed before they are overdue.
- The customers roles and responsibilities i.e., customers are responsible for premature replacement of building equipment as a result of abuse, vandalism or misuse that they could reasonably predict or control.
- How work order requests will be submitted by customers i.e., to better serve all Division customers, all non-emergency work order requests must be submitted through the EnerGov internet module. This will allow anyone to view and track work requests for their building, provide automatic notifications back to the requestor, provide key information on their building, and allow maintenance performance to be better measured. The following information will be required when entering a work request thru EnerGov: employee name, employee phone number, e-mail address, and a detailed description of the problem.
- The levels of service to be delivered by the Division in the maintenance and repair of facilities.
- The prioritization of responses to work order requests i.e., priority 1 (or the top priority) shall be a system failure or safety hazard that effects a portion of a building with a potential of shutting down an employee setting, and the Division will provide an immediate response to the work order request and work to resolve the problem until corrected.
- Performance management, monitoring and reporting to the customer i.e., performance measures will be established, measured and reviewed for continuous improvement of facility maintenance services. These performance indicators will focus on response, work order backlog, completed versus open work, and completed work orders by facility. The key performance indicators shall be mutually agreed upon between the Division and its customers.
- Agreement review intervals. Maintenance performance will be assessed and reviewed on a quarterly basis by the supervisor for the Division and the customers management team.
- The contacts for the Division and the customer.

- Dispute resolution processes.

A service level agreement is intended to provide an ongoing formal framework for the relationship between the customer and the Division. It should be based on recognition of the mutual responsibility of both parties to contribute to the broad strategies and improved performance objectives of the City and its facilities.

Recommendation #124: The Facilities Maintenance Supervisor should develop new service level agreements with the Facilities Maintenance Divisions major customers such as the Utilities Department and Parks and Recreation Department, etc., and enhance the existing service level agreements with the Police Department and Fire Department.

(11) There Are No Opportunities for Cost Reductions Within the Facility Maintenance Division Without Reductions In the Level of Service and There Are Not Any Observable Redundancies in Service Delivery.

The City has been in a cost reduction mode for six of the past eight fiscal years. The Facility Maintenance Division has not been exempt from these reductions. There are no observable opportunities to reduce costs within the Division without reducing levels of service. There are no observed redundancies in the Division. That is the Division is not consistently delivering services that are also delivered by other Divisions in the Public Works Department.

(12) The Facility Maintenance Division Utilizes Appropriate Equipment and Technology.

The Division is appropriately equipped to conduct its work. It utilizes the same type of equipment that other cities utilize, and that enable its efficient delivery of services.

(13) The Cost Allocation Plan Should Be Modified, and the Costs Incurred by the Facility Maintenance Division in the Maintenance and Repair of Parking Structures Should be Charged to the Parking Enterprise Fund.

The Facility Maintenance Division provides labor and materials in the maintenance and repair of the City's parking structures. The table below presents the amount of hours that the Division allocated to the maintenance and repair of parking structures.⁶¹

Parking Structure	Labor Hours Charged to Work Orders
919 Palm Parking Structure	36.0
842 Palm Parking Structure	35.8
836 Pacific Parking Structure	133.1
Sub-Total	204.8
Total All Work Orders	3509.5

Important points to note regarding the table are presented below.

- The labor hours charged to the parking structures represent the time period from January 1, 2010 to December 7, 2010.
- All of the Building Maintenance Technicians and the Building Maintenance Workers in the Division charged a total of 3,509.5 labor hours to work orders. As noted previously, this does not capture a complete representation of all of the work performed by these staff. This excludes the labor hours charged to parking structure offices and rental suites for maintenance and repair.
- The labor hours charged to parking structures represent 5.8% of the total labor hours charged to work orders by the Division during this time period.
- The costs incurred by the Facilities Maintenance Division in the maintenance and repair of parking structure offices and rental suites is included in the cost allocation plan, but not parking structures.

The costs incurred by the Facilities Maintenance Division in the maintenance and repair of parking structures should be included in the cost allocation plan. Approximately \$31,000 in costs for facility maintenance and repair costs should be

⁶¹ This data was provided by the Public Works Department to the consulting team on December 7, 2010.

included in the cost allocation plan for parking structures. This excludes the cost of utilities that are paid directly by Parking Services.

Recommendation	Annual Revenue Increase
The costs incurred by the Facilities Maintenance Division in the maintenance and repair of parking structures should be included in the cost allocation plan.	\$31,000

Recommendation #125: The costs incurred by the Facilities Maintenance Division in the maintenance and repair of parking structures should be included in the cost allocation plan.

8. STREET MAINTENANCE DIVISION

This chapter presents an analysis of Street Maintenance including the following:

- The balance of work performed by the Division between insourcing and outsourcing;
- The manner in which street sweeping is funded;
- The planning and scheduling of work performed by the Division; and
- The asset management practices of the Division.

The chapter opens with a description of the Street Maintenance Division.

1. THE STREET MAINTENANCE DIVISION IS AUTHORIZED THIRTEEN FULL-TIME STAFF AND A HALF-TIME TEMPORARY WORKER.

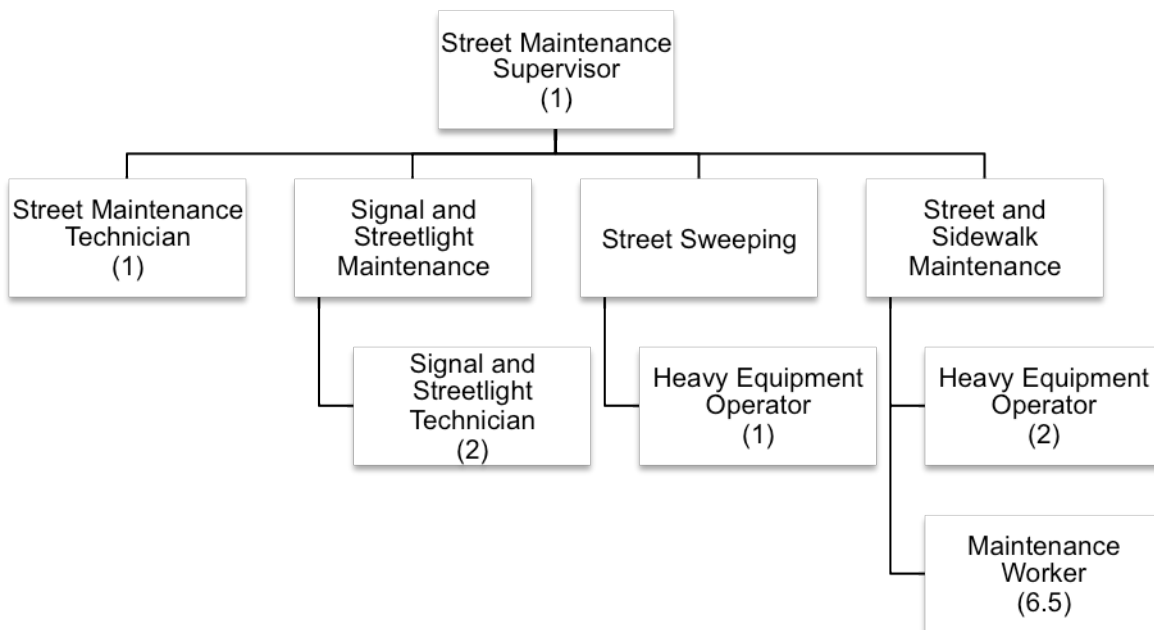
The Street Maintenance Division is responsible for the maintenance streets and their related assets such as signs, signals, streetlights, etc. This maintenance responsibility encompasses a number of assets within the City right-of-way ranging from traffic signals, streetlights, pavement, curbs, gutters, and sidewalks, etc. The services delivered by the Street Maintenance Division are presented below as noted below

- **Pavement maintenance** including maintaining serviceable street pavements and reconstructing failed sections; evaluating pavement condition in areas scheduled for maintenance and recommending locations for reconstruction, resurfacing, and resealing; paving existing streets to meet newly installed curbs and gutters; installing asphalt berms in lieu of curbs; patching potholes and crack sealing city streets.
- **General street maintenance** including constructing new concrete curbs, gutters, and sidewalks; repairing concrete curbs, gutters, and sidewalks; pruning street tree roots; repairing and maintaining street furnishings; installing and repairing dead-end barriers, survey monument wells, bus shelters, bus benches, and bike racks; repairing and replacing damaged guard railing and bridge railing; systematically surveying and documenting sidewalk condition in the annual maintenance areas and scheduling needed repairs; surveying sidewalks

and scheduling repairs in the downtown area once annually; removing graffiti from City property.

- **Pavement marking maintenance** including installing and maintaining pavement markings, curb markings, and signs; repainting stop bars, and parking tees; periodically replacing thermoplastic school crosswalks; maintaining pavement markings in City parking lots; re-striping City streets.
- **Street sign maintenance** including fabricating and installing standard traffic control signs; fabricating and installing special signs; installing disabled access signs as required by state codes.
- **Solid waste disposal** including collecting and disposing of waste collected from all Public Works and Utilities maintenance activities; recycling excavated asphalt and concrete.
- **Traffic signal operations and maintenance** including maintaining and repairing City traffic signals; operating the QuicNet Traffic management system and installing video detection systems.
- **Streetlight operations and maintenance** including maintaining and repairing City streetlights; coordinating the installation of streetlights according to adopted standards and implementing remote monitoring systems.
- **Storm drain and creek maintenance** including clearing and maintaining creeks and storm drainage facilities; working with contract labor crews and Natural Resources Division staff on large scale creek cleaning projects.
- **Street sweeping** including sweeping and disposing of dirt and debris.

A total of thirteen (13) full-time positions and one-half (0.5) full-time equivalent temporary positions are authorized for street maintenance, flood control, and downtown Farmer's market setup, and downtown trash removal, graffiti control, sidewalk sweeping, bench repair cleaning, and other beautification efforts. In addition, a total of \$132,294 is authorized for contract maintenance services: \$71,239 in street and sidewalk Maintenance, \$61,055 for signal and light maintenance.



The total FY 2010-11 budget for the Street Maintenance Division in San Luis Obispo is presented in the table below. This includes street and sidewalk maintenance and signal and streetlight maintenance, but excludes creek and flood protection since that program includes staff and services outside of the Street Maintenance Division.

Budget Category	Budget \$	% of Total
Street and Sidewalk Maintenance		
Staffing	\$884,700	71%
Contract Services	\$71,239	6%
Other Operating Expenditures	\$282,763	23%
Minor Capital	\$-	0%
Sub-Total	\$1,238,702	100%
Signal and Light Maintenance		
Staffing	\$207,603	42%
Contract Services	\$61,055	12%
Other Operating Expenditures	\$226,390	46%
Minor Capital	\$-	0%
Sub-Total	\$495,048	100%
Total Street, Sidewalk, Signal and Light Maintenance		
Staffing	\$1,092,303	63%
Contract Services	\$132,294	8%
Other Operating Expenditures	\$509,153	29%
Minor Capital	\$0	0%
TOTAL	\$1,733,750	100%

The total 2010-11 budget for street and sidewalk maintenance and signal and streetlight maintenance amounts to \$1,733,750. This excludes those aspects of the

Street Maintenance Division budget that are included in the Creek and Flood Protection Program **since that program includes staff and services not included in the Street Maintenance Division.**

2. THERE ARE A NUMBER OF POSITIVE CHARACTERISTICS IN THE DELIVERY OF STREET MAINTENANCE SERVICES.

The diagnostic appraisal of the Public Works Department identified a number of positive characteristics in the delivery of street maintenance services. Examples of these characteristics are presented below.

- Streets are crack sealed downtown annually. Other streets are on an eight-year zone-based maintenance program in which all maintenance services are then performed.
- Streets are on an eight-year zone-based maintenance program in which all maintenance services are then performed. Deep patching will occur, as necessary, if structural failures are noted outside of the zone.
- The sidewalk maintenance crew uses a sidewalk grinder to address small displacements.
- A parking ban has been adopted to aid street sweeping in the downtown area.
- The streetlights are owned and maintained by the City (and not owned and maintained by private electrical utilities).
- The Street Maintenance Division complies with a number of the best practices contained in the American Public Works Association Public Works Management Practices Manual. These include, for example, “a preventive maintenance program for the street and highway system is established”, “responsibility for operations and maintenance of streets and related facilities is established,” etc.⁶²

These are examples of the positive characteristics in the delivery of street maintenance services.

⁶² American Public Works Association, Public Works Management Practices Manual, 2004.

3. ANALYSIS OF ORGANIZATIONAL STRUCTURE

The fundamental questions in evaluating organizational structure are the efficiency of the plan of organization, the responsibility and accountability of managers and supervisors. The intent is to ensure the following:

- **The organizational structure fosters accountability.** The organizational structure fosters accountability among management and supervisory staff.
- **The plan of organization enhances communication and coordination.** The number of handoffs/exchanges required among staff providing service to the public or internal clients is minimized.
- **Management and supervisory resources are utilized efficiently.** The plan of organization minimizes administrative overhead.
- **The span of control for any manager or supervisor is not more or less than 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.

These principles were utilized in evaluating the organizational structure of the Street Maintenance Division.

(1) The Span of Control for the Street Maintenance Supervisor Meets Metrics.

Why should an organization be concerned about managerial layers and spans of control?

The City of San Luis Obispo has been challenged fiscally over the past several years to provide a responsive government at a lower cost. As noted in the General Fund Five-Year Fiscal Forecast presented to the Council in October 2010, the City is facing a long-term structural budget gap between revenues and expenditures for the foreseeable future unless corrective action is taken. One of the most effective ways to meet these challenges is to streamline organizational structure through increased

spans of control.

At the present time, the Street Maintenance Supervisor supervises twelve (12) full-time staff and one (1) part-time staff. The duties of the Street Maintenance Supervisor, reflected in the profile of the Department that was reviewed and corrected by the Department, are noted below.

- The Streets Maintenance Supervisor, reporting directly to the City Engineer (Deputy Director), is responsible for providing oversight to include planning, budgeting, operational and fiscal management, staff supervision and programmatic management over various street-related programs.
- Duties and responsibilities include management of street sweeping programs; street preventive and rehabilitative maintenance programs; traffic signal, street light and signage programs; and sidewalk, curb and gutter maintenance programs.
- Most programs are accomplished within each of nine “maintenance zones” within the City through in-house resources, although contracts such as line / legend painting are managed by the Streets Maintenance Supervisor or Streets Maintenance Technician.

Management literature identifies various factors that cause span of control to differ among supervisors and in different organizations. For example, narrower spans of control are appropriate when the nature of work performed is complex, when organizational objectives are unclear, when tasks are uncertain, or risks are high. The chart, below, presents some of the factors that should be considered in evaluating spans of control.

Factor	Narrower Span of Control	Wider Span of Control
Nature of Work	Complex	Not Complex
Similarity of activities performed	Different	Similar
Clarity of organizational objectives	Not Clear	Clear
Degree of task certainty	Fuzzy	Definite Rules
Degree of risk in the work for the organization	High	Low
Degree of public scrutiny	High	Low
Supervisor's qualifications and experience	Weak	Strong
Burden of non-supervisory duties	Heavy	Light

Factor	Narrower Span of Control	Wider Span of Control
Degree of coordination required	High	Low
Availability of staff assistance	None	Abundant
Qualifications and experience of subordinates	Weak	Strong
Geographic location of subordinates	Dispersed	Together

There are a number of factors in the Streets Maintenance Division that argue for a wide and for a narrow span of control for the Streets Maintenance Supervisor as noted below.

- **Wide span of control.** Those factors that suggest a wider span of control is possible include:
 - The nature of the work performed by the staff of the Division is less complex than other aspects of the Public Works Department i.e., Engineering Capital Project Design,
 - The activities performed are similar,
 - The organizational objectives are clear,
 - There are definite rules for the tasks performed by the staff of the Division,
 - The qualifications and experience of the Street Maintenance staff are strong,
 - The degree of coordination required is low.
- **Narrow span of control.** On the other hand, there are factors that suggest the narrow span of control should be continued. These include the risk of the work for the organization, the degree of public scrutiny, the staff perform their work at diverse locations, and the lack of staff assistance for the Division.

A tall, narrow span of control is thought to create slower decisions and sometimes hamper an organization's ability to compete. Narrow spans of control may be most appropriate in highly technical or specialized areas that require close supervision.

A wider, flatter configuration means fewer layers of reporting and more subordinates reporting to a supervisor. Wider and flatter organizations tend to have faster decision-making, and improved communication, motivation and morale. Spans of

control that are too wide can also create problems such as inconsistent performance and inadequate supervision.

The Matrix Consulting Group utilizes span of control guidelines to shape the discussion and development of recommendations regarding spans of control and management / supervisory layers. These guidelines were developed based upon the research and analysis conducted by a number of other cities and counties that were evaluating the number of management layers and the spans of control in their organizations. These include such cities and counties as Portland, Oregon; King County, Washington; Seattle, Washington; Kansas City, Missouri; etc.

These guidelines recognize situational differences in terms of departmental size, task complexity, etc. The guidelines, for a department such as the Public Works Department with 50 to 150 employees, suggest that not more than four layers of managers and supervisors are appropriate, and that the span of control for the ratio of first-line supervisors to non-supervisors assigned to maintenance should not be lower than 1 to 10 or higher than 1 to 20.⁶³

As these guidelines apply to the Street Maintenance Division, there are three (3) management and supervisory layers: The Public Works Director, the Deputy Director (City Engineer), and the Street Maintenance Supervisor. This falls within the guidelines.

The span of control for the Street Maintenance Supervisor is twelve (12) full-time staff and one (1) part-time staff, which falls within the guideline of not less than 1 to 10 or higher than 1 to 20.

⁶³ *City of Portland Span of Control Study*, prepared for the City of Portland Audit Services Division by Public Knowledge, Inc. and The Kemp Consulting Group, 1994.

The plan of organization for the Street Maintenance Division should not be modified.

Recommendation #126: The plan of organization for the Street Maintenance Division should not be modified.

4. ANALYSIS OF STAFFING

This section provides an analysis of the workload and staffing levels of the Street Maintenance Division including the potential of alternative service delivery, if any.

(1) The Number Of Authorized Signal And Street Lighting Technicians Is Sufficient To Meet Current And Anticipated Workload.

The Street Maintenance Division is authorized two (2) Signal and Street Lighting Technicians. These two (2) Signal and Street Lighting Technicians are responsible for the maintenance and repair of approximately sixty (60) signalized intersections and approximately 2,300 streetlights. With the assumption of responsibility for Highway 227, an additional eight (8) signalized intersections will be added to this inventory.

A number of benchmarks are utilized in analyzing the staffing requirements for signal and street lighting. These benchmarks, and important points to note regarding these benchmarks, are provided below.

- **The benchmark for traffic signals was developed by the National Transportation Operations Coalition (NTOC).**⁶⁴ The Coalition's mission is to improve management and operation of the nation's existing transportation system so that its performance will exceed customer expectations. The Coalition is a national resource to practitioners, coalition members and the general public on continuously improving performance-based service delivery of transportation system management and operations and its supporting technologies. The Coalition represented a team of professionals including:
 - American Association of State Highway and Transportation Officials;
 - American Public Works Association;

⁶⁴ National Transportation Operations Coalition, Traffic Signal Operation Self-Assessment, 2007.

- Institute of Transportation Engineers;
- Intelligent Transportation Society of America; and
- Federal Highway Administration.

To develop these benchmarks, the Coalition conducted a comparative survey of 378 public sector organizations using a self-assessment instrument developed by the Coalition. The 2007 traffic signal operation self-assessment was part of the 2nd *National Traffic Signal Report Card*, a national effort to bring more attention to the need for additional investment in traffic signal operations. The first *National Traffic Signal Report Card* was released in 2005. The 2007 traffic signal operation self-assessment was updated to reflect comments received following the original self-assessment and to provide a new section on timing practices. In fact, the Federal Highway Administration noted “given that there is no nationally accepted standard of performance, the performance requirements should be generally consistent with those identified by the NTOC Traffic Signal Report Card, as it our best current synthesis of what constitutes good practice.”⁶⁵ However, that study also concluded “a staffing level of 30-40 signals per technician for agencies that operate a minimum of 150 signals will be appropriate to support the Constrained Ideal Traffic System. Smaller agencies will likely require fewer signals per technician because economies of scale may be difficult to realize.”

- **Thirty (30) to (40) signalized intersections per signal technician.** 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. This section is intended to assess the effectiveness of the planning, management and execution of maintenance activities. A very 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.⁶⁶
- **6,500 street lights per signal technician.** The Matrix Consulting Group utilizes a benchmark of 6,500 streetlights per signal technician. Professional associations, such as the *California City – County Street Light Association*, have not developed staffing guidelines for the maintenance of streetlights.

⁶⁵ Federal Highway Administration, Traffic Signal Staffing and Operations Guidelines, 2009.

⁶⁶ ⁶⁶ National Transportation Operations Coalition, Traffic Signal Operation Self-Assessment, 2007.

Overall, the Street Maintenance Division has sufficient number of authorized staff to maintain the existing number of signals and streetlights, and those that will be added through the addition of Highway 227.⁶⁷

Recommendation #127: The Public Works Department should maintain the existing number of staff for signal and street lighting maintenance: two (2) Signal and Street Lighting Technicians.

(2) The Allocation Of One Heavy Equipment Operator For Street Sweeping Is Sufficient To Maintain Existing Levels Of Service.

The total curb miles swept in the City 2010 was estimated at 6,800 curb miles (although the performance indicators reported by the Public Works Department indicated that 4,890 curb miles were swept).

This data was not defined by type of street or by service level. The Street Maintenance Supervisor should develop an annual work program for street sweeping. An example of this annual work program is presented below.

Activity Name	Inventory Measure	Units	Level of Service	Annual Freq.	AWQ	ADP	Crew Days	Crew Size	Staff Days
Commercial Street Sweeping	Curb Miles	21	Curb Miles	248	5,208	30	174	1	173.60
Residential Street Sweeping	Curb Miles	89	Curb Miles	12	1,068	30	36	1	35.60
Arterial Street Sweeping	Curb Miles	18	Curb Miles	24	432	30	14	1	14.40
TOTAL									223.60

If the number of curb miles swept is accurately reported at 6,800 curb miles annually, then the Heavy Equipment Operator is at 92% to 106% capacity. The Heavy Equipment Operator should be capable of sweeping 28 to 32 curb miles per 8-hour workday in a community the size of San Luis Obispo.

⁶⁷ However, the Section has had one of the two signal technicians out on disability for an extended period of time and this has impacted their ability to preventively maintain traffic signals.

However, the Public Works Director should direct staff to resolve the significant discrepancy between the curb miles reported swept in the Department's performance indicators and the curb miles reported swept by the Street Maintenance Division.

In addition, the Heavy Equipment Operator should complete on a daily work order the street sweeping activities performed including work hours spent sweeping, the curb miles swept, and the tons of material collected. This reporting should begin immediately, and not wait for the deployment of EnerGov.

Recommendation #128: The City should maintain the current level of staffing for street sweeping at one (1) Heavy Equipment Operator.

Recommendation #129: The Public Works Director should direct staff, as appropriate, to resolve the significant discrepancy between the curb miles reported swept in the Department's performance indicators and the curb miles reported as swept by the Street Maintenance Division.

Recommendation #130: The Heavy Equipment Operator should complete a work order for the street sweeping activities that he performed that reports the work hours spent sweeping, the curb miles swept, and the tons of material collected. This reporting should begin immediately, and not wait for the deployment of EnerGov.

(3) It Was Not Possible To Accurately Evaluate the Staffing Requirements for Sidewalk Removal and Replacement Crews Given the Work Output Indicator.

The duties of the concrete crew, reflected in the profile of the Department that was reviewed and corrected by the Department, indicated that three (3) staff are allocated to a concrete crew that perform sidewalk grinding, ramping, and reconstruction and replacement in the respective zones.

The work hours allocated by concrete work activity are noted in the table below. This is based upon data provided by the Public Works Department on December 7,

2010.⁶⁸ The staff hours amount to 5,241 or 34% of all of the staff hours charged to work orders by the staff of the Street Maintenance Division.

Work Activity	Staff Hours	%
Patching Sidewalk	29.8	0.6%
Sidewalk Curb and Gutter	48.9	0.9%
Patching Curbs	6.0	0.1%
Remove and Replace Curb, Gutter, and Sidewalk	2,386.0	45.5%
Remove and Replace Sidewalk	2,598.0	49.6%
Remove and Replace Curb and Gutter	144.5	2.8%
Sidewalk Displacement / Hazard	28.0	0.5%
TOTAL	5,241.2	100.0%

As noted in the table, two work activities comprise 95% of the total labor hours for this twelve-month period: remove and replace curb, gutter, and sidewalk and remove and replace sidewalk. Overall, the work output of the concrete crew was noted as 3,613 linear feet. This is an unusual work output indicator. In most instances, a concrete crew notes their work output as square feet or square yards.

However, using the 6-foot minimum standard width of sidewalks in San Luis Obispo for integral sidewalks and allowing for a 32" gutter – as described in the curb and gutter standard specification developed by the City of San Luis Obispo, the concrete crew could have removed and replaced approximately 28,900 square feet of concrete during this twelve month period.⁶⁹ (Note: this is an approximation that the consulting team is forced to make due to the problematic work output indicator: linear feet).

The Matrix Consulting Group uses a performance standard of 5 to 7 square feet / day as an average daily production for sidewalk replacement. The work activity

⁶⁸ Street Maintenance Division – Statistics for work completed between 12/01/09 and 12/07/10

⁶⁹ San Luis Obispo standard specification 4110 for sidewalk, integral and detached, and standard specification 4030 for curb and gutter.

description for this standard is “removal and replacement of damaged sidewalk to eliminate hazards and to restore sidewalk structure to original condition.” The scheduling guidelines for this performance standard state “perform throughout the year in line with ‘hot spot’ replacement program and list of repair priorities. Organize and schedule work so that crew works full day on one of the operations (removal, replacement, or cleanup). Try to combine all pours for economic order quantity of ready-mix.”

Using this standard, the crew would have required approximately 4,100 staff hours to 5,800 hours to complete this removal and replacement of concrete. This is 83% to 116% of the actual hours taken by this crew.

Given the limitations with the work output indicator (linear feet), it is difficult for the consulting team to accurately depict the productivity of the concrete crew beyond this analysis. The work output indicator should be changed to square feet, and the analysis of productivity and staffing requirements should be repeated in the following twelve months.

Recommendation #131: The work output indicator for the concrete crew should be changed to square feet of concrete from linear feet.

(4) It Was Not Possible to Accurately Evaluate the Staffing Requirements for Asphalt Maintenance Given the Work Activities Utilized.

The duties of the asphalt crew, reflected in the profile of the Department that was reviewed and corrected by the Department, indicated that typically five (5) staff to a paving crew. The staff typically operate in one of nine zones annually, providing pavement crack sealing, patching, and the variety of preventive and rehabilitative

maintenance services including skin patch, micro-surfacing and full-depth reconstruction.

The work hours allocated by concrete work activity are noted in the table below. This is based upon data provided by the Public Works Department on December 7, 2010.⁷⁰ The staff hours amount to 7,190 or 47% of all of the staff hours charged to work orders by the staff of the Street Maintenance Division.

Work Activity	Staff Hours	% of Total
Cold Plane	3.0	0.04%
Patching	349.5	4.86%
Paving New	5,928.0	82.45%
Pothole	130.8	1.82%
Crack Sealing	778.8	10.83%
TOTAL	7,190.0	100.00%

Only one work output indicator is generated for the asphalt maintenance crew: tonnage of asphalt. This indicator is utilized for patching, paving new, and pothole patching. The work output indicator is not generated specifically for each of these three work activities. Yet the crew sizes and amount of staff hours per unit of work (tons of asphalt) is different for each work activity. In addition, a work output indicator is not generated for crack sealing except on a day-by-day basis, not the annual summary. This makes it difficult to accurately assess the staffing requirements for asphalt maintenance. In addition, the work activity – paving new – encompasses a range of different activities including skin patch, micro-surfacing and full-depth reconstruction. Each of these different activities - skin patch, micro-surfacing and full-depth reconstruction – will require different equipment and have different amounts of staff hours per unit of work (tons of asphalt).

⁷⁰ Street Maintenance Division – Statistics for work completed between 12/01/09 and 12/07/10

Given the data available, it is not possible for the consulting team to accurately evaluate the staffing requirements for asphalt maintenance.

The Street Maintenance Division should capture work output for each work activity in its summary work output reports (i.e., Street Maintenance Division: statistics for work completed between 12/01/09 and 12/07/10). In addition, the work activity – new paving – should be segregated into multiple work activities i.e., skin patch, micro-surfacing and full-depth reconstruction. Once these refinements are made, the analysis of productivity and staffing requirements should be repeated in the following twelve months.

Recommendation #132: The Street Maintenance Division should capture work output for each asphalt maintenance work activity in its summary work output reports.

Recommendation #133: The work activity – new paving – should be segregated into multiple work activities i.e., skin patch, micro-surfacing and full-depth reconstruction.

(5) The Public Works Department Should Utilize Managed Competition To Determine Whether It Should Outsource Some or All Street Maintenance Services Or Continue to Insource Some or All These Services.

Managed competition is a structured, transparent process that allows public sector employees to be openly and fairly compared with independent service providers (normally private sector firms) for the right to deliver services. This strategy recognizes the high quality and potential of public sector employees, and seeks to tap their creativity, experience and resourcefulness by giving them the opportunity to structure organizations and processes in ways similar to best practices in competitive businesses, yet still compatible with public sector realities.

The *Government Finance Officers Association* recommends that governments systematically identify and evaluate the major factors in considering a managed competition option.⁷¹ Service level, cost, efficiency, effectiveness, quality, customer service, and the ability to monitor the service provider's work should be essential components of any managed competition decision. In addition, governments should clearly define the service parameters in the expected service delivery.

Why consider managed competition? There are a number of pragmatic reasons for cities to consider managed competition. First and foremost, competition is a way to lower costs, an important consideration for cities facing difficult financial times such as San Luis Obispo. Managers of the city can also use competition to improve the quality of service provided.

Another reason to consider managed competition for street maintenance is that the Division tends to deliver more services with in-house staff than other cities as noted in the table below.

City	Population in 2010	Sidewalk, Curb, & Gutter Replacement	Traffic Signals & Street Lights Maintenance	Street Sweeping
San Luis Obispo	44,179	In-House	In-House	In-House
Cupertino	50,602	Contract	In-house	Contract
Dublin	30,023	Contract	Contract	Contract
Ranchos Palo Verde	41,145	Contract	Contract	Contract
Cypress	46,549	In-house	Contract	In-house
Davis	60,308	In-house	In-house	Contract
San Ramon	44,722	Minor repairs in house, major contracted out	Contract only major projects, or after hours.	Contract
Cerritos	51,488	Minor repairs in house, major contracted out	Contract	Contract

These other cities tend to rely on contractors more than San Luis Obispo to deliver street sweeping, and sidewalk, curb and gutter replacement (San Ramon and Cerritos

⁷¹ Government Finance Officers Association, *Managed Competition as a Service Delivery Option*, 2006.

only performing minor concrete repair in-house and outsourcing major repairs, and Cupertino, Dublin, and Rancho Palos Verde outsourcing concrete repairs and replacement). There is a 50 / 50 split in the cities that outsource traffic signal and streetlight maintenance, while four other cities provide these services with in-house staff).

A study of the use of managed competition found a number of examples for street and highway maintenance.⁷² Examples are presented below.

- The Commonwealth of Massachusetts gradually implemented systems of managed competition for road maintenance. It expanded the managed competition program in 1993 to maintenance districts four and five, which encompass all of eastern Massachusetts. The state awarded seven contracts for this area; private sector companies won four and the state employees won three. Massachusetts saved \$7.8 million with these contracts, seeing service levels rise by an additional \$10.2 million. Finally, in 1996, MassHighway expanded this program across the rest of the Commonwealth with similar positive results. The State retained an independent accounting firm, Coopers & Lybrand, to perform an audit that confirmed that significant cost savings did, in fact, occur from the initial managed competition contract. As a result of the success of the project, Boston's Pioneer Institute awarded MassHighway its Better Government Award for Innovations in State Government.
- The City of Indianapolis decided in 1992 to make street repair one of its administration's first laboratories of competition and assigned the Director of Transportation to put together a pilot project competitively bidding a 10-block section of streets in northeast Indianapolis. At the outset the Director of Transportation sought to determine how much it cost the city to fill its potholes, but was unable to get a straight answer to this simple question. The city hired the accounting firm of KPMG Peat Marwick to implement activity-based costing (ABC) for Indianapolis' government. Activity-based costing is an accounting system that measures every cost of providing a government service. The City then initiated managed competition for street maintenance. The managed competition process resulted in an award to the City employees after the number of staff and trucks assigned to each job were reduced and the number of supervisors and managers were reduced as well. City employees won the initial contract by reducing the projected cost of pouring a ton of asphalt by 25 percent. They also increased their productivity by 68 percent. Since the competitive policy began, city workers have won about 80 percent of all bids for

⁷² Washington Policy Center, Competing for Highway Maintenance: Lessons for Washington State

street maintenance.

- Charlotte, North Carolina has utilized managed competition for street maintenance for the past decade. In the City, as a whole, 38 competitions have been held, with City organizations winning 28 and the private sector ten. A total of \$4.4 million in savings has been identified from competition and privatization, and 108 positions have been eliminated.

As these examples indicate, managed competition is not a new concept.

Other cities are broaching the issue of managed competition. San Diego announced in January 2011 that city's street sweeping, street and sidewalk maintenance and public utilities are the next to go out to bid. The City has already conducted business process re-engineering of these services to find ways of streamlining and saving money. San Diego indicated that city employees who currently perform these jobs are allowed to make bids and that the city was sure that, in many instances, city employees would win the bids. Guidelines used by the city state that, in order for the city to use a private contractor, they have to prove they will do the same work for at least 10% less.

The first step in the managed competition process is completing a pre-competition assessment report for any function that is moving forward into competition. At this point, the function will move forward through the following five phases:

- Phase I: Competition Planning
- Phase II: Solicitation Development
- Phase III: Employee Proposal Preparation and Development
- Phase IV: Source Selection
- Phase V: Transition and Post-competition Accountability

The length of time required for each of these phases is dependent on the circumstances of, type, and size of function undergoing competition. During Phase I, the Public Works Department would document the activities performed to maintain streets and street-related assets, document service levels, identify potential bidders including assessing how to recruit bidders outside of San Luis Obispo County, document the inventory of streets and street-related assets, and document the existing costs. During Phase II, the Office of the City Manager should lead the team developing the Statement of Work (SOW) and the Request for Proposals (RFP). The Request for Proposal should then be issued to the Employee Proposal team and to the private sector. In Phase III, the Employee Proposal team should develop the employee response to the solicitation. As part of Phase IV, the Office of the City Manager and the Finance Department will oversee the evaluation of the proposals from the Employee Proposal team and the private sector. Once a winning proposal has been selected and approved, the City will transition to the winning service provider or service delivery model. At this juncture, the City will begin tracking the cost and quality of service during post-competition accountability in Phase V.

Recommendation #134: The Public Works Department should utilize managed competition to determine whether it should outsource street maintenance services or continue to insource these services.

(6) The Public Works Department Should Explore Alternative Service Delivery Options For Street Maintenance.

Alternative service delivery refers to any process that shifts some or all of the functions or responsibilities of delivering a service from the public sector to the private sector. Alternative service delivery can take many different forms as noted below.

- Asset Sale Or Transfer, whereby a government divests itself completely of an

asset, turning over ownership to a private firm, a nonprofit organization or another government.

- Contracting out management of an asset, service or function to a private or nonprofit entity. The government retains ownership of any asset involved. However, the managing entity assumes responsibility for personnel. If a government transfers responsibility for management of service provision or a function to a private entity, it is referred to as Commercialization. An example of a commercialization effort is long-term lease arrangement that the City of Chicago has negotiated with the Cintra-Macquarie Consortium for operation of the Skyway. An example of a non-profit entity managing an asset is the Lincoln Park Zoological Society operating the Lincoln Park Zoo in Chicago.
- Corporatization, in which a government function is spun off to a government corporation that functions much like a private corporation, but with a public mission. Examples of this are the United States Postal Service or the Pension Benefit Guarantee Corporation.
- Establishing internal markets, whereby departments purchase or contract for goods or services from other departments.
- Selling a franchise to a private firm, such as a utility company. This gives the firm exclusive rights to provide a service.
- Intergovernmental contracts or cooperation, which is a variation of contracting out, involves governments cooperating to jointly purchase or deliver goods or services. This option is quite common among local governments.
- Managed competition, in which government employees can competitively bid against private contractors to provide certain services.
- Vouchers, where the government pays for a good or service, but provides citizens with choices as to their preferred way of obtaining the good or service.

The potential of alternative service delivery options are limited for the Street Maintenance Division as noted below.

- The City should not divest itself of its streets. While some cities have begun to divest themselves of residential streets, this has occurred at the time of construction of a subdivision, the streets were designated as private, and the homeowners association assumed responsibility for maintenance of the streets. This has not been done retroactively, however,
- The City should not contract out management of the maintenance of its streets. The cost of management of the maintenance of streets would likely exceed the

salary and fringe benefit cost of the Street Maintenance Supervisor, particularly given the isolated geographical location of the City.

- Corporatization offers little in value. The use of managed competition for street maintenance services would likely derive all of the benefit that could be achieved through corporatization
- Establishing internal markets is not a viable option once the Division assumes responsibility for the maintenance and repair of all of the City's streets.
- Selling a franchise is not a viable option. The Division generates little revenue on its own to support a franchise.
- Intergovernmental contracts with the County and the School District should be explored. Under this arrangement, the City would establish an intergovernmental contract with the County and / or the School District to manage the maintenance of streets or parking lots. For the County, this should only apply to those roads in close proximity to the City's incorporated boundaries. This would apply to the same types of services currently provided by the Division, and not include slurry sealing or overlay. Given the County's challenges with funding of road maintenance and the amount of deferred maintenance, this option would not be a likely viable option.
- Managed competition should be explored as noted in the previous, section. This approach is being utilized in San Diego, Philadelphia, Phoenix, Indianapolis, etc. For example, as a result of managed competition, cost savings for street maintenance in Indianapolis were estimated at approximately 30%.
- The use of vouchers offers little merit. There are not any practical uses of vouchers for street maintenance.

Overall, the alternative service delivery option with the greatest potential for the Public Works Department would be intergovernmental contracts for street and parking lot maintenance with the County and with the School District.

Recommendation #135: The Public Works Department should explore street maintenance and repair intergovernmental contracts with the County and with the School District.

5. ANALYSIS OF OPERATIONS AND MANAGEMENT

This section provides the project team's analysis of the opportunities for improvement in the operations and management systems for the Street Maintenance Division.

In conducting this analysis, the project team utilized best practices found in other cities and its own experience in analyzing street maintenance practices in cities for over thirty (30) years, the best practices cities by other street maintenance consultants, and the practices of other cities with well managed street maintenance programs.

The consulting team could not rely exclusively on best practices of the *American Public Works Association*. The *American Public Works Association* have developed best practices that include standards for the material conservation, dead animal pickup, operations and maintenance inspection, etc. The *American Public Works Association* has not developed best practices for funding of street sweeping, guidelines for replacement of signal controllers, what constitutes a comprehensive preventive maintenance program for traffic signals (or even if a city should have a preventive maintenance program for traffic signals), etc.

(1) The Operating And Capital Costs Associated With Street Sweeping Should Be Funded Via The City's Solid Waste Fees.

The Street Maintenance Division dedicates a Heavy Equipment Operator to sweeping the City's streets (and supplements that with a contract street sweeper at a cost of \$500 per month). Overall, the level of service provided includes sweeping downtown streets five times a week; main arterials once to twice every two weeks, and

the remaining streets monthly. In 2010, the Heavy Equipment Operator swept approximately 6,800 curb miles.

The annual operating and depreciation costs for providing street sweeping amounts to an estimated \$240,000 including citywide overhead. These costs are presented in the table below.

Line Item Cost	Annual Cost
Depreciation	\$70,180
Fuel	\$7,253
Labor	\$80,786
Contract sweeping	\$6,000
Landfill Tipping Fees	\$13,000
Sub-Total	\$177,219
Overhead @ 35.6%	\$63,090
Total	\$240,309

This cost excludes vehicle maintenance since that cost is included in the City's cost allocation plan as an indirect cost. It also excludes the third street sweeper used for the paving program – the 2001 street sweeper (#206).

These costs should be recouped through solid waste fees, and not through the general fund. This funding approach has been used by a significant number of cities in California such as Azusa, Belmont, Duarte, Lompoc, Mountain View, Redding, Redondo Beach, Sacramento, San Gabriel, San Jose, San Marino, San Mateo, South Pasadena, Sunnyvale, Whittier, etc.

Street sweepers regularly clean neighborhood, arterial, and downtown business streets of trash, dirt, and leaves. That is the nexus to the funding of these services through the solid waste fee.

The estimated additional revenue that would be generated on behalf of the general fund is presented in the table below.

Recommendation	Annual Increase In General Fund Revenue
The operating and capital costs associated with street sweeping should be funded via the city's solid waste fees.	\$240,000

Recommendation #136: The annual operating costs of street sweeping, including depreciation, should be funded through solid waste fees.

(2) Traffic Signal Controllers Should Be Replaced On A Fifteen-Year Life Cycle.

Traffic signal controllers should be replaced at approximately fifteen (15) 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 fifteen (15) 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 Street Maintenance Supervisor should develop a replacement plan for the consideration of the Public Works Director that is based upon the inventory of signal cabinets and proposes a five-year replacement plan for signal controllers. In other words, the Supervisor should develop a five-year plan that identifies the signal controllers that should be replaced in that five-years. It should be based upon a fifteen-year life-cycle for signal controllers.

Recommendation #137: The Street Maintenance Supervisor should develop a replacement plan for the consideration of the Public Works Director that is based upon the inventory of signal cabinets and proposes a five-year replacement plan for signal controllers.

Recommendation #138: Traffic signal controllers should be replaced at approximately fifteen (15) year intervals.

(3) The Street Maintenance Division Should Restore A Comprehensive Preventive Maintenance System For Traffic Signals.

Preventative maintenance as defined by the *Traffic Control Devices Handbook* as “the systematic and scheduled inspection, cleaning, adjustment and lubrication of equipment so that it will operate at maximum capability.”⁷³

Preventive maintenance of signalized intersections should be performed on quarterly, semi-annual and annual intervals. Each operation includes various checks of the system and orderly recordkeeping. This is particularly important for liability purposes. Call out or repair work is generally related to operational failures, vehicle damage, weather related damage and obsolescence. A sample outline of a traffic signal maintenance program is attached (see the first exhibit presented at the end of this chapter). The program recommends that signalized intersections be preventively maintained on a six-month schedule.

One of the two positions is on a leave of absence. When this position is filled, the Street Maintenance Division should restore the preventive maintenance of traffic signals. This should include such work activities as the following:

- Cabinet maintenance twice annually including the inspection, testing, cleaning and adjustments made to the traffic signal electronic equipment cabinet; and
- Signal inspection once every two years including the inspection of traffic signal intersections for proper operation of luminaries, vehicle and pedestrian detection systems, and vehicle and pedestrian signal faces and the inspection of signal faces /heads for proper alignment and adjustment if necessary

Recommendations #139: The Street Maintenance Division should restore a comprehensive preventive maintenance program for signalized intersections upon filling of the second Signal and Street Lighting Technician.

⁷³ Manual on Uniform Traffic Control Devices, Federal Highway Administration, 2009.

(4) The Street Maintenance Division And The Traffic Engineering Division Should Collaborate To Establish A Sign Inspection Program In Accordance With Manual On Uniform Traffic Control Devices.

The new *Manual on Uniform Traffic Control Devices* (MUTCD) established minimum sign retroreflectivity requirements.⁷⁴ The requirements of the manual are noted below.

- By January 2012 agencies must establish and implement a sign assessment or management method to maintain minimum levels of sign retroreflectivity.
- By January 2015 agencies must replace regulatory, warning, and ground-mounted guide signs (except street name) that are identified using the assessment or management methods as failing to meet the established minimum levels.
- By January 2018 agencies must replace street name signs and overhead guide signs that are identified using the assessment or management methods as failing to meet the established minimum levels.

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."⁷⁵ It follows that sign maintenance methods need to be developed and implemented to provide protection from tort liability.

⁷⁴ Manual on Uniform Traffic Control Devices, Federal Highway Administration, 2009

⁷⁵ *Traffic Control Device Handbook*. Institute of Transportation Engineers, Washington, D.C., 1999.

The Street Maintenance Supervisor indicated in an interview with the consulting team that sign maintenance and replacement was accomplished on a reactive basis, not proactive given recent cutbacks in funding.⁷⁶

It is difficult to assess the staffing and the supplies cost ramifications of this requirement in the absence of a sign inventory. While the Traffic Engineering Division is developing this inventory, it will not be completed for several years.

Recommendation #140: The Street Maintenance Division and the Traffic Engineering Division should continue to collaborate in the development of a sign inspection program to enable implementation of the requirements of the Manual on Uniform Traffic Control Devices.

Recommendation #141: Based upon the results of the sign inspection program, the Street Maintenance Division should develop a proactive program to replace signs that do not meet retroreflectivity minimum requirements.

(5) The Street Maintenance Division Should Develop And Install A Formal Work Planning And Scheduling System.

The Street Maintenance Division has not developed a formal work planning and scheduling system.

The Street Maintenance Supervisor should develop a formal work planning and scheduling based upon the EnerGov Asset Management Suite. The EnerGov Asset Management Suite should be utilized for:

- Prioritizing work;
- Identifying the tasks necessary to complete the job;
- Identifying the necessary tools and materials;
- Scheduling the work to be done;
- Reporting the work actually completed; and
- Identifying any additional work that should be completed in the future to

⁷⁶ Interview with the Street Maintenance Supervisor, December 7, 2010

maintain the asset.

The Street Maintenance Supervisor should take a number of steps to install a planning and scheduling system. These steps are presented below.

- **Create and utilize work orders using the EnerGov Asset Management Suite for all of the work performed by Street Maintenance staff.** The work order should serve as the basis for identification of all of the requests for services, or work. The work order system is the backbone of a planning and scheduling system.
- **A three to six month major project schedule should be prepared.** The Division performs an essential task in preparing streets for microsurfacing and reconstruction. This major project work should be scheduled using a three to six month schedule that outlines the timetable for completing these major projects. A three to six month schedule is a process of balancing workload, both current and anticipated
- **Develop a weekly schedule in EnerGov Asset Management Suite.** The weekly schedule for Street Maintenance is the plan for assigning staff resources to specific jobs in the coming week. The weekly schedule is normally developed on a Wednesday or Thursday of the preceding week. The assignment of staff resources is based on several factors including:
 - Available work hours. This can be affected by planned leave, holidays, attrition, and other factors;
 - Available materials and equipment. To accurately schedule, materials planners must communicate realistic delivery dates for necessary materials;
 - Rate of success in the current week's schedule; and
 - Priorities. The overall plan of the master schedule becomes a guide in developing priorities for the weekly schedule.

A weekly schedule does not necessarily define the work of individual staff, but rather the number of hours by a crew to be spent each day on specific work orders.

- **The work should be tracked and reported in the EnerGov Asset Management Suite.** Tracking work progress and reporting on work progress is another important part of the planning and scheduling system. For instance, how close was the completion of the weekly execution in relationship to the plan developed in the weekly schedule? This should be reported within the context of

the EnerGov Asset Management Suite.

The planning and scheduling system should be developed by the Street Maintenance Supervisor to manage what, when, how, how much, and how well Streets Maintenance performs its work. The system should be developed within the EnerGov Asset Management Suite

Recommendation #142: The Street Maintenance Supervisor should develop and install a formal work planning and scheduling system using the EnerGov Asset Management Suite.

(6) There Are No Opportunities for Cost Reductions Within the Street Maintenance Division Without Reductions In the Level of Service and There Are Not Any Observable Redundancies in Service Delivery.

The City has been in a cost reduction mode for six of the past eight fiscal years. The Street Maintenance Division has not been exempt from these reductions. There are no observable opportunities to reduce costs within the Division without reducing levels of service. There are no observed redundancies in the Division. That is the Division is not consistently delivering services that are also delivered by other Divisions in the Public Works Department.

(7) The Street Maintenance Division Utilizes Appropriate Equipment and Technology.

The Division is appropriately equipped to conduct its work. It utilizes the same type of equipment that other cities utilize, and that enable its efficient delivery of services. This includes, for example, the use of an asphalt grinder to reduce the amount of labor hours required for digout and replacement of asphalt.

9. ENGINEERING SERVICES

This chapter presents an analysis of the Engineering Services including how Engineering Services manages the capital improvement program and the level of staffing required for the design and construction management / inspection of the capital improvement program.

1. ENGINEERING SERVICES IS AUTHORIZED THIRTEEN FULL-TIME STAFF AND A 0.7 FULL-TIME EQUIVALENT TEMPORARY WORKER.

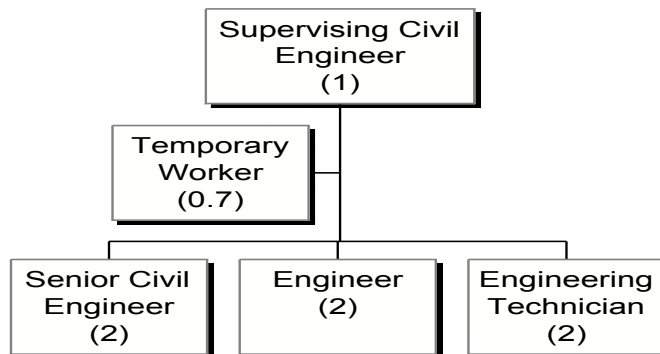
Engineering Services is responsible for the design and construction management / inspection of the City's capital improvement plan. These projects include improvements to buildings, parks, and streets as well as water, wastewater, and flood protection systems. Engineering Services also provides inspection of public infrastructure improvements built by the private sector. Engineering Services has four major activities as noted below.

- CIP project design including acquiring right of way; designing projects; preparing plans, specifications, and cost estimates.
- CIP project construction management including advertising for bids on construction contracts; awarding contracts; inspecting construction work for conformance to specifications; preparing estimates for progress payments; documenting project work to avoid unexpected claims; resolving disputes in an equitable manner; and coordinating with the public.
- Private development inspection including Inspecting construction work by the private sector on public facilities that will be dedicated to the City and ensuring that this construction conforms to City standards; inspecting work performed in the public right of way by utility companies and property owners.
- Recordkeeping including preparing and maintaining record maps of City streets and infrastructure; preparing as-built drawings of capital improvement plan project construction; compiling daily diaries for construction management and inspection activities; maintaining the City's survey control information.

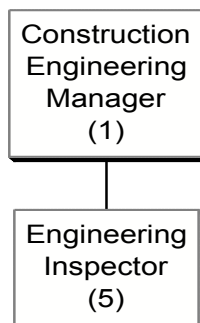
A total of thirteen (13) full-time positions and a little more than one-half (0.7) full-

time equivalent temporary positions are authorized for the design and construction management / inspection of the City's capital improvement plan. Engineering Services is organized as two separate divisions: Capital Projects Design and as Construction Management. The existing plan of organization for these two Divisions is presented below.

Capital Projects Design



Construction Management



The total FY 2010-11 budget for Engineering Services in San Luis Obispo is presented in the table below.

Budget Category	Budget \$	% of Total
Staffing	\$1,555,300	97%
Contract Services	\$6,300	0%
Other Operating Expenditures	\$35,800	2%
Minor Capital	\$-	0%
TOTAL	\$1,597,400	100%

The total 2010-11 budget for Engineering Services amounts to \$1,597,400.

2. THERE ARE A NUMBER OF POSITIVE CHARACTERISTICS IN THE DELIVERY OF ENGINEERING SERVICES.

The diagnostic appraisal of the Public Works Department identified a number of positive characteristics in the delivery of engineering services. Examples of these characteristics are presented below.

- The City has begun to develop a five-year capital improvement program budget.
- A project manager from Engineering Design is assigned to the management of the design, and project management of capital improvement projects during construction phase.
- Project Managers are responsible from project initiation to closeout.
- Engineering design staff charges their time to capital improvement projects through the project cost accounting system.
- A two year Gantt chart is developed as part of project planning and regularly updated.
- QA / QC is done at a post-project conference. A document is prepared with respect to outcomes.
- A 50% / 90% / 100% review is conducted on all vertical and horizontal construction projects.
- Pre-construction conferences are always held.

These are examples of the positive characteristics of Engineering Services.

3. ANALYSIS OF ORGANIZATIONAL STRUCTURE

The fundamental questions in evaluating organizational structure are the efficiency of the plan of organization, the responsibility and accountability of managers and supervisors. The intent is to ensure the following:

- **The organizational structure fosters accountability.** The organizational structure fosters accountability among management and supervisory staff.

- **The plan of organization enhances communication and coordination.** The number of handoffs/exchanges required among staff providing service to the public or internal clients is minimized.
- **Management and supervisory resources are utilized efficiently.** The plan of organization minimizes administrative overhead.
- **The span of control for any manager or supervisor is not more or less than 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.

These principles were utilized in evaluating the organizational structure of Engineering Services.

(1) The Plan of Organization for Engineering Services Should Not Be Modified.

Why should an organization be concerned about managerial layers and spans of control?

The City of San Luis Obispo has been challenged fiscally over the past several years to provide a responsive government at a lower cost. As noted in the General Fund Five-Year Fiscal Forecast presented to the Council in October 2010, the City is facing a long-term structural budget gap between revenues and expenditures for the foreseeable future unless corrective action is taken. One of the most effective ways to meet these challenges is to streamline organizational structure through increased spans of control.

At the present time, the Supervising Civil Engineer supervises six (6) full-time and one (1) temporary staff. The Engineering Construction Manager supervises five (5) staff.

Management literature identifies various factors that cause span of control to differ among supervisors and in different organizations. For example, narrower spans

of control are appropriate when the nature of work performed is complex, when organizational objectives are unclear, when tasks are uncertain, or risks are high. The chart, below, presents some of the factors that should be considered in evaluating spans of control.

Factor	Narrower Span of Control	Wider Span of Control
Nature of Work	Complex	Not Complex
Similarity of activities performed	Different	Similar
Clarity of organizational objectives	Not Clear	Clear
Degree of task certainty	Fuzzy	Definite Rules
Degree of risk in the work for the organization	High	Low
Degree of public scrutiny	High	Low
Supervisor's qualifications and experience	Weak	Strong
Burden of non-supervisory duties	Heavy	Light
Degree of coordination required	High	Low
Availability of staff assistance	None	Abundant
Qualifications and experience of subordinates	Weak	Strong
Geographic location of subordinates	Dispersed	Together

There are a number of factors in Engineering Services that argue for a wide and for a narrow span of control for the Supervising Civil Engineer and the Engineering Construction Manager as noted below.

- **Wide span of control.** Those factors that suggest a wider span of control is possible include:
 - The activities performed are similar,
 - The organizational objectives are clear,
 - There are definite rules for the tasks performed by the staff of the Division,
 - The staff performs their work at one location,
 - The staff assistance available for Engineering Services, and
 - The qualifications and experience of the Engineering Services staff, which are strong,
- **Narrow span of control.** On the other hand, there are factors that suggest the narrow span of control should be continued. These include the risk of the work for the organization, the degree of public scrutiny, the degree of coordination required, and the nature of the work performed by the staff of Engineering Services, which is complex.

A tall, narrow span of control is thought to create slower decisions and sometimes hamper an organization's ability to compete. Narrow spans of control may be most appropriate in highly technical or specialized areas that require close supervision.

A wider, flatter configuration means fewer layers of reporting and more subordinates reporting to a supervisor. Wider and flatter organizations tend to have faster decision-making, and improved communication, motivation and morale. Spans of control that are too wide can also create problems such as inconsistent performance and inadequate supervision.

The Matrix Consulting Group utilizes span of control guidelines to shape the discussion and development of recommendations regarding spans of control and management / supervisory layers. These guidelines were developed based upon the research and analysis conducted by a number of other cities and counties that were evaluating the number of management layers and the spans of control in their organizations. These include such cities and counties as Portland, Oregon; King County, Washington; Seattle, Washington; Kansas City, Missouri; etc.

These guidelines recognize situational differences in terms of departmental size, task complexity, etc. The guidelines, for a department such as the Public Works Department with 50 to 150 employees, suggest that not more than four layers of managers and supervisors are appropriate, and that the span of control for the ratio of first-line supervisors to non-supervisors assigned to maintenance should not be lower than 1 to 10 or higher than 1 to 20.⁷⁷

⁷⁷ *City of Portland Span of Control Study*, prepared for the City of Portland Audit Services Division by

As these guidelines apply to the Engineering Services, there are three (3) management and supervisory layers: The Public Works Director, the Deputy Director (City Engineer), and the Supervising Civil Engineer or Engineering Construction Manager. This falls within the guidelines.

The span of control for the Supervising Civil Engineer is seven (7), and the span of control for the Engineering Construction Manager is five (5). This span of control, in both instances, is less than these guidelines would suggest.

Rather than eliminate one of these two positions, the Matrix Consulting Group recommends that each of these supervisors should assume a half-time workload. The Supervising Civil Engineer has already assumed some responsibility for project management of capital projects i.e., Andrews Bypass, Mid-Higuera By-Pass Channel Study, and Sewerline Improvements 2009-2010 Area 4. The Engineering Construction Manager should do the same, and assume responsibility for the construction management of projects equivalent to one-half of his available work hours. As the next section indicates, there is more than sufficient workload to warrant a half-workload for each supervisor.

The plan of organization for Engineering Services should not be modified.

Recommendation #143: The plan of organization for Engineering Services should not be modified.

Recommendation #144: The Supervising Civil Engineer and the Engineering Construction Manager should each assume responsibility for the project management or the construction management of projects equivalent to one-half of their available work hours.

4. ANALYSIS OF STAFFING

This section provides an analysis of the workload and staffing levels of Engineering Services including the potential of alternative service delivery, if any.

(1) The Capital Projects Design Division Should Outsource the Design of a Greater Proportion of capital Projects Based Upon An Assessment of the Fiscal Year 2009-11 Capital Project Workload.

The Public Works Department allocates seven (7) full-time staff ~~to~~ for capital project design. A description of the roles and responsibilities of these positions ~~are~~ is presented below. This description is based upon the corrected profile provided to the consulting team by the Public Works Department.

- The Supervising Civil Engineer, reporting directly to a Deputy Public Works Director / City Engineer, is responsible for managing the Department's Capital Project Design program that includes both staff within this Division and varied consulting engineering firms. The Supervising Civil Engineer provides oversight of this Division and is responsible for the planning, operational, and fiscal management, staff supervision, and programmatic management related to the design of capital improvement projects that emphasize a "cradle to grave" capital project management approach. The Supervising Civil Engineer oversees capital improvement program project design operations, consultant contracts related to these projects, maintains and updates various project plans, project management systems, project scopes, reporting systems, compliance with state and federal regulations, bidding and contract negotiations, data collection and inventory systems, and project worksheets with the assistance of staff. The Supervising Civil Engineer prepares directly, and through staff, the majority of Public Works capital improvement program requests and completes the cost allocation for engineering services.
- The two (2) Senior Civil Engineer positions act as project managers for their capital projects, performing internal design, project management, and oversight of design contractors. These two staff are assigned approximately 15 to 20 projects based upon two-year financial plan and Capital Improvement Program Review Committee priorities, and manage the project process through design and construction, including budget development, project research and development, change orders, preparation of City manager / City Council Reports, etc. The staff focus on "vertical" construction projects and / or projects of a more complicated nature. These two (2) positions are licensed professional

engineers (PE). One (1) of the two (2) Senior Civil Engineers is assigned responsibility as the Pavement Manager.

- The Engineer III position performs similar duties and responsibilities to the Senior Civil Engineer positions, but of a less complicated nature. Additionally, this position's specialized skill sets allow emphasis on bridges and other complex "horizontal" construction (e.g. streets).
- The Engineer II position performs standard design and project management duties, typically emphasizing "horizontal" (e.g. streets) construction such as roadway micro-surfacing and other pavement management related projects. The Engineer I uses information from the American Public Works Association MicroPaver pavement management software.
- The two (2) Engineering Technician III positions obtain work direction from the Supervising Civil Engineer, and are typically focused on routine design and/or underground utility projects (water / sewer) as well as utilizing AutoCAD to support internal design operations.

Altogether, there are seven (7) engineering staff allocated to the design and project management of capital projects.

The project team analyzed the staffing requirements for design and project management of the projects contained in the 2-year fiscal plan. The analysis of the staffing requirements is presented below.

- **The Capital Projects Design Division is responsible for the design administration and design development of \$25.3 million of capital projects.** Important points to note concerning these projects are presented below.
 - The \$25.3 million represents the construction costs for these projects including prior year funding, 2009-10 funding, and 2010-11 funding.
 - There are a total of 110 projects that were budgeted for design and construction in the 2-year plan.
 - Approximately 43% of these projects – in terms of construction costs - were designed using consulting engineers, and 57% with the staff of the Capital Projects Design Division.
- **In evaluating the workload of the Capital Projects Design Division, the consulting team used the cost of construction guidelines presented in the**

following section of this chapter. The consulting team also utilized a project manager / designer hourly rate of \$117. The Division provided this hourly rate.

- **Not all of the seven (7) staff of the Division will have available all of their work hours for the design and project management of capital improvement projects.** Examples are provided below.
 - The Supervising Civil Engineer should allocate one-half of his time to supervision of the staff of the Division. In addition, as noted earlier, the Supervising Civil Engineer prepares directly, and through staff, the majority of Public Works capital improvement program requests and completes the cost allocation for engineering services.
 - A Senior Civil Engineer position is responsible for the City's pavement management program. The Senior Civil Engineer uses information from the American Public Works Association MicroPaver pavement management software.
 - In addition, all of the seven (7) staff should be expected to "lose" available work hours to training, meetings, etc.
- **Overall, during this two-year period, the Capital Projects Design Division requires a little more than seven (7) engineers and engineering technicians** given this workload and the split between in-house staff and consulting engineers. This compares to the existing seven (7) engineers, engineering technicians, and engineering supervisors that are available.
- **The consulting team recommends that a greater proportion of projects be outsourced.** The consulting team recommends that the balance of projects designed by consulting engineers versus in-house staff should be altered. In-house staff should design a lesser proportion of the projects. The ratio – in terms of construction cost – should more closely approximate 55% consulting engineer and 45% in-house staff – in terms of construction cost - **based upon the 2009-11 capital improvement program.**

Overall, the balances in utilization of consulting engineers versus the Division's own staff should change. **This is based upon the 2009-11 capital improvement program.**

Recommendation #145: The balance of projects designed by consulting engineers versus the staff of the Capital Projects Design Division should be modified. The staff of the Division should design a greater proportion of the projects. The ratio – in terms of construction cost – should more closely

approximate 55% consulting engineers and 45% the staff of the Division – in terms of construction cost - based upon the 2009-11 capital improvement program.

(2) The Workload of the Construction Management Division Slightly Exceeds Capacity for Management and Inspection of Capital Projects With Its Own Staff Based Upon An Assessment of the Fiscal Year 2009-11 Capital Project Workload.

The Public Works Department allocates six (6) full-time staff for construction management and inspection of capital improvement projects, private development (for the public improvements that will be dedicated to the City), and encroachment permits. A description of the roles and responsibilities of these positions is presented below. This description is based upon the corrected profile provided to the consulting team by the Public Works Department.

- The Engineering Construction Manager, reporting directly to the Deputy Public Works Director / City Engineer, is responsible for managing the Department's Construction Management program, including capital improvement projects and private projects. The manager provides oversight of this Division, and is responsible for the planning, operational and fiscal management; troubleshooting project-related issues; construction contract claims negotiations; special projects management; and overall project quality assurance / quality control.
- Two (2) Engineering Inspector III positions provide inspection services for the City, and are fully cross-trained on "vertical", "horizontal", and "sub-surface" capital projects, although staff has various specializations. The staff provides inspection services for all City departments including Public Works, Utilities, and Parks and Recreation. The two (2) staff provides Capital Improvement Program project inspection services to include site visits, inspection reports, diary maintenance, as-built administration, project software, update, punch-list development, warranty inspections, payment authorization, negotiate change order/extra work, oversee contract project managers etc. The Engineering Inspector III's are certified as *American Public Works Association* Public Infrastructure Inspectors.
- The three (3) Engineering Inspector I and Engineering Inspector II positions provide much the same types of inspection services as the Engineering Inspector III positions, though occasionally of less complexity.

- One (1) Engineering Inspector II provides inspection services for the City for capital improvement program projects.
- A second Engineering Inspector II splits his time between inspection private development and capital projects.
- The Engineering Inspector I provides inspection of encroachment permits.
- Part-time temporary worker positions provide approximately 600 hours annually (.3 FTE) to provide support services to the Capital Projects construction and inspection.

Altogether, there are six (6) engineering staff allocated for construction management and inspection of capital improvement projects, private development (for the public improvements that will be dedicated to the City), and encroachment permits.

The project team analyzed the staffing requirements for construction inspection and construction management of the projects contained in the 2-year fiscal plan. The analysis of the staffing requirements is presented below.

- **The Construction Management Division is responsible for the construction inspection and construction management of \$25.3 million of capital projects.** Important points to note concerning these projects are presented below.
 - The \$25.3 million represents the construction costs for these projects including prior year funding, 2009-10 funding, and 2010-11 funding.
 - There are a total of 110 projects that were budgeted for design and construction in the 2-year plan.
 - Approximately 47% of these projects were inspected using consulting engineers, and 53% with the staff of the Construction Management Division.
- **In evaluating the workload of the Construction Management Division, the consulting team used the cost of construction guidelines presented in the following section of this chapter.** The consulting team also utilized a construction inspector hourly rate of \$89. The Division provided this hourly rate.

- **The six (6) staff of the Division will not all be available for the construction inspection and construction management of capital improvement projects.** For example:
 - The Engineering Construction Manager provides oversight of this Division, and is responsible for the planning, operational and fiscal management; troubleshooting project-related issues; construction contract claims negotiations; special projects management; and overall project quality assurance / quality control; and
 - One Engineering Inspector II splits his time between private development and capital projects. This Engineering Inspector II is only available half time (0.5 full-time equivalent) for inspection of capital projects.
 - An Engineering Inspector I provides inspection of encroachment permits. This inspector is not available, under current circumstances, for inspection of capital projects.

Of the six (6) inspection staff, only three and one-half (3.5) Engineering Inspectors are available for construction inspection.

- **The Engineering Inspector I assigned to inspection of encroachment permits does not have sufficient workload to warrant that assignment on a full-time basis.** The number of encroachment permits issued by the Public Works Department has ranged from a low of 192 in 2005-06 to a high of 341 in 2002-03. This is based upon workload information provided by the Public Works Department.⁷⁸ The amount of staff hours required for inspecting encroachment permits were defined in the City's user fee study. The fee study indicated that encroachment permits should require approximately 890 hours annually. This is based upon information provided by the Public Works Department.⁷⁹ The fee study indicated that encroachment permits should require approximately 680 hours annually; this is based upon 305 encroachment permits. This excludes 213 hours allocated to construction inspection above and beyond the amount of staff hours allocated for inspection of encroachment permits. The amount of staff hours required for inspection of each encroachment permit and the encroachment permit workload indicates that the Engineering Inspector I should have 55% of his available work hours available for the inspection of capital improvement projects.
- **Overall, during this two-year period, the Capital Projects Design Division requires almost six (5.8) construction inspectors given the 2009-11 capital workload and the split of this workload between consulting engineers and**

⁷⁸ This information was provided to the consulting team in a Microsoft Excel spreadsheet entitled "dev rev workload" and was provided to the consulting team on November 7, 2010.

⁷⁹ This information was provided to the consulting team in a Microsoft Excel spreadsheet entitled "Stats and Fees Updated 12-15-10" and was provided to the consulting firm on December 15, 2010.

in-house construction inspectors. This compares to the four (4) inspectors that are available. This excludes the Construction Manager and one-half of the two (2) other inspectors that allocate (or should allocate) one-half of their available work hours to inspection of private development and encroachment permits.

- **Overall, the Construction Management Division is appropriately staffed given the given the 2009-11 capital workload if the Division shifted some of this workload to consulting engineers.**

Overall, the balances in utilization of consulting engineers versus the Division's own inspection staff should be modified, based upon the 2009-11 capital improvement program.

Recommendation #146: The balance of projects inspected by consulting engineers versus the staff of the Construction Management Division should be modified. The Division should outsource more of its construction inspection and management workload to consulting engineers based upon the 2009-11 capital improvement program.

Recommendation #147: The Engineering Inspector I assigned to inspection of encroachment permits should allocate 55% of his available work hours for the inspection of capital improvement projects, and 45% to the inspection of encroachment permits.

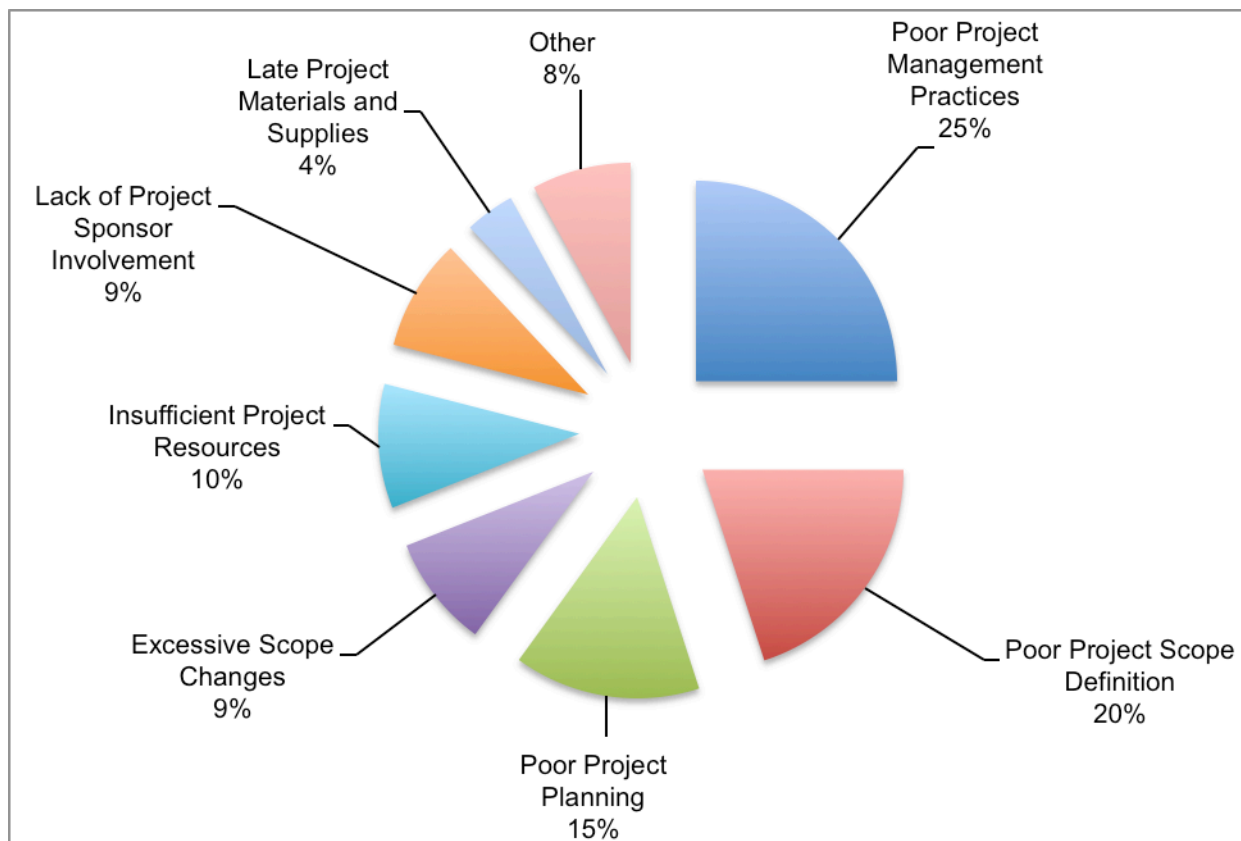
5. ANALYSIS OF OPERATIONS AND MANAGEMENT

This section provides the project team's analysis of the opportunities for improvement in the operations and management systems for Engineering Services.

In conducting this analysis, the project team utilized best practices found in other cities and its own experience in analyzing engineering practices in cities for over thirty (30) years, the best practices cities by other engineering consultants, the practices of other cities with well managed engineering programs, and the best practices of the *American Public Works Association*, where available.

This analysis focused, in part, on the project management of capital projects. Typical management critiques of project management results for a wide variety of

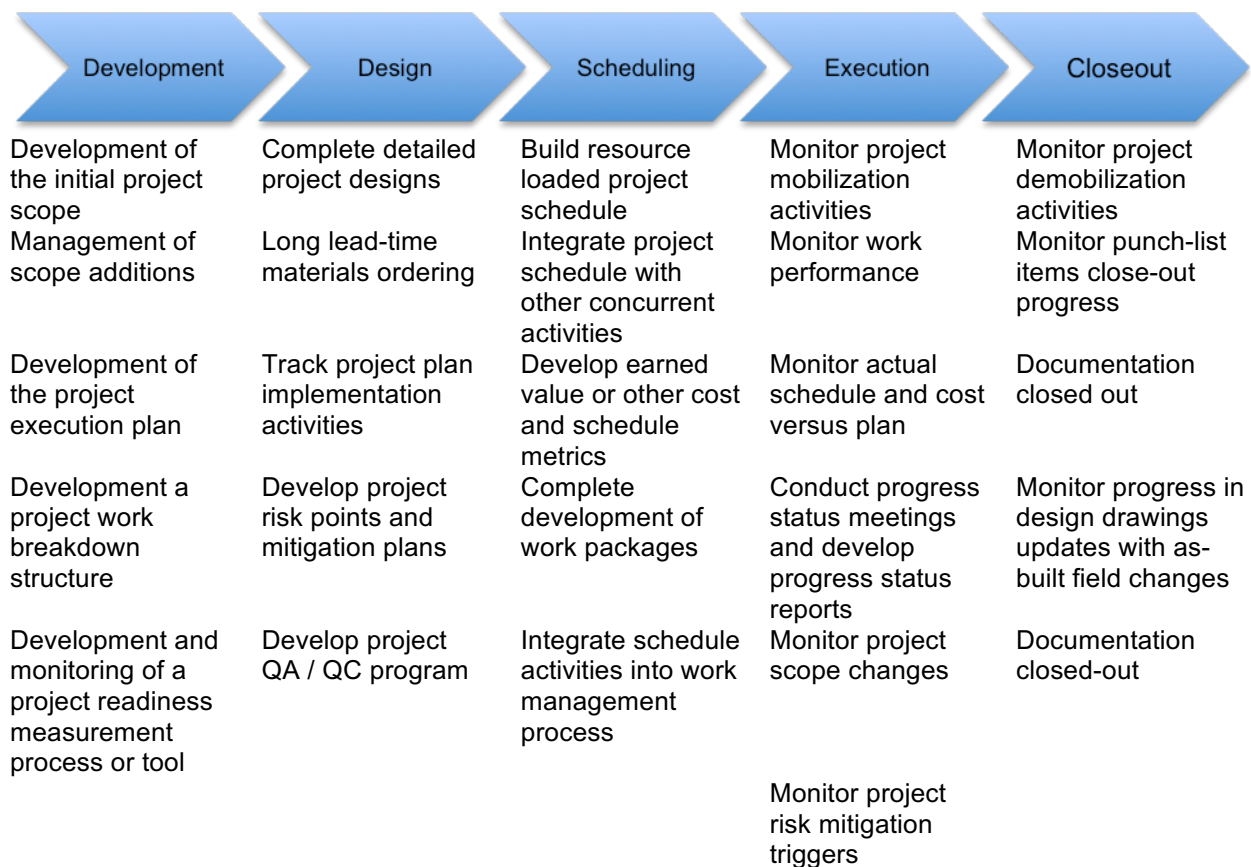
project types indicate the following sources for project failures as noted in the chart below.⁸⁰ This chart represents typical problems found in cities, not just San Luis Obispo.



Overall, the process for managing capital projects is the cause of 69% of project failures. This includes such processes as scoping a project, project planning, scope changes, etc.

In evaluating the project management practices used by Engineering Services, the Matrix Consulting Group used a system approach as depicted in the chart below.

⁸⁰ The source of the data contained within the chart in the chart above was the Construction Industry Institute



Some of the elements of project management noted in the previous chart are not present in San Luis Obispo. The Matrix Consulting Group recommends a number of enhancements in the project management practices utilized by Engineering Services. These enhancements are discussed below.

(1) The Capital Project Design Division Should Enhance Its Capital Improvement Program Project Management Manual.

The *American Public Works Association* has developed a *Public Works Management Practices Manual* that presents recommended practices identified by “nationally recognized experts in the field of public works.” Practice 1.4 states “the organization’s policies, practices, and procedures are periodically reviewed and / or updated to reflect actual practices. Definitive guidelines are provided to employees to

accomplish their assigned tasks.”⁸¹

The Capital Project Design Division has developed a “Project Designer / Manager / Inspector Notes” manual. This manual includes a number of topics including finances, working downtown, environmental process, permits from other agencies, construction, etc. The manual does not comprehensively address how Engineering Services should manage capital projects.

Why develop policies and procedures?

Though it is possible to get by without a policy and procedure manual, it often creates issues if there is personnel change. The lack of a manual relies on the, “well, we have always done it that way philosophy” instead of providing concrete documentation and instructions on how programs and services are developed, implemented, and assessed. A policy and procedure manual can help Engineering Services continue to provide a consistent service regardless of the personnel in the office.

Given the magnitude of the City’s capital expenditures, it is important the City use effective project management procedures to assure that these projects are managed efficiently, are allocated the necessary resources to accomplish the projects’ objectives, and avoid risks to minimize the potential for cost or schedule overruns. To achieve this goal, the City should develop a comprehensive project management policies and procedures that addresses project management, cost management, schedule management, scope management, risk management, quality management, contract development, contract administration, project communication / reporting, and document management.

⁸¹ American Public Works Association, Public Works Management Practices Manual, 2004.

The capital project management policies and procedures manual should address the process to be utilized for managing projects and the technical aspects of project and construction management. The process aspects that should be included in the policies and procedures manual are presented below.

- **Initiating and aligning the project team that will be utilized for project delivery.** This includes developing a clear understanding of the purpose and goals of the project, developing a project description, identifying the members of the team, the major milestones, the boundaries of the project (scope control), the team roles and responsibilities, the measures of success for the project, and operating guidelines. The deliverable would be a project initiation and alignment worksheet.
- **Planning the work of the project.** This would involve the development of the project plan. The project plan should include a work breakdown structure based upon a master deliverable list developed for the City's project delivery (i.e., project definition, consultant request for proposals, project finance plan, construction cost estimate, project management plan, design development, value engineering, etc.), development of a risk management plan (deciding how to approach, plan, and execute risk management activities), developing a communication plan, developing a change management plan (for scope control), developing a quality plan, and developing a transition and control plan. The project plan should be scalable based upon the size of the project.
- **Endorsing the plan.** This involves gaining the commitment to the project management plan by the project team, and City management.
- **Working the plan.** This involves actively managing the execution of the project in terms of design, construction management, and construction inspection. It includes managing the scope, the schedule, and the budget, the risks associated with the project, change, and communicating progress with the project.
- **Transition and closure.** This involves acceptance of the work, demobilization, financial closure, development of a written "lessons learned," and development of "as built" drawings and archiving.

While it is important for the policies and procedures manual to describe the process of managing a capital project, the manual also needs to address the technical aspects of managing a project. This should include such aspects as noted below.

- Design consultant selection.
- Design consultant contract administration;
- Design coordination and review;
- Developing construction cost estimates;
- Advertising and award of construction projects;
- Constructability review of designs by Construction Management;
- Initial guidance to the construction contractor (i.e., pre-construction meeting, submittals, pay requests, etc.);
- Public relations during construction;
- The Engineering Inspectors daily report;
- Construction quality control;
- Materials testing;
- Project files;
- Project acceptance; and
- Project warranty procedures.

By including these policies and procedures within a manual, it creates a reference tool for training of City staff.

The Capital Project Design Division should develop a capital improvement program project management manual to assure these projects are managed efficiently, allocate the necessary resources to accomplish the projects' objectives, and minimize the potential for cost or schedule overruns.

Recommendation #148: The Capital Project Design Division should develop a capital improvement project procedures manual.

Recommendation #149: The Capital Project Design Division should develop an on-line capital improvement project management guide (i.e., the guide should be

published to the Division's Intranet).

(2) Upon Development of the Project Management Manual, the Supervising Civil Engineer / Capital Projects Design Should Provide Project Management Training to the Staff of Engineering Services.

The Project Management Institute published a *Guide to the Project Management Body of Knowledge* (PMBOK Guide). Principle 9.3.2.2 indicates that among the generally recognized good practice for project management includes "training. Training includes all activities designed to enhance the competencies of the project team members."⁸²

Why provide training?

This training is designed to strengthen the project management skills of Engineering Services management, engineering, technical, construction and support personnel in delivering the City's design and construction programs on schedule, within budget and within scope.

This training should consist of the following elements:

- **The value of capital project management.** Confirm the increasing focus, impact and value of good project management to the City. This would include the role of project management in the City's capital improvement program, and the fundamentals to assure project management effectiveness, value and success factors. Review the essential elements of project management process and life cycle.
- **An overview of the City's capital project management process.** Discuss the City's project management process, best management practices, demonstration of the capital project management on-line guide and an update of the City's capital projects status and activities.
- **Capital project scope, schedule, and budget.** Provide a better understanding of the importance and interfaces of projects within the City's portfolio of capital projects. Describe the City's requirements for planning, executing, monitoring and reporting of its capital projects. This should include the use of a project management software system.

⁸² Project Management Institute, A Guide to the Project Management Body of Knowledge, 2008.

- **Capital project budget estimating.** Discuss the process used for construction cost estimating. The discussion should include assuring that the cost matches the scope, that unit prices have been utilized to develop the budget and that these unit process are valid, contingencies have been identified, and that risk costs have been identified.
- **Managing the delivery of the City's capital improvement projects.** Discuss the requisite core competencies and skill sets of a successful project manager, and the interfaces between different work units in managing a capital project that the City's project manager must understand and navigate in order to plan and deliver a project successfully.
- **Contract negotiations.** The art of negotiating contracts and the important part that it plays in a project manager's life including the key elements in successful negotiating.
- **Risk management.** Discuss the methods employed to manage and monitor risks update risk management plans on a regular basis, complete with cost and schedule impacts.
- **Project management reporting.** Discuss the development and deployment of easily accessible, transparent, consistent and accurate capital project status information to provide departmental managers and Project Owners with tools to assist them in managing capital project scope, schedule and cost. This project status information should be provided in a bi-monthly report as noted later in this chapter.

To assure consistency in the management of projects, it is important that all of the Engineering Services staff use the methods. This can only be accomplished through the development of the previously recommended project management manual and the provision of training to these staff in the employment of those procedures.

Recommendation #150: The Supervising Civil Engineer should provide training of Engineering Services management, engineering, technical, construction and support personnel to strengthen their project management skills in delivering the City's design and construction programs on schedule, within budget and within scope.

Recommendation #151: The project management training should be required of the professional and paraprofessional staff in Engineering Services.

(3) The Responsibilities of Capital Projects Design in the Management of Capital Projects Should be Clearly Spelled Out In a Formal Written Policy and Procedure

The *American Public Works Association* has developed a *Public Works Management Practices Manual* that presents recommended practices identified by “nationally recognized experts in the field of public works.” Practice 11.1 states “organizational policies assign engineering design responsibilities for infrastructure. Agencies may be organized in various ways, ranging from individual functions to departments with a range of responsibilities. Policies should state who is responsible for design and define when professional consultants are utilized.”⁸³

Why clarify this accountability?

Accountability is critical to ensure focused effort and results. It serves as a control against unwise actions and protects the interests of the City.

The proposed roles and responsibilities for Capital Projects Design in the management of capital projects are presented below. These responsibilities are summarized in the exhibit following this page

- Preparation of plans and specifications for capital projects, either with their own staff or through consulting engineers retained and managed by Engineering Services;
- Managing the design of the capital projects including preparation of project scoping plans, critical path method schedules, staffing plans for the design and construction management of the projects, monitoring the performance of consulting engineers, processing the payment requests of consulting engineers, etc. so that the design occurs within the budget and schedule defined within the project scoping plans;
- Coordination of the design review at 30% / 60% / 90% design completion by Construction Management, the capital project owner, etc. for technical accuracy, constructability, compliance with the utility master plan, etc.;

⁸³ American Public Works Association, *Public Works Management Practices Manual*, 2004.

Exhibit 10

**Management Requirements For
Capital Projects**

Component of the Capital Improvement Process	Requirement
Planning and Organizing the CIP	Preparation of project scoping plan for each CIP project to define the financing, description, scope, design considerations, and the necessary coordination with outside agencies.
	Preparation of a network schedule for each project, including duration time for each task, and earliest and latest start and finish times.
	Preparation of bar chart schedules for the entire CIP for a 2-year period showing projected timing of planned projects by major project component (e.g., design, bid, award, construction, etc.).
	Projection of staffing requirements to handle planned, prioritized projects for next fiscal year, including workload loading on a monthly basis.
	Leveling of resources to enable the development of schedules based on available staffing.
Project Management	Management of capital improvement projects in accordance with the project scoping plan approved by the capital project owner.
Project Monitoring and Reporting	Reporting via the time accounting system of actual staff-hours by skill level and position type on CIP projects to provide the basis for: - Monitoring of staff and contractor performance against guidelines during each phase of the process. - Monitoring actual versus projected staff needs. - Development of a database to utilize in refining project workload estimates. Time accounting system includes an hourly rate that accounts for indirect time and Division-wide overhead.
	Reporting of the project status on a monthly basis, including status of staff hours planned vs. actual.
	Reporting of financial and schedule status of each project showing expenditures and schedule to-date versus the project scoping plan.
	Recommending within the monthly status report steps that can be taken to enable completion of projects on schedule.
	Communication to top management, within the monthly status report, of CIP projects that will not be completed on schedule and within budget, along with estimated completion dates for each of these projects.

- Coordination with Capital Project Design support staff for the advertising and award of construction contracts;
- Managing the construction of capital projects working with Construction Management including providing initial guidance to contractors through pre-construction meetings, review of product submittals from construction contractors, review of construction contractor progress payment requests after the requests are approved by the construction inspector assigned to the capital project, reviewing the Engineering Inspector's daily reports, final on-site inspection before acceptance of the project from the construction contractor, coordination of warranty repair requests made to the construction contractor, etc.

These roles and responsibilities should be published in a formal policy and procedure, reviewed with the Office of the City Manager and adopted as a citywide policy and procedure, and "posted" or published to the Department's intranet.

The responsibility for managing all engineering aspects of the City's capital improvement projects should be clearly assigned to the Capital Project Design Division.

Recommendation #152: The Public Works Director should direct staff, as appropriate, to develop a formal written policy and procedure that clarifies responsibility for managing all of the engineering aspects of the delivery of the City's capital projects from "cradle to grave" as being assigned to the Capital Projects Design Division.

Recommendation #153: The Public Works Director should direct staff, as appropriate, to develop a formal written policy and procedure that clarifies responsibility for managing all of the engineering aspects of the delivery of the City's capital projects from "cradle to grave" as being assigned to the Capital Projects Design Division. The City similarly should adopt this policy and procedure.

Recommendation #154: The Capital Projects Design Division should be assigned responsibility for managing the design of the capital projects including preparation of project scoping plans, critical path method schedules, staffing plans for the design and construction management of the projects, monitoring the performance of consulting engineers, processing the payment requests of consulting engineers, etc. so that the design occurs within the budget and schedule defined within the project scoping plan.

(4) The Capital Projects Design Division Should Prepare Project Scoping Plans Before the Commencement of Design.

The *American Public Works Association* has developed a *Public Works Management Practices Manual* that presents recommended practices identified by “nationally recognized experts in the field of public works.” Practice 11.5 states “project scoping is conducted to ensure that sufficient detailed information is provided to allow agency or contract forces to design the project within the anticipated cost and within the intended project objectives.” ⁸⁴

Why develop a project plan?

Developing project plans at the start of the project that clearly set client expectations regarding scope, timeline, and budget is critical to ensuring that efforts and hard work pay off, and that potential hardships are avoided later.

The Capital Projects Design Division should prepare a project planning document before the commencement of design for a capital project. The project planning document should include those elements noted below.

- The project title, including the phase of the project, if relevant.
- A general project description, including a narrative summary description of the project, specific physical improvements included, the location of the project, and the relationship to utility master plans, transportation master plans, the 5-year capital improvement program, etc.
- The capital project number (as noted in the five-year capital improvement program).
- The financing and cost, including the source of funds and appropriation status.
- A budget covering the design staffing, construction inspection staffing, appropriate consultants, property acquisition, utility relocation, etc., by major

⁸⁴ American Public Works Association, *Public Works Management Practices Manual*, 2004.

- expenditure component including a break down of the expenditures on a month-by-month basis to enable effective cash management.
- The responsibility for completing the various components of the capital project such as the following:
 - Design by in-house staff or by consulting engineer;
 - Construction inspection by in-house staff or by consulting engineer;
 - Design survey and construction staking by consulting engineer;
 - Materials testing required;
 - Environmental evaluation required;
 - Right-of-way acquisition required and, if so, the number of parcels and their locations and assessor parcel numbers;
 - Utility relocations that need to be relocated, problems with relocation and timing issues; and
 - Other key responsibilities that need to be assigned and/or accomplished.
 - The extent of coordination necessary, listing the inter-agency coordination by division, department, or outside agency with whom coordination will be required in the design and construction of the capital project, (e.g., Utilities) the nature of the coordination, and the key contacts.
 - The preliminary schedule for completing the design and construction of the capital project including the schedule for design, bid package preparation, advertise/award, right-of-way acquisition, environmental impact reports, and construction and including the dates of important events such as approval of the award of the construction contract by the City Council.
 - A change management plan or procedure that includes a documented, systematic approach to the handling of construction change orders. This should include the mechanisms that would be employed to control scope creep, schedule changes, changes in deliverables, technical changes, etc.
 - Staffing levels required throughout the design and construction phase, including the estimated staffing required in terms of person hours required for design and construction inspection utilizing the cost of construction guidelines.
 - Materials testing policies and procedures.

- Design and construction reporting requirements, including cost and schedule control procedures.
- The roles and responsibilities of the project team during the design and construction management of a project. Possible roles and responsibilities, for example, during the design of a project are presented below.
 - Supervising Civil Engineer – Capital Projects Design Division.
 - Provide leadership and oversight for delivery of the design program;
 - Reviews the status and delivery plans for projects; and
 - As the design of the project progresses, set goals and provide advice and guidance.
 - Senior Civil Engineer - Design Squad Team Leader.
 - Coordinate design team operations and incorporate products from other groups (i.e., Utilities, Construction Management, etc.) to the design file and plans, specifications, and estimates;
 - Design oversight including meeting the requirements of the design manual;
 - Provide technical advice regarding individual design elements;
 - Bring concerns from the design team to the management team; and
 - Maintain the project schedule.
 - Engineer.
 - Project manager for the project;
 - Engineer of record for contract plans;
 - Liaison between the project delivery team and the management team;
 - Work with consulting engineers and construction contractors to resolve any issues or roadblocks;
 - Monitor the schedule and budget; and
 - As the project progresses, set goals and provide advice and guidance;
 - Engineering Technician.
 - Assist with the preparation of the design file and plans, specifications, and estimates;
 - See that the design meets the requirements of the design standards used by the City;
 - Provide information, as needed, to specialty groups (i.e., Utilities,

Construction Management, etc).

- Construction Management
 - Provide construction inspection and management of the capital project to assure the project is built to plans and specifications, the number of change orders are minimized, the construction adheres to schedule, etc.

While it may seem that the Capital Projects Design Division is too small in terms of staff to warrant Design Squad Team Leaders, the Division is authorized two (2) Senior Civil Engineers, two (2) Engineers, and two (2) Engineering Technicians. This would enable a team of three each for each Senior Civil Engineer, and provide growth and career development opportunities for each Senior Civil Engineer. In addition, the experience of the consulting team is that Senior Civil Engineers are typically used as first-line supervisors or team leaders. The Design Squad Team Leaders are **NOT** full-time supervisors. The Design Squad Team Leaders are **lead workers** who would allocate **most** (i.e., 85% to 95%) of their time to the design and project management of capital projects. The use of Design Squad Team Leaders would **NOT** reduce the span of control for the Supervising Civil Engineer, since the Supervising Civil Engineer would continue to have responsibility as the only full-time supervisor for the evaluation and direction of the performance of the staff of the Division.

- The measures of success for the project in terms of what the team must accomplish for the project to be successful and the measures of success for the team (e.g., bringing the project in on schedule and on budget).
- The operating guidelines in terms of how the project team will govern itself (i.e., decision-making process, team meeting frequency, communication methods, etc.).
- A risk assessment to identify the risks or threats associated with the execution of the project, the response strategy, and how the risk would be monitored and tracked.
- A communication plan for external and internal communication regarding the project including the responsibilities and mechanisms for the communication and when the communication should occur.
- How the quality of the project will be achieved including the standards, methods of verification that standards are met during construction, constructability reviews during design, maintenance review during design, etc.
- How the project will be transitioned to Construction and Maintenance upon completion of construction and how the project will be closed out upon

completion of construction (e.g., as-built designs, archiving of records, acceptance of work completed by the construction contractor, etc.).

The project planning document provides an opportunity to develop a clear understanding of the project including the purpose, goals, budget, schedule, etc. However, the depth of the project plan needs to recognize the size and scope of the capital project. **Small capital projects (i.e., estimated construction cost of \$100,000 or less) should be based on simpler project plans.**

Recommendation #155: The Capital Projects Design Division should prepare a project plan before the commencement of the design of a capital project.

(5) A Preliminary Design Should Be Completed When the Design of Major Capital Projects Is No More Than 10% to 20% Complete.

The *American Public Works Association* has developed a *Public Works Management Practices Manual* that presents recommended practices identified by “nationally recognized experts in the field of public works.” Practice 11.8 states “guidelines define preliminary design standards, methodologies, and cost estimates. Once approved, design plans, design standards, and methodologies are applied to generate one or more preliminary designs, which meet the standards of design. Preliminary designs examine various alternative processes, equipment, etc., that will fulfill the objectives of the project.”⁸⁵

Why develop a preliminary design?

A preliminary design clarifies the goals and objectives of a capital project, develops evaluation methods and tools to evaluate the effectiveness of the design, defines alternatives and design options, and includes design studies for discussion with Project Owners.

⁸⁵ American Public Works Association, *Public Works Management Practices Manual*, 2004.

The engineer assigned to the design of the capital project in the Capital Projects Design Division should be responsible for preparing a design report (project evaluation and alternatives study) **for major capital projects or complex or controversial projects**. If a consulting engineer is completing the design of the project, then the consulting engineer would prepare this design report.

The design report should be prepared when the design is not more than 10% to 20% complete. The purpose of the design report is to serve as a preliminary design review to enable the project engineer assigned to the design to review the proposed design approach with the Senior Civil Engineer and the Supervising Civil Engineer and the Project Owner. More specifically, the design report should:

- Briefly identify the capital project and describe the project;
- Provide a background to the project including project history, whether the project has any outside support or opposition, and whether any commitments regarding the project have been made;
- Define the problem the capital project is intended to solve and the alternatives considered that could possibly solve all or a portion of the problem;
- Outline the detailed scope of the project and the reasoning behind the selection of the alternative utilized for the design and other engineering decisions;
- Outline in detail the design criteria used for the capital project and the rationale for those criteria; and
- Set forth the detailed construction costs for the capital project based upon a detailed review of expected problems and the completion of 10% design, and the sources of funding.

Upon completion of the design report, the engineer assigned to the design of the project in the Capital Projects Design Division should schedule a preliminary design review meeting. The project engineer assigned to the design, the Senior Civil Engineer, and the Supervising Civil Engineer should attend this meeting.

At this meeting, the project engineer assigned to the design should briefly review the project, the alternatives selected, the selected alternative and why this alternative was selected, the design and construction cost estimate, special problems not resolved, the project schedule, and the staffing requirements (or consulting engineer) needed to complete the design and construction management.

Recommendation #156: The project engineer in the Capital Projects Design Division assigned to the design of a project should complete a preliminary design for each significant and complicated capital improvement project when the design is no more than 10% to 20% complete. The preliminary design should be reviewed with the Project Owner.

(6) Cost of Construction Guidelines Should Be Utilized to Document Resource Requirements for the Design and Inspection of Capital Improvement Projects.

The Project Management Institute published a *Guide to the Project Management Body of Knowledge* (PMBOK Guide). Principle 3.41 indicates that among the generally recognized good practice for project management includes the development of a work breakdown structure, activities, activity resources, an estimate of costs, and a budget.”⁸⁶

Cost of construction guidelines should be used as a budgeting tool to determine the number of staff hours required for design and construction inspection and to evaluate whether projects are being managed and executed efficiently.

The exhibit presented following this page presents an **example** of cost of construction guidelines for the design and inspection of capital improvement projects as a percentage of construction costs.

Why utilize cost of construction guidelines to develop a budget for the capital improvement program for design and inspection staffing requirements?

⁸⁶ Project Management Institute, A Guide to the Project Management Body of Knowledge, 2008.

Exhibit 14

**Allocation of Staff Resources for
Design and Inspection As A Median
Percentage of Net Construction Costs**

Type of Project	Street Construction				Street Reconstruction				Traffic Control		Water and Wastewater			
Level of Complexity	Above Average		Average		Above Average		Average		Average		Above Average		Average	
Construction Cost (+/-)	\$0.25 million	\$1 million	\$0.25 million	\$1 million	\$0.25 million	\$1 million	\$0.25 million	\$1 million	\$0.25 million	\$1 million	\$0.25 million	\$1 million	\$0.25 million	\$1 million
Planning and Scoping	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%
Design Development	10%	8%	9%	7%	13%	11%	10%	8%	8%	6%	9%	8%	8%	6%
Design Survey	1 ½%	1%	1 ½%	1%	1 ½%	1%	1%	½%	1 ½%	½%	1%	½%	1%	½%
Design Administration	2%	2%	1 ½%	1 ½%	2%	2%	1 ½%	1 ½%	1 ½%	1 ½%	1 ½%	1½%	1 ½%	1 ½%
Construction Survey	3%	2 ½%	2 ½%	2%	2%	1 ½%	1 ½%	1%	0.1%	0.1%	2½%	2%	2½%	2%
Construction Inspection	5%	5%	4%	4%	5%	5%	4%	4%	3%	3%	4%	4%	4%	4%
Construction Management	3%	3%	2%	2%	3%	3%	1 ½%	1 ½%	2%	2%	3%	3%	2%	2%
Project Closure	0.4%	0.1%	0.4%	0.1%	0.4%	0.1%	0.4%	0.1%	0.4%	0.1%	0.4%	0.1%	0.4%	0.1%
Total	25.4%	22.1%	21.4%	18.1%	27.4%	24.1%	20.4%	17.1%	17%	13.7%	21.9%	19.6%	19.9%	16.6%

Capital projects are most amenable to effective cost management in the early stages of the project and the least in the construction stage. If budgets are not well defined early, project costs will increase as the project progresses. A consistent approach to budgeting practices throughout the various phases in the life of a project can reduce or help manage the uncertainties in project development that can increase project costs.⁸⁷

Percentage of construction cost has been widely used for determining the compensation of consulting engineers on assignments where the principal responsibility is the design and inspection of various works. The following points should be noted concerning this cost of construction guideline.

- Two different levels of complexity are noted: average and above average. An above average level of complexity should be based upon the need to deal with other agencies (e.g., CalTrans), the design complexities of the project, or problems with planning and construction determining the compensation of consulting engineers on assignments where the principal responsibility is the design of various works, and the preparation of drawings, specifications, and other contract documents as necessary.
- These guidelines are customized to fit the different types of construction jobs such as street construction, street reconstruction, traffic control, water and sewer.
- These guidelines were developed to “fit” the different types of work activities in each capital project. These include planning and scoping, design development, design survey, design administration, construction survey, construction inspection, construction management, and project closure.
- The guidelines are expressed as a percentage of construction (e.g., the cost of staffing as a percentage of construction). To determine the number of staff hours required, divide the cost of the work activity based upon the cost of construction guidelines by the current loaded hourly cost for engineering staff.
- The guidelines identify resource requirements for each work activity associated with a project. These include design development, design administration, etc.

⁸⁷ City of Seattle, Washington, Capital Improvement Program Study of Seattle Transportation, 2001.

- If a consulting engineer is accomplishing the design, the project manager in the Engineering Division would utilize the guideline for design administration, and not design development.

These guidelines were developed in consultation with the Public Works and Engineering Practice of Bureau Veritas. Bureau Veritas deploys multi-disciplinary skills from over 40,000 employees worldwide in over 900 offices. Bureau Veritas was founded in 1828.

The project managers within the Capital Projects Design Division should determine the staffing requirements for each project in terms of person hours required for design and construction inspection utilizing the cost of construction guidelines. This should be accomplished in the preparation of the project scoping plan. The Supervising Civil Engineer and the Construction Engineering Manager should utilize the cost of construction guidelines in the preparation of the staffing requirements before the beginning of each fiscal year to determine workload capacity of staff versus the workload represented by the capital projects.

Recommendation #157: The Capital Projects Design Division and the Construction Management Division should utilize cost of construction guidelines to determine the staffing requirements for each capital improvement program project in terms of person hours required for design and construction inspection.

(7) “Billability” Targets Should Be Established for the Engineering Division Staff.

To assure that the staff of the Capital Projects Design Division and the Construction Management Division are efficiently utilized, the Supervising Civil Engineer for the Capital Projects Design Division and the Construction Engineering Manager should set “billability” targets for staff assigned to the design and

construction management / inspection of capital projects. These targets would represent that proportion of their work time that these staff should charge to projects each month. These staff should be “billable” to projects for not less than 125 hours per month or 1,500 hours annually.

The project accounting system should be utilized to monitor the performance of these staff against these targets.

Recommendation #158: “Billability” targets should be established for staff of the Capital Projects Design Division and the Construction Management Division.

Recommendation #159: The project accounting system should be utilized to monitor the performance of the staff of the Capital Projects Design Division and the Construction Management Division against these targets.

(8) The Capital Projects Design Division Should Develop A Bi-Monthly Capital Project Status Report.

The Project Management Institute published a *Guide to the Project Management Body of Knowledge* (PMBOK Guide). Principle 10.5 indicates that among the generally recognized good practice for project management includes the reporting of performance. “Report performance is the process of collecting and distributing performance information including status reports, progress measurements, and forecasts. The performance reporting process involves the periodic collection and analysis of baseline versus actual data to understand and communicate the project progress and performance as well as to forecast the project results.”⁸⁸

The Capital Projects Design Division and the Construction Management Division should collaborate to prepare a bi-monthly capital improvement program

⁸⁸ Project Management Institute, A Guide to the Project Management Body of Knowledge, 2008.

project status report. The report should include a number of data regarding each project including the following:

- Charge number;
- Project number;
- Project title;
- Project description;
- Total budget amount including the original budget and the current revised budget;
- Design budget;
- Design expenditures to date separately identifying staff expenditures from consulting expenditures;
- Construction management expenditures to date separately identifying contract administration, construction inspection, and consulting engineering expenses;
- Construction cost as budgeted; and
- Current construction cost as estimated by the project manager responsible for construction management.
- Design project manager;
- Construction project manager;
- Origination date;
- Design completion date – original and revised;
- Construction start – original and revised:
- Construction end – original and revised; and
- Comments.

These reports should be developed on a bi-monthly basis.

Recommendation #160: The Capital Projects Design Division should prepare a bi-monthly capital improvement program project status report i.e., every two months.

Recommendation #161: The monthly capital improvement program project status report should be updated and posted to the Public Works Department web site each month.

(9) The Capital Projects Design Division and the Construction Management Division Should Prepare a Resource-Loaded Project Schedule For Each Fiscal Year.

The Project Management Institute published a *Guide to the Project Management Body of Knowledge* (PMBOK Guide). Principle 6.5 indicates that among the generally recognized good practices for project management includes the development of a project schedule. The development of a schedule “is the process of analyzing activity sequences, durations, resource requirements, and schedule constraints to create the project schedule. Entering the activities, durations, and resources into the scheduling tool generates a schedule with planned dates for completing project activities. Schedule development can require the review and revision of duration estimates and resource estimates to create an approved project schedule that can serve as a baseline to track progress.”⁸⁹

The audience for this resource-loaded schedule is the Deputy Director of Public Works / City Engineer, the Supervising Civil Engineer, and the Engineering Construction Manager. The resource-loaded schedule is designed to ensure that Engineering Services is capable of meeting its commitments.

Before the beginning of each fiscal year, the Supervising Civil Engineer / Capital Projects Design and the Engineering Construction Manager / Construction Management should prepare a resource loaded project schedule for all of the capital

⁸⁹ Project Management Institute, A Guide to the Project Management Body of Knowledge, 2008.

projects that will be designed and inspected during that fiscal year. The intent of the resource loaded project schedule is to make sure that sufficient staff or consultant resources are available to complete these projects or, if not, to adjust schedules to accommodate the resources available.

An example of the application of cost-of-construction guidelines for the construction management of one capital project is provided in the table below.

1. Project Title	Langsford Road, Todd George to old City Limits
2. Project Description:	This project involves the construction of Langsford Road including a four-lane arterial roadway, curbs and gutters, sidewalks, and major drainage structures.
3. Construction Cost:	\$3,600,000
4. Construction Duration (Months):	15.61
5. Start Date	01-Nov-011
6. Finish Date:	28-Feb-13
7. Complexity:	Average
8: Cost of Construction Guidelines:	
• Construction Inspection	4%
• Construction Management	2%
9. Staff Hours Required	
• Construction Inspection (\$70 / hour)	2,057.14
• Construction Management (\$90 / hour)	800.00
• Total Construction Staff Hours	2,857.14

This analytical effort would need to be completed for each project that would be designed or inspected during the fiscal year. The total staff hours would need to be loaded on a project-by-project basis for the months that the project will be designed or inspected during that fiscal year (although the project could extend beyond the end of that fiscal year). In the example noted above, the project would need to be loaded for the months beginning November 2011 through the end of the fiscal year or June 2012 (although the project would continue until the end of February 2013). A total of 2,057 hours would need to be loaded over a 15 plus month construction schedule or

approximately 132 staff hours per month. This indicates that this project would likely require a full-time Engineering Inspector for the duration of this project.

Recommendation #162: The Supervising Civil Engineer / Capital Projects Design and the Engineering Construction Manager / Construction Management should prepare a resource loaded project schedule for all of the capital projects that will be designed and inspected during that fiscal year.

(10) The Capital Projects Design Division Should Streamline the Project Delivery Methods Used For Small Capital Projects.

Why use streamlined project delivery approaches for small capital projects in San Luis Obispo?

There are a number of examples of capital projects in which the costs of Capital Projects Design and Construction Management staff and the costs of consulting engineers **exceeded the cost of construction** or significantly exceeded the cost of construction guidelines utilized by the Matrix Consulting Group. These examples are provided in the exhibit on the following page.

Important points to note regarding these projects are presented below.

- This represents a total of twenty-nine (29) projects.
- The median actual construction cost of these capital projects amounts to \$48,967. The lowest construction cost amounted to \$1,400, while the largest amounted to \$409,501.
- The median staff and consulting costs for design and construction management of these projects amounted to \$39,482. The lowest staff and consulting costs amounted to \$2,630 and the largest to \$256,374.
- The median percentage of the cost of staff and consulting costs to the cost of construction amounted to 77%. The lowest percentage of the cost of staff and consulting costs to the cost of construction amounted to 50%, while the highest amounted to 265%.

The percentage of the cost of staff and consulting costs to the cost of construction are **unacceptably high. This reflects a project delivery approach that is largely the**

same, regardless of whether the project is small or large in terms of the project construction cost.

This is not a new issue for the Public Works Department. In 2003, the Public Works Department used job order contracting.

Nor is this issue unique to San Luis Obispo. The United States Army Corps of Engineers developed a Small Projects Team Initiative in response to the staff and consulting costs for capital projects being unacceptably high⁹⁰. The candidates for these small projects included:

- Repetitive / routine work;
- Simple / uncomplicated construction work;
- Renovation / remodeling upgrades;
- Detail of the design is sufficient with simplified design measures;
- The preferred project costs less than \$500,000; and
- The projects are largely “maintenance” projects.

⁹⁰ Anthony J. Reed, The Impact of Small Projects Team Initiative on Construction Projects Managed by the United States Army Corps of Engineers, 1998.

Exhibit 15 (1)

**Costs of Capital Projects Design and Construction
Management As % of Construction**

Project	Actual Construction Contract Costs	Total Staff Time Costs	Total Consultant Costs	Total Staff and Consultants	% Cost of Staff / Consultants to Construction Costs
Corp Yard Remodel	\$10,048	\$18,603	\$8,000	\$26,603	265%
Little Theater Walk	\$12,973	\$27,495	\$0	\$27,495	212%
Silt Removal - Sydney Creek	\$1,400	\$2,630	\$0	\$2,630	188%
Play Equipment Replacement	\$24,374	\$30,954	\$0	\$30,954	127%
Laguna Lake Playground	\$40,725	\$48,168	\$0	\$48,168	118%
Water Reuse	\$34,589	\$38,728	\$0	\$38,728	112%
Anholm Park	\$49,664	\$53,159	\$0	\$53,159	107%
ADA Improvements	\$71,659	\$75,681	\$0	\$75,681	106%
Shower and Floor Replace	\$38,660	\$25,272	\$14,210	\$39,482	102%
LLBC Bridge	\$50,018	\$45,404	\$4,535	\$49,939	100%
Bridge Repair Golf Course	\$47,451	\$32,292	\$12,282	\$44,574	94%
Golf Shop Roof Replace	\$33,218	\$19,773	\$8,200	\$27,973	84%
Police Annex Rehab	\$46,094	\$25,272	\$11,700	\$36,972	80%
Transit Main. Facility	\$44,367	\$21,879	\$12,500	\$34,379	77%
Emergency Generators	\$182,387	\$50,661	\$90,102	\$140,763	77%
Senior Center Parking Lot	\$159,581	\$115,011	\$0	\$115,011	72%
WTP Roof	\$63,620	\$30,186	\$12,200	\$42,386	67%
Demo 1049 Orcut Road	\$33,662	\$21,894	\$0	\$21,894	65%
Laguna Lake Hole #3	\$116,831	\$55,169	\$19,084	\$74,253	64%
Laguna Lake Restrooms	\$409,501	\$93,974	\$162,400	\$256,374	63%
Jack House Fire Sprinkler	\$80,896	\$46,566	\$2,792	\$49,358	61%
55 Broad Street	\$38,146	\$22,927	\$0	\$22,927	60%
CMP Replacements	\$49,292	\$16,322	\$13,075	\$29,397	60%
Util Trench Repair	\$100,274	\$57,447	\$0	\$57,447	57%
DI Replacement	\$25,177	\$14,401	\$0	\$14,401	57%

Exhibit 15 (2)

Project	Actual Construction Contract Costs	Total Staff Time Costs	Total Consultant Costs	Total Staff and Consultants	% Cost of Staff / Consultants to Construction Costs
Downtown Street Trees	\$48,967	\$27,729	\$0	\$27,729	57%
PD Roof Replacement	\$66,409	\$26,442	\$10,500	\$36,942	56%
Park Restroom	\$409,081	\$131,472	\$90,000	\$221,472	54%
Mission Lane Storm Drain	\$80,788	\$27,495	\$13,075	\$40,570	50%

The United States Army Corps of Engineers uses a small project design team for project delivery. This team produces simplified design documents that consist of photographs, written descriptions, a limited number of drawings, existing drawings with “pen and ink” changes, reduced size drawings that can be easily photocopied, sketches, etc. Each of these small projects is initiated with a two to four page project management plan that provides the capital project owner and the United States Army Corps of Engineers with a means to visualize the project in terms of schedule, costs, and concept. Upon approval by the capital project owner, a statement of work is generated regarding the scope of work to be completed. Then a procurement method is selected that can range from issuing a purchase order, a job order contract, indefinite delivery / indefinite quantity, etc. A formal bid process is not utilized.

The Capital Projects Design Division should develop alternative project delivery approaches for these small capital projects. This should include the approaches noted below.

- **The Public Works Department should selectively utilize job order contracts.** The previous experience by the San Luis Obispo with job order contracts was not a positive one. However, California Polytechnic San Luis Obispo is using job order contracts successfully. The Supervising Civil Engineer, Construction Management Engineer, and the Administrative Analyst should meet with California Polytechnic San Luis Obispo managers that are using job order contracting, identify the techniques that enable California Polytechnic San Luis Obispo to successfully utilize job order contracting, and develop recommendations for the consideration of the Public Works Director. One apparent advantage of job order contracts over traditional bidding is the elimination of bid solicitation for each project. Individual project contracts, detailed plans and specifications, and bid evaluation are not necessary. Job order contracts projects are determined by a scope of work prepared by the customer and by the Capital projects Design Division. The contractor breaks the project down into tasks and quantities, which are extended by catalog pricing. A fixed fee project proposal is generated after applying the contractor’s adjustment factor. After reviewing the detailed tasks and quantities for

reasonableness, the proposal can be accepted or rejected. This simplified process allows projects to begin within 20 to 30 days from the date of request.

- **The City should pre-qualify contractors for small construction projects.** These contractors would be requested to submit bids based upon the simplified design documents generated by the Capital Projects Design Division.

The City of San Diego uses pre-qualified contractors that become a registered vendor and pre-qualify for small contract bids with the City. This is an example of simplification of the process for small construction contracts.

Contracts would be awarded to these pre-qualified contractors based upon a simplified design process, and the requests for bids from these pre-qualified contractors using a simplified bidding process i.e., issuance of statements of work and requesting bids based upon these statements of work. The pre-qualification of construction contractors would require the preparation and issuance of an invitation for bids. The Department should model their invitation for bid based upon other cities. Once developed, the Department could re-issue the invitation for bids once a year, or, with appropriate provisions in the invitation for bid, once every three years. The initial preparation of the invitation for bids by the Department should require an estimated 40 to 60 staff hours by Engineering Services; subsequent re-issuance of the invitation for bid should require less than 8 hours. The purpose of the use of pre-qualified construction contractors is to avoid preparing formal design and bid documents for each and every small to medium construction contract.

- **The Public Works Department should utilize force account construction.** The City is allowed to utilize its own staff for construction of capital projects that are less than \$25,000. Of the twenty-nine (29) projects listed in the previous table, five were less than \$25,000 or almost \$25,000. These were projects that should have been completed by City staff.
- **The Capital Projects Design Division should simplify the design processes used for small capital projects.** The Division should utilize the types of design approaches utilized by the United States Army Corps of Engineers for small capital projects. This should include simplified design documents that consist of photographs, written descriptions, a limited number of drawings, existing drawings with “pen and ink” changes, reduced size drawings that can be easily photocopied, sketches, etc. These small projects should be initiated with a two to four page project management plan that provides the capital project owner and the Capital Projects Design Division with a means to visualize the project in terms of schedule, costs, and concept. Upon approval by the capital project owner, a statement of work should be generated regarding the scope of work to be completed. Then a procurement method is selected that can range from issuing a purchase order, a job order contract,

indefinite delivery / indefinite quantity, etc. A formal bid process should not be utilized.

Overall, the process used for the design of small capital projects must be greatly simplified. These small capital projects should move to construction with minimal engineering design effort. The Matrix Consulting Group recommends priorities for simplifying the capital project design process as follows:

- The City should use force account construction for capital projects smaller than \$25,000;
- The Capital Projects Design Division should use different and simpler approaches for the design of small capital projects that includes the simplified design documents referenced previously, the project management plan and the statement of work, but not formal bids; and
- The Capital Projects Design Division should utilize pre-qualified contractors for the small capital projects based upon task orders issued by the Division. The City of San Diego uses pre-qualified contractors that become a registered vendor and pre-qualify for small contract bids with the City. This is an example of simplification of the process for small construction contracts.

These small capital projects should spend as little time in the Capital Projects Design Division as possible. These projects should move to the Construction Management Division as soon as possible.

Recommendation #163: The City should use force account construction for capital projects smaller than \$25,000.

Recommendation #164: The Capital Projects Design Division should use different and simpler approaches for the design of small capital projects.

Recommendation #165: The Capital Projects Design Division should utilize pre-qualified contractors for the small capital projects based upon task orders issued by the Division.

(11) The Staff Charges To Capital Projects For Their Design And Construction Should Be Based Upon The Project Accounting System And Not The Cost Allocation Plan.

At the current time, charges for the design and construction management of capital projects are allocated as part of the cost allocation plan, and not based upon the actual costs. This can, potentially, result in funds being charged less or more than the actual costs of design and construction management. It also will better reflect costs incurred by a customer with scope changes or change orders, issues that cannot be anticipated by the cost allocation plan.

When engineering design and construction inspection / management is provided by the Capital Projects Design Division or the Construction Management Division, the costs of design and construction inspection / management should be based upon actual costs as reflected in the project accounting system.

These two Divisions already use project cost accounting. It should be a simple matter to modify the process for allocating costs based upon actual, and not estimated costs **since both Divisions already document and know these costs.**

Recommendation #166: When engineering design and construction inspection / management is provided by the Capital Projects Design Division or the Construction Management Division, the costs of design and construction inspection / management should be based upon actual costs as reflected in the project accounting system, and not the cost allocation plan.

(12) The Process For Approval Of Capital Improvement Project Fund Transfers, And The Review Of The Design Of Capital Improvement Projects Should Be Streamlined.

The processes to approve fund transfers and the review of the design of projects are cumbersome. Examples are provided below.

- The process for review of the draft design of the design of capital improvement

projects is sequential: the project proponent reviews the design, followed by the construction inspector, and the Deputy Director / City Engineer.

- A City Manager Report must be prepared to transfer funding from construction to design. For example, a City Manager Report to approve the transfer \$35,000 from the Street Reconstruction and Resurfacing Master Account to the Chorro Street design phase Project and the transfer of \$45,000 from the Distribution System Improvement Master Account to the Johnson Pavement Repair and waterline Replacement Project required eight different staff to approve.

Overall, these processes serve to complicate and delay the completion of capital projects and should be simplified and streamlined.

A City Manager Report should not be required to be required for fund transfers. These fund transfers should be approved by the Finance Department based upon simplified fund transfer documents, and not a City Manager Report.

The review of the design of capital projects should not be sequential: it should be concurrent.

Recommendation #167: A City Manager Report should not be required to be required for fund transfers. These fund transfers should be approved by the Finance Department based upon simplified fund transfer documents, and not a City Manager Report.

Recommendation #168: The review of the draft design of capital projects should not be sequential: it should be concurrent.

(13) The Construction Contract Change Order Authority Should Be Simplified.

At the present time, change orders in excess of \$25,000 require the approval of the Office of the City Manager. Any change order requires the approval of the Deputy Director / City Engineer,

The City should amend the change order process and delegate limited authority to the Public Works Director, Deputy Director, and the Supervising Civil Engineer / Capital Projects Design Division.

As part of this revised policy and procedure, authority should be delegated to the Supervising Civil Engineer up to a set dollar limit for construction change orders, and to the Deputy Director / City Engineer up to a set dollar limit that is higher than that of the Supervising Civil Engineer. The change order process should be based upon a threshold: once the construction change order reaches a certain dollar or % threshold, it should require the approval of the Deputy Director / City Engineer. The Public Works Director should approve construction change orders once it exceeds another and higher dollar or % threshold. The Public Works Department should not be able to approve any change orders in excess of the contingency. Those change orders should require the approval of the City Council.

This delegation of authority should be formalized in a policy and procedure adopted by the Public Works Department.

Recommendation #169: The City should delegate limited change order authority to the Public Works Director.

Recommendation #170: The change order process should be based upon a threshold: the Supervising Civil Engineer of Capital projects Design should be able to approve construction change orders below a certain dollar or % threshold. Once the construction change order reaches a certain dollar or % threshold, it should require the approval of the Deputy Director / City Engineer. The Public Works Director should approve construction change orders once it exceeds another and higher dollar or % threshold.

Recommendation #171: The Public Works Department should not be able to approve any change orders in excess of the contingency. Those change orders should require the approval of the City Council.

Recommendation #172: The Public Works Director should direct staff, as appropriate, to formalize this delegated authority in a policy and procedure adopted by the Public Works Department.

(14) The Capital Projects Design Division Should Consistently Provide Construction Management And The Capital Project Owner With The Opportunity To Provide 30%, 60%, And 90% Submittal Reviews For Constructability And Maintainability.

Construction Management and the capital project owner are not consistently being provided with the opportunity to conduct constructability reviews of design plans and specifications for capital projects.

Construction Management and the capital project owner should be consistently provided with the opportunity to provide 30%, 60%, and 90% submittal reviews for constructability and maintainability.

- **First / Schematic Submittal Review 30% design complete.** During the first review, a constructability review of the design is required. The project engineer from Capital Projects Design should provide Construction Management and the capital project owner the opportunity to review the plans at 30% completion to cross check the construction plans with the specifications to determine if any conflicts, ambiguities, inaccuracies or deficiencies exist, and to identify construction requirements that are impossible or impracticable to build. A field check should be done to determine if the project can be built where located, and spot check existing topography with what is shown on plans.

Construction Management and the capital project owner first review the plans and specifications to determine that the approach to project construction is feasible and to provide recommendations that may expedite the construction of the project. In conjunction with the first review, a field review is held with Construction Management, the capital project owner and the project engineer from Capital Projects Design. The field reviews examine the preliminary design documents individually prior to jointly reviewing the design in the field. The field review verifies topographic data, adjacent property elevations, and the feasibility of the design relative to existing field conditions. The project engineer from Capital Projects Design should document the field review in writing, noting all comments of the reviewers.

- **Second / Design Development Submittal Review – 60% design complete.** The project engineer from Capital Projects Design provides the Construction Management and the capital project owner with the opportunity to assure that all of the 30% review comments have been incorporated. This review ascertains whether the design is progressing in conformance with the project criteria.

- **Third / Construction Document Submittal Review 90% design complete.** This submittal should provide the Construction Management and the capital project owner with the opportunity to review the final plans for the project. In conjunction with the final plan development during this phase, project engineer from Capital Projects Design should begin finalizing any special provisions required to specify or clarify the construction work elements, completes permit applications and prepares a final quantity estimate, cost estimate and construction schedule, in conjunction with Construction Management and the capital project owner.

A complete set of documents marked “not for construction” is provided to Construction Management and the capital project owner. The review ascertains the accuracy and completeness of the design plans, specifications, quantities and cost estimate. The review also determines the adequacy and consistency of the plans and specifications as bidding documents.

The 30% / 60% / 90% reviews with the Construction Management and the capital project owner should be required as part of a policy and procedure.

Recommendation #173: The Capital Projects Design Division should routinely and consistently conduct 30% / 60% / 90% design plan and specification reviews with Construction Management and the capital project owner.

Recommendation #174: The Public Works Director should direct staff, as appropriate, to develop a policy and procedure for the conduct of the 30% / 60% / 90% design plan and specification reviews with Construction Management and the capital project owner.

- (15) The Capital Projects Design Division Should Ensure That Proposed Capital Projects Contained In Area Plans Are Included In Budget Requests for The Five-Year Capital Improvement Program.**

The Planning Division has developed a number of area plans such as the Orcutt Area Specific Plan. This specific plan contains a number of public facilities including water, wastewater, storm drainage, roads, parks, and miscellaneous improvements proposed. The cost of these improvements amounted to \$14.1 million.

The Capital Projects Division should work with the Planning Division to specifically identify these projects, the funding required for these projects, the source of funding, and then develop capital project budget requests for each of these projects

for each of the area plans. This should be accomplished for the five-year capital improvement budget developed for City Council consideration for fiscal year 2011-12.

Recommendation #175: The Capital Projects Division should work with the Planning Division to specifically identify the capital projects contained in area plans or specific plans, the funding required for these projects, the source of funding, and develop capital project budget requests for the area plans. The Public Works Department should review these requests and the possible projects with the City Council in a goal setting session for the five-year capital improvement program.

(16) The Capital Project Design Division Should Develop and Adopt A Service Level Agreement with the Utilities Department.

Why develop a service level agreement with the Utilities Department?

The Utilities Department represents a little more than 40% of the value of capital projects that were funded in fiscal year 2009-11 (excluding prior year funding).⁹¹ Interviews with the staff of Engineering Services, Public Works Department and the Utilities Department indicated that the customer service provided by Engineering Services, Public Works Department to the Utilities Department could be improved.

If Engineering Services wants to better manage and meet the expectations of the Utilities Department in capital project design and construction inspection / management, a service level agreement (SLA) should be developed and adopted. The SLA should be a negotiated agreement designed to create a common understanding about services, priorities and responsibilities between the Utilities Department and the Public Works Department as it pertains to capital project design and construction inspection / management. An SLA is:

- **A communications tool.** The value of the agreement is not just in the final

⁹¹ The source of this information was an Excel spreadsheet provided by the Public Works Department to the consulting team on February 22, 2011.

product; the very process of establishing an SLA helps to open up communications.

- **A conflict-prevention tool.** An agreement helps to avoid or alleviate disputes by providing a shared understanding of needs and priorities. And if conflicts do occur, they tend to be resolved more readily and with less gnashing of teeth.
- **A living document.** This is one of its most important benefits. The agreement isn't a dead-end document consigned to the "Forget Forever" file. On a pre-determined frequency, the Utilities Department and the Public Works Department should review the agreement to assess service adequacy and negotiate adjustments.
- **An objective basis for gauging service effectiveness.** An SLA ensures that Utilities Department and the Public Works Department use the same criteria to evaluate service quality.

To be effective, the service level agreement should incorporate two elements: service elements and management elements. The service elements clarify service level expectations by communicating such things as:

- The services provided (and perhaps certain services not provided, if customers might reasonably assume the availability of such services);
- Conditions of service availability;
- Service standards, such as the timeframes within which services will be provided;
- The responsibilities of both parties;
- Cost versus service tradeoffs; and
- Change order and scope change procedures.

The management elements focus on such things as:

- How service effectiveness will be tracked;
- How information about service effectiveness will be reported and addressed;
- How service-related disagreements will be resolved; and
- How Engineering Services and the Utilities Department will review and revise

the agreement.

The service level agreement should be utilized to enhance communication between the Utilities Department and the Public Works Department regarding the delivery of capital project design and construction inspection / management services, and the expectations in the delivery of those services.

Recommendation # 176: The Capital Project Design Division should develop and adopt a service level agreement with the Utilities Department regarding the delivery of capital project design and construction inspection / management services.

(17) There Are No Opportunities for Cost Reductions Within Engineering Services Without Reductions In the Level of Service and There Are Not Any Observable Redundancies in Service Delivery.

The City has been in a cost reduction mode for six of the past eight fiscal years. Engineering Services has not been exempt from these reductions. There are no observable opportunities to reduce costs within Engineering Services without reducing levels of service. There are no observed redundancies in Engineering Services. That is Engineering Services is not consistently delivering services that are also delivered by other Divisions in the Public Works Department.

(18) Engineering Services Utilizes Appropriate Equipment and Technology.

Engineering Services is appropriately equipped to conduct its work. It utilizes the same type of equipment that other cities utilize, and that enable its efficient delivery of services. This includes, for example, the use AutoCAD.

10. ENGINEERING DEVELOPMENT REVIEW DIVISION

This chapter presents an analysis of the Engineering Development Review Division including how the Division manages the engineering permitting process, the levels of services provided by the Division, and the level of staffing required for the engineering permitting.

1. THE ENGINEERING DEVELOPMENT REVIEW DIVISION IS AUTHORIZED THREE FULL-TIME STAFF AND A 0.8 FULL-TIME EQUIVALENT TEMPORARY WORKER.

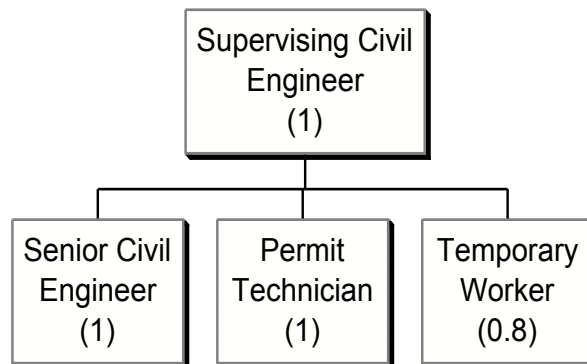
The Engineering Development Review Division is responsible for the design and construction of various public works projects built by private developers for City ownership. These projects typically include additions to the City's water, wastewater, recycled water, storm drain, street, flood protection, and park systems. The Division is also responsible for the review of the design of commercial, industrial and residential private development projects for compliance with the Grading Ordinance, Parking and Driveway Standards, site development and drainage designs. This Division has four major activities as noted below.

- Development review. Reviewing parcel maps, subdivision maps, and subdivision construction plans as required by the Subdivision Map Act; reviewing private building and development project plans for compliance with standards; enforcing FEMA standards which are intended to reduce damage caused by flooding; reviewing of planning applications for the establishment of mitigation measures, conditions and code requirements.
- Encroachment permit review and issuance- Reviewing and approving all encroachments into the public right of way, including: private construction, public capital improvement project construction, construction staging, pedestrian and traffic control plans, utility installation and repair, news racks, and outdoor dining facilities; coordinating with Public Works inspectors

regarding plan requirements, project conditions, compliance with City Engineering Standards and permit conditions; monitoring truck routes and issuing wide-load transportation/trucking permits.

- Recordkeeping. Preparing and filing as-built drawings of private and public works construction; preparing legal descriptions for property transactions; preparing abandonment and easement requests; documenting all construction activities, reports and filings related to the Floodplain Management Regulations.
- Miscellaneous projects. Coordinating miscellaneous engineering activities such as developing downtown pedestrian street lighting standards, implementing National Pollution Discharge Elimination System (NPDES) initiatives, coordinating permit issuance for private utility construction; reviewing of ordinances or guidelines being prepared by other departments or divisions.

A total of three (3) full-time positions and a little more than one-half (0.8) full-time equivalent temporary positions are authorized for the Division. The existing plan of organization for the Division is presented below.



The total FY 2010-11 budget for the Engineering Development Review Division is presented in the table below.

Budget Category	Budget \$	% of Total
Staffing	\$436,900	99.2%
Contract Services	\$1,000	0.2%
Other Operating Expenditures	\$2,600	0.6%
Minor Capital	\$-	0.0%
TOTAL	\$440,500	100.0%

The total 2010-11 budget for Engineering Services amounts to \$440,500.

2. THERE ARE A NUMBER OF POSITIVE CHARACTERISTICS TO THE DELIVERY OF ENGINEERING DEVELOPMENT REVIEW SERVICES.

The diagnostic appraisal of the Public Works Department identified a number of positive characteristics in the delivery of engineering development services. Examples of these positive characteristics are cited below.

- FoxPro is used as the permit information system
- A one-stop shop exists for submittal of all of the City's development review plan applications.
- Cycle time objectives for the processing of the development review applications by the Division have been established.
- Engineering permit processing checklists have been developed for the various types of submittals.
- An inter-departmental development review committee is utilized to coordinate the review and consideration by staff of the development review permits applications.

These are examples of the positive characteristics of the delivery of engineering development services.

3. ANALYSIS OF ORGANIZATIONAL STRUCTURE

The fundamental questions in evaluating organizational structure are the efficiency of the plan of organization, the responsibility and accountability of managers and supervisors. The intent is to ensure the following:

- **The organizational structure fosters accountability.** The organizational structure fosters accountability among management and supervisory staff.
- **The plan of organization enhances communication and coordination.** The number of handoffs/exchanges required among staff providing service to the public or internal clients is minimized.
- **Management and supervisory resources are utilized efficiently.** The plan of organization minimizes administrative overhead.

- **The span of control for any manager or supervisor is not more or less than 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.

These principles were utilized in evaluating the organizational structure of Engineering Development Review.

(1) The Plan of Organization for Engineering Development Review Should Not Be Modified.

Why should an organization be concerned about managerial layers and spans of control?

The City of San Luis Obispo has been challenged fiscally over the past several years to provide a responsive government at a lower cost. As noted in the General Fund Five-Year Fiscal Forecast presented to the Council in October 2010, the City is facing a long-term structural budget gap between revenues and expenditures for the foreseeable future unless corrective action is taken. One of the most effective ways to meet these challenges is to streamline organizational structure through increased spans of control.

At the present time, the Supervising Civil Engineer supervises two (2) full-time and one (1) temporary staff.

Management literature identifies various factors that cause span of control to differ among supervisors and in different organizations. For example, narrower spans of control are appropriate when the nature of work performed is complex, when organizational objectives are unclear, when tasks are uncertain, or risks are high. The chart, below, presents some of the factors that should be considered in evaluating spans of control.

Factor	Narrower Span of Control	Wider Span of Control
Nature of Work	Complex	Not Complex
Similarity of activities performed	Different	Similar
Clarity of organizational objectives	Not Clear	Clear
Degree of task certainty	Fuzzy	Definite Rules
Degree of risk in the work for the organization	High	Low
Degree of public scrutiny	High	Low
Supervisor's qualifications and experience	Weak	Strong
Burden of non-supervisory duties	Heavy	Light
Degree of coordination required	High	Low
Availability of staff assistance	None	Abundant
Qualifications and experience of subordinates	Weak	Strong
Geographic location of subordinates	Dispersed	Together

There are a number of factors in the Engineering Development Review that argue for a wide and for a narrow span of control for the Supervising Civil Engineer as noted below.

- **Wide span of control.** Those factors that suggest a wider span of control is possible include:
 - The activities performed are similar,
 - The organizational objectives are clear,
 - There are definite rules for the tasks performed by the staff of the Division,
 - The staff performs their work at one location, and
 - The qualifications and experience of the Engineering Development Review staff, which are strong,
- **Narrow span of control.** On the other hand, there are factors that suggest the narrow span of control should be continued. These include the risk of the work for the organization, the degree of public scrutiny, the lack of staff assistance available for the Division, the degree of coordination required, and the nature of the work performed by the staff of the Division, which is complex.

A tall, narrow span of control is thought to create slower decisions and sometimes hamper an organization's ability to compete. Narrow spans of control may

be most appropriate in highly technical or specialized areas that require close supervision.

The Matrix Consulting Group utilizes span of control guidelines to shape the discussion and development of recommendations regarding spans of control and management / supervisory layers. These guidelines were developed based upon the research and analysis conducted by a number of other cities and counties that were evaluating the number of management layers and the spans of control in their organizations. These include such cities and counties as Portland, Oregon; King County, Washington; Seattle, Washington; Kansas City, Missouri; etc.

These guidelines recognize situational differences in terms of departmental size, task complexity, etc. The guidelines, for a department such as the Public Works Department with 50 to 150 employees, suggest that not more than four layers of managers and supervisors are appropriate, and that the span of control for the ratio of first-line supervisors to non-supervisors assigned to maintenance should not be lower than 1 to 10 or higher than 1 to 20.⁹²

As these guidelines apply to the Engineering Development Review Division, there are three (3) management and supervisory layers: The Public Works Director, the Deputy Director (City Engineer), and the Supervising Civil Engineer. This falls within the guidelines.

The span of control for the Supervising Civil Engineer is three: two (2) full-time and one (1) temporary staff. (7), and the span of control for the Engineering Construction Manager is five (5). This is less than guidelines suggest as appropriate.

⁹² *City of Portland Span of Control Study*, prepared for the City of Portland Audit Services Division by Public Knowledge, Inc. and The Kemp Consulting Group, 1994.

However, the Supervising Civil Engineer is a “working” supervisor. This is clearly noted in the profile of the Public Works Department, as corrected by the Public Works Department. That corrected profile indicates that the “Supervising Civil Engineer, reporting directly to the Deputy Director, is responsible for facilitating the Department’s Development Review program that includes staff within this Division as well as development review services provided throughout the Department. The Supervising Civil Engineer spends approximately 50% of his available working hours managing the programs and operations of this division and the remaining 50% of his available working hours providing actual development review services in support of staff with emphasis on land use planning.” The actual development review services provided by the Supervising Civil Engineer include plan checking of land entitlement permits, developing correction lists, developing conditions of approval, etc.

The Supervising Civil Engineer is a “working” supervisor. The plan of organization for Engineering Services should not be modified.

Recommendation #177: The plan of organization for the Engineering Development Review Division should not be modified.

Recommendation #178: The Supervising Civil Engineer should continue to be assigned responsibility for providing actual development review services (i.e., plan checking of permits, developing correction lists, developing conditions of approval, etc.) in support of staff.

4. ANALYSIS OF STAFFING

This section provides an analysis of the workload and staffing levels of the Engineering Development Review Division including the potential of alternative service delivery, if any.

(1) The Number of Permits Processed and Issued by the Engineering Development Review Division Has Decreased Over the Past Several Years.

The table below presents workload data for the Engineering Development Review Division.

	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
Permits Issued	347	400	397	450	450	450	290
Improvement Plans and Maps Approved	8	13	13	32	25	25	10
Planning and Building Applications Reviewed	420	495	798	1,002	1,000	850	650
Contract Services Budgeted	\$2,600	\$3,200	\$7,900	\$25,300	\$55,400	\$2,600	\$6,200

Important points to note regarding the table are presented below.

- This data is based upon information supplied by the Public Works Department in an Excel spreadsheet entitled "Analysis 2009." This data was provided to the consulting team by the Public Works Department in November 2010.
- The number of permits issued has decreased by 35% from the peak workload in 2006-07 through 2008-09.
- The number of improvement plans and maps approved has decreased by 69% from its peak in 2006-07.
- The number of building and planning applications reviewed has decreased by 35% from its peak in 2006-07.
- The Engineering Development Review Division does not rely on consulting engineers for plan checking to much extent. In fiscal year 2009-10, the contract services budget amounts to a little more than 1% of the budgeted salaries for the Division.

Overall, the workload experienced by the Division has declined since 2006-07.

The table below presents the workload encountered by the Division in calendar year 2010 with a finer level of breakdown in terms of the types of permits.

Type of Plan Check	2010 Workload
Number of Planning Permits Plan Checks by the Engineering Development Review	130

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Type of Plan Check	2010 Workload
Number of Site / Grading Reviews – New Residential and New Commercial Buildings	125
Number of Site / Grading Review – Residential and Commercial Additional and Alterations	29
Number of Building Permit Plan Reviews	311
Total Plan Reviews	465

Important points to note regarding the table are presented below.

- The site / grading workload and the building permit plan check workload represent the number of “routings” through Engineering Development Review – the 1st check, 2nd check, 3rd check, etc. These do **not** represent individual permits, but the total number of plan checks routed to the Division.
- However, the number of Planning permits represents the individual permits. The Division reviewed 130 Planning permits of all types.
- The Division plan checked approximately 125 new commercial and new residential site / grading plans routed to the Division. This ratio is based upon the proportion of new versus addition and alteration for fiscal year 2008 – 09. (These represent the number of “routings” through Engineering Development Review – the 1st check, 2nd check, 3rd check, etc.)
- The Division plan checked approximately 29 commercial and new residential addition / alteration site / grading plans routed to the Division. This ratio is based upon the proportion of new versus addition and alteration for fiscal year 2008 – 09. (These represent the number of “routings” through Engineering Development Review – the 1st check, 2nd check, 3rd check, etc.)
- The Division plan checked 311 building permit plans ((These represent the number of “routings” through Engineering Development Review – the 1st check, 2nd check, 3rd check, etc.)

This data is based upon a memorandum from the Supervising Civil Engineer for the Engineering Development Review Division to the Deputy Public Works Director dated February 23, 2011.

(2) The Number of Authorized Staff for the Engineering Development Review Division Exceeds Existing Workload.

The roles and responsibilities for the Engineering Development Review Division, as noted in the profile corrected by the Public Works Department are presented below.

- Supervising Civil Engineer, reporting directly to the Deputy Director, is responsible for facilitating the Department's Development Review program that includes staff within this Division as well as development review services provided throughout the Department. The Supervising Civil Engineer spends approximately 50% of his available working hours managing the programs and operations of this division and the remaining 50% of his available working hours providing actual development review services in support of staff with emphasis on land use planning." The actual development review services provided by the Supervising Civil Engineer include plan checking of land entitlement permits, developing correction lists, developing conditions of approval, etc.
- The Senior Civil Engineer position provides development review services in regard to building plans, public improvement plans, final maps, grading and drainage, and the like. The position ensures reviews conform to standard specifications. Development review packages are assembled by the Community Development Department and forwarded to this Division for plan checking.
- The Permit Technician position is currently vacant and is "backfilled" by a temporary full-time employee performing the duties of a Permit Technician
- Temporary worker positions, to include two (2) temporary (.8 FTE) and one (1) full-time contract position (Permit Technician) provide support services to the Supervising Civil Engineer and the Senior Civil Engineer, assisting with basic research and review tasks associated with the development review process. The temporary Permit Technician receives permit information over-the-counter and quality controls submitted information.

The evaluation of workload and associated staffing requirements of the Division was complicated by the manner in which the Division tracks its workload. In some cases, the workload is tracked as the number of plans routed to the Division i.e., grading reviews, building permit reviews. In other instances, the workload is tracked as the number of permits, planning permits. The Division does not track workload by types of permit, either, such as improvement plans for parcel maps, improvement

plans for tract maps, grading plans, final maps, tentative parcel maps, tentative tract maps, FEMA plan checks,

However, from the perspective of the Matrix Consulting Group's, there is insufficient workload to sustain almost four (3.8) full-time positions in the Engineering Development Review Division. This perspective is based upon the points noted below.

- **To evaluate the workload impact of these permits, the consulting team used information provided in an Excel spreadsheet by the Public Works Department in terms of "hours per unit."**⁹³ These "hours per unit" did not cover each of the different types of permits processed by the Division, and, in those instances, the consulting team used its own estimates. These estimates are based upon the experience of the consulting team in conducting user fee studies for other cities in California. The consulting team also used its own estimates in instances in which the amount of staff hours per unit appeared excessive i.e., 187 hours each for a final tract map, 62 hours each for a final parcel map, 85 hours each for an improvement plan, etc.
- **The Supervising Civil Engineer position is underutilized given existing development-related workload.** The Supervising Civil Engineer processed 130 land entitlement permits in 2010. A summary of these applications by type is presented in the table below.

Application Type	Number of Applications	%
Annexations	2	1.5%
Appeals	2	1.5%
Architectural Review	47	36.2%
Condominium	1	0.8%
Density Bonus	1	0.8%
Directors Action (Administrative Approvals)	9	6.9%
Environmental Review	12	9.2%
Fence	5	3.8%
General Plan Amendment	1	0.8%
General Plan Conformity	1	0.8%
General Plan Interpretation	2	1.5%
Lot Line Adjustments	5	3.8%
Modification	2	1.5%
Other	5	3.8%
Planned Development	3	2.3%
Pre-Application Review	1	0.8%
Pre-Zone	1	0.8%

⁹³ Public Works Department, Stats and Fees Updated 12-15-10.

Application Type	Number of Applications	%
Review of Water Efficient Landscape Ordinance	1	0.8%
Rezone	2	1.5%
Secondary Dwelling Unit	1	0.8%
Tentative Parcel Map	7	5.4%
Use Permits - Administrative	14	10.8%
Use Permits - Major	3	2.3%
Variance	2	1.5%
TOTAL	130	100.0%

This data was based upon information provided by the Public Works Department to the consulting team.⁹⁴ Important points to note concerning the table are presented below.

- 36.2% of these permits were architectural reviews;
- 10.8% of these permits were administrative use permits;
- 9.2% of these permits were environmental review;
- 6.9% of these permits were Director's Action permits or administrative approvals; and
- 5.4% of these permits were tentative parcel maps.

Overall, approximately 65% of these Planning permits appear to be minor in nature.

The results of the workload analysis for the Supervising Civil Engineer are presented in the table below.

Application Type	Number of Applications	Hours Per Unit	Total Hours
Annexations	2	17.0	34.0
Appeals	2	1.5	3.0
Architectural Review	47	1.9	89.3
Condominium	1	2.8	2.8
Density Bonus	1	2.5	2.5
Directors Action (Administrative Approvals)	9	2.5	22.5
Environmental Review	12	4.0	48.0
Fence	5	1.0	5.0
General Plan Amendment	1	17.0	17.0
General Plan Conformity	1	17.0	17.0
General Plan Interpretation	2	17.0	34.0
Lot Line Adjustments	5	4.3	21.5

⁹⁴ City of San Luis Obispo, Planning Log 01 / 01 / 2101 through 12 / 31 / 2010 As Revised Dated 02 / 02 / 2011

Application Type	Number of Applications	Hours Per Unit	Total Hours
Modification	2	2.5	5.0
Other	5	2.5	12.5
Planned Development	3	4.0	12.0
Pre-Application Review	1	2.5	2.5
Pre-Zone	1	2.5	2.5
Review of Water Efficient Landscape Ordinance	1	2.5	2.5
Rezone	2	17.0	34.0
Secondary Dwelling Unit	1	1.0	1.0
Tentative Parcel Map	7	5.0	35.0
Use Permits - Administrative	14	2.5	35.0
Use Permits - Major	3	4.0	12.0
Variance	2	1.4	2.8
TOTAL	130		453.4

Important points to note concerning this table are presented below.

- Only 28% of these application types had “hours per unit” defined in the material provided by the Public Works Department to the consulting team. The consulting team utilized estimates based upon its experience in conducting user fee studies for other cities in California for three other types of permits.
- Overall, the Supervising Civil Engineer was allocated approximately 453 hours of application processing workload in 2010.

Altogether, the data indicates that the Supervising Civil Engineer, given existing levels of development workload that have decreased significantly over the past several years, has capacity to absorb a greater amount of workload.

The Public Works Department, in its response to the first draft of the Management and Performance Audit, stated that the report recommends “significant new reporting and other processes for the Supervising Civil. We do not believe that this can be accomplished and there is no hourly workload calculations to support your conclusions.”⁹⁵ In fact, that is one of the prime purposes of acquiring and installing EnerGov: to automate these reporting and other processes so that it does not require significant efforts by the Supervising Civil Engineer.

- **The Senior Civil Engineer is underutilized given existing development-related workload.** The Senior Civil Engineer processed a variety of permits including building permits, tentative tract and tentative parcel maps,

⁹⁵ Public Works Department, “A list of errors and comments about the report, separated by section”, February 13, 2011.

improvement plans, and encroachment permits as necessary. The Public Works Department provided the workload in 2009-10 handled by the Senior Civil Engineer.⁹⁶ A summary of these applications by type is presented in the table below.

Application Type	Number of Applications	%
Improvement Plans	6	1.2%
Building Permit Plans	311	59.7%
Site / Grading Plans - New Residential and Commercial	125	24.0%
Site / Grading Plans - Residential and Commercial Addition and Alteration	29	5.6%
FEMA Plan Review	37	7.1%
Final Map - Parcel	5	1.0%
Final Map - Tract	3	0.6%
Lot Line Adjustment Agreement	5	1.0%
TOTAL	521	100.0%

This data was based upon information provided by the Public Works Department to the consulting team.⁹⁷ Important points to note concerning the table are presented below.

- It is important to note the Division counts workload differently depending upon the type of permit. Building permit plan check workload represents the number of permits “routed” to the Division for plan check – 1st plan check, 2nd plan check, 3rd plan check, etc. Conversely, the number of final maps represents each permit, and not the total number of plan checks i.e., 1st, 2nd, 3rd, etc. It appears that the City’s user fee study documented workload by the number of permits, not the number of plan checks i.e., 1st, 2nd, 3rd, etc.
- Building permits are the most numerous type of permit processed by the Senior Civil Engineer, but do not require the greatest amount of staff hours to plan check as noted in the next table.

Altogether, the data indicates that the Supervising Civil Engineer, given existing levels of development workload that have decreased significantly over the past several years, has capacity to absorb a greater amount of workload.

⁹⁶ Public Works Department, Stats and Fees Updated 12-15-10.

⁹⁷ Memorandum from Hal Hannula to Tim Bochum, “Matrix Public Works and Site / Grading stats”, February 22, 2011, Excel spreadsheet provided by the Public Works Department entitled “Building Permits Issued that were Reviewed by PW for Flood Requirements: 12 / 15 / 2009 to 12 / 15 / 2010”, and Excel spreadsheet provided by the Public Works Department entitled “TB Check- 2010 States and Fees Historical”.

The results of the workload analysis for the Senior Civil Engineer are presented in the table below.

Application Type	Number of Applications	%	Unit	Hours Per Unit	Total Hours
Improvement Plans	6	1.2%	Plan	21.0	126.0
Building Permit Plans	311	59.7%	Plan Check	0.8	248.8
Site / Grading Plans - New Residential and Commercial	125	24.0%	Plan Check	3.6	450.0
Site / Grading Plans - Residential and Commercial Addition and Alteration	29	5.6%	Plan Check	2.2	63.8
FEMA Plan Review	37	7.1%	Plan Check	1.3	46.25
Final Map - Parcel	5	1.0%	Plan	6.0	30.0
Final Map - Tract	3	0.6%	Plan	11.0	33.0
Lot Line Adjustment Agreement	5	1.0%	Agreement	2.5	12.5
TOTAL	521	100.0%			1,010.35

Important points to note concerning this table are presented below.

- Only one of the application types had “hours per unit” adequately defined in the material provided by the Public Works Department to the consulting team: improvement plan.⁹⁸ The grading plan check application type, for example, did not have an “hours per unit” identified in the user fee study; it relied on an estimate of the gross annual hours required. The building plan check application type, for example, appeared to use the number of permits as the unit in the user fee study, while the Division uses the number of plan checks or “routings” as their unit in their workload counts. The improvement plan application type, for example, was allocated anywhere from 21 hours per permit to 85 hours per permit in the user fee study, depending upon which engineering position conducted the plan check. With the exception of the improvement plan application type, the consulting team utilized estimates based upon its experience in conducting user fee studies for other cities in California for the other types of permits.
- The task of evaluating workload and its associated staffing requirements is complicated by the different methodologies the Division utilizes to count workload. In some instances, the Division counts workload by the number of permits. In other instances, the Division counts workload by the number of plan checks or “routings.” Typically, user fee studies count workload by the number of permits.
- Overall, the Senior Civil Engineer was allocated approximately 1,010 hours of application processing workload in 2010.

⁹⁸ Public Works Department, Stats and Fees Updated 12-15-10.

Altogether, the data indicates that the Senior Civil Engineer, given existing levels of development workload that have decreased significantly over the past several years, has capacity to absorb a greater amount of workload.

- **The temporary Permit Technician is underutilized given existing development-related workload.** The temporary Permit Technician is assigned to the public counter to serve the public and applicants on behalf of the Engineering Development Review Division. This service includes receiving permit applications, plan checking and issuing minor permits such as encroachment permits and transportation permits, etc. The amount of workload, in terms of encroachment permits and transportation permits, is presented in the table below.

Type of Permit	#	Hours / Unit	Total
Encroachment Permit - Miscellaneous	47	1.25	58.75
Encroachment Permit - Curb, Gutter, and Sidewalk	100	1.50	150
Encroachment Permit - Trenched Excavation	89	1.20	106.8
Encroachment Permit - Bored Excavation	39	2.60	101.4
Transportation Permit	71	0.60	42.6
Flood Zone Determination	85	0.85	72.25
TOTAL	431		531.8

Important points to note concerning this table are presented below.

- This data was based upon information provided by the Public Works Department to the consulting team.⁹⁹
- The consulting team used the “hours per unit” from the by the Public Works Department to the consulting team with one exception: Encroachment Permits – Miscellaneous. The “hours per unit” in the material provided by the Public Works Department indicated 4.8 hours for each Encroachment Permit – Miscellaneous (in comparison to 2.6 hours for a bored excavation, 1.2hours for a trenched excavation, etc.). The amount of “hours per unit” for Encroachment Permit – Miscellaneous seems excessive in the experience of the consulting team.¹⁰⁰
- Overall, the temporary Permit Technician was allocated approximately 531 hours of application processing workload in 2010.

⁹⁹ Excel spreadsheet provided by the Public Works Department entitled “TB Check- 2010 States and Fees Historical”, and Excel spreadsheet provided by the Public Works Department entitled “Dev Rev Workload.”

¹⁰⁰ Public Works Department, Stats and Fees Updated 12-15-10.

Altogether, the data indicates that the temporary Permit Technician, given existing levels of development workload that have decreased significantly over the past several years, has capacity to absorb a greater amount of workload.

Each of these three (3) positions in the Engineering Development Review Division is underutilized in terms of development-related workload. This is not surprising given what has happened with development in the State and in San Luis Obispo. There are, in addition, two (2) other temporary positions (0.8 full-time equivalent positions) that assist with basic research and review tasks associated with the development review process. There is insufficient workload to warrant the allocation of almost four (3.8) full-time equivalent positions to the Engineering Development Review Division. The Matrix Consulting Group recommends a number of steps to address this imbalance.

- **Eliminate the two (2) other temporary positions (0.8 full-time equivalent positions).** These two (2) other temporary positions that assist with basic research and review tasks associated with the development review process. There is insufficient workload to warrant these two (2) other temporary positions let alone the Supervising Civil Engineer, Senior Civil Engineer, and the temporary Permit Technician positions.
- **Assign the Supervising Civil Engineer a greater proportion of development-related workload.** The Supervising Civil Engineer is underutilized, as noted previously. Additional development-related workload, requiring approximately 500 annual hours should be assigned to the Supervising Civil Engineer. This should include site / grading plans for new development and site / grading plans for additions and alterations.
- **Assign the Senior Civil Engineer on a part-time basis to the Capital Projects Design Division.** The Senior Civil Engineer should be assigned the equivalent of capital project design workload equivalent to 60% of his available work hours. There is more than sufficient workload in capital projects to effectively utilize this position. To balance the split responsibility of this position, the Senior Civil Engineer should have two “office days” each week for engineering development review, and three “office days” for capital project design. At some point in the future, the City will experience a resurgence of development-related workload; at that time, this split responsibility should be

terminated, and the Senior Civil Engineer allocated entirely to duties of the Engineering Development Review Division.

- **The temporary Permit Technician position should be filled permanently, but as an Engineering Technician, and assigned additional development-related workload.** This position needs the capacity to assume work currently performed by the Supervising Civil Engineer and the Senior Civil Engineer that does not require their level of skills and talents. In addition to the existing workload of the Permit Technician, this should include building permit plan checking, FEMA plan review, and processing lot line adjustment agreements. With training, then position could also assume other workload such as site / grading plan review for additions and alterations.

Development-related workload has clearly declined. When that market will recover is anyone's guess. Until then, the Public Works Department should cross-utilize the Senior Civil Engineer in capital Projects Design by reassigning development-related workload to the Supervising Civil Engineer and the proposed Engineering Technician. The annual cost impact of these recommendations is presented in the table below.

Recommendation	Annual Cost Savings	Recommendation	Annual Cost Increase
Eliminate the two (2) temporary positions (0.8 full-time equivalent positions).	\$39,100	The temporary Permit Technician position should be filled permanently, but as an Engineering Technician, and assigned additional development-related workload.	\$14,448

Recommendation #179: Eliminate the two (2) temporary positions (0.8 full-time equivalent positions).

Recommendation #180: Assign the Supervising Civil Engineer a greater proportion of development-related workload.

Recommendation #181: Assign the Senior Civil Engineer on a part-time basis to the Capital Projects Design Division.

Recommendation #182: The temporary Permit Technician position should be filled permanently, but as an Engineering Technician, and assigned additional development-related workload.

(3) The Engineering Development Review Division Should Outsource Peak Development Review Workload to Consulting Engineers to Ensure Its Ability to Meet the City's Permit Cycle Time Objectives.

A best practice identified by the State of Washington in their best practices for Local Government Permitting is to “put provisions in place to maintain performance during high volume periods or quickly add specialty skills when needed. These approaches may include temporary hiring, on-call consultants, contracting out, and interlocal agreements.”¹⁰¹

The Engineering Development Review Division has not put in place these provisions to help it cope with peak workload or to meet specialty skills.

Development workload does not arrive for plan checking by the Engineering Development Review Division evenly spaced throughout the year. The Division cannot control the arrival of permit applications from applicants. At the same time, the Division has adopted service levels for plan checking in terms of cycle time objectives (noted previously). The surges in workload can overwhelm the capacity of the Division, and limit its ability to meet these cycle time objectives. The inability to meet these cycle time objectives has been problematic for the Division over the past five years.

The table below presents the number of plans routed to the Engineering Development Review Division and the number of site / grading routings to the Division.¹⁰²

	First Check		Re-Check	
	Number	Avg. Turnaround	Number	Avg. Turnaround
Site / Grading	468	24.1	574	12.0
Past Due (Included In Total)	296	31.3	285	19.6

¹⁰¹ Washington State Governor's Office of Regulatory Assistance, Local Government Permitting best Practices, August 2008.

¹⁰² This data is based upon the report – Turn-Around Time for Plan Reviews – Sent to Department 01 / 01 / 06 – 12 / 14 / 10 provided by the Engineering Development Review Section

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	First Check		Re-Check	
	Number	Avg. Turnaround	Number	Avg. Turnaround
Above)				
Public Works	685	20.6	850	10.7
Past Due (Included In Total Above)	399	29.8	370	19

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

- 63% of the first plan checks for site / grading applications (grading, drainage, utilities, and site development) exceeded the plan check cycle time objective. The average cycle time for the first plan check was 24 calendar days, but was 31 calendar days for those applications that did not meet the cycle time objective.
- 49% of the rechecks for site / grading applications exceeded the re-check cycle time objective. The average cycle time for the first plan check was 12 calendar days, but was 19 calendar days for those applications that did not meet the cycle time objective.
- 58% of the first plan checks for applications routed to Public Works exceeded the plan check cycle time objective. The average cycle time for the first plan check was 20 calendar days, but was 29 calendar days for those applications that did not meet the cycle time objective.
- 43% of the re- checks for applications routed to Public Works exceeded the plan check cycle time objective. The average cycle time for the re-checks was 10 calendar days, but was 19 calendar days for those applications that did not meet the cycle time objective.

As this data indicates, the Engineering Development Review Division has experienced problems in the past five years meeting the cycle time objectives established for plan checking of plans routed to the Division by the Building and Safety Division and by the Planning Division.

The Supervising Civil Engineer should evaluate the workload faced by the Division on a continual basis, and, if the workload exceeds the capacity of the Division, the Supervising Civil Engineer should outsource the plan checking to consulting engineers. This will require that the Division issue a Request for Proposals

for consulting engineering development review services. The costs of these outsourced plan reviews should be cost-neutral: the fees paid by the applicant should reimburse the cost.

Recommendation #183: The Supervising Civil Engineer for the Engineering Development Review Division should evaluate the workload faced by the Division on a continual basis, and, if the workload exceeds the capacity of the Division, the Supervising Civil Engineer should outsource the plan checking to consulting engineers.

Recommendation #184: The Engineering Development Review Division should issue a Request for Proposals for consulting engineering development review services to enable outsourcing of plan review when the workload exceeds the capacity of the Division.

5. ANALYSIS OF OPERATIONS AND MANAGEMENT

This section provides the project team's analysis of the opportunities for improvement in the operations and management systems for the Engineering Development Review Division.

In conducting this analysis, the project team utilized best practices found in other cities and its own experience in analyzing engineering practices in cities for over thirty (30) years, the best practices cities by other engineering consultants, the practices of other cities with well managed development review programs, and the best practices of the *American Public Works Association*, where available. In almost all instances, the Management Practices recommended within the *Public Works Management Practices Manual* are already in place in the Engineering Development Review Division. However, these Management Practices are limited as it pertains to the development review process. As a consequence, the consulting team utilized best practices developed by other cities and counties and other professional associations. These references are footnoted throughout this section of the report, as appropriate.

(1) The Public Works Department Should Work With the Planning Division To Improve the Criteria For the Land Use Permits Routed To the Engineering Development Review Division.

Why should a planning permit process be streamlined and the number of “handoffs” between the Planning Division and other divisions involved in the discretionary permit process reduced?

Not all permits are alike. Simpler, less complex permits should be treated as if they are simple and less complex. This will reduce the complexity of the process for the applicant and for City staff, and typically reduces the processing time as well.

This has been recognized as a best practice. The State of Massachusetts, in its publication “A Best Practices Model for Streamlined Local Permitting” stated that “best practice allows any regulatory agency to provide for different levels of review depending on clear thresholds of scale or impacts of a project. Specific criteria are identified by the regulatory agency, usually relating to project size or impact and applications are evaluated based on established criteria. Those below the threshold size or impact would receive a less intensive review than those above the threshold. Variations of this include a) the use of performance criteria whereby a project meeting the criteria receives expedited consideration for project approval, and b) a “conformance to- approved plans” criterion where a project that conforms to an approved development or master plan is reviewed only for factors that diverge from the approved plan.”¹⁰³

¹⁰³ Massachusetts Association of Regional Planning Agencies, Best Practices Model for Streamlined Local Permitting, November 2007.

In 2010, the Planning Division routed ~~164~~ 130 land use permits to the Engineering Development Review Division for plan checking. This is an average of a little less than three (3) permits a week.¹⁰⁴

A review of the types of land use permits routed to the Division by the Planning Division indicates that many of these permits should not be routed to the Division, and the process streamlined.¹⁰⁵ (It is important to note that the description in the column “Type Of Application” is all of the information in the Planning Log provided to the consulting team by the Public Works Department.) Examples of these types of permits are presented in the table below.

Date	Type of Application
9-Feb-10	Time Extension per SB 1185 and Assembly Bill 333
14-Jan-10	Request to allow concurrent sales of motor fuel and alcoholic beverages
26-Oct-10	Review of a comprehensive sign program for the main commercial component of the Village at Broad project
2-Apr-10	Minor architectural review of single family residence on vacant lot 8
2-Apr-10	Minor architectural review of single family residence on vacant lot 7
21-Apr-10	Review of building entry restoration on historic Masonic Temple
29-Apr-10	Review of façade remodel for commercial building
27-May-10	Request to replace three antennas on an existing wireless facility light pole at Santa Rosa Park
14-Sep-10	Minor architectural review of façade remodel to downtown commercial building
27-Oct-10	Request for co-location on existing wireless facility at Santa Rosa Park
22-Nov-10	Review of façade remodel to the former Round Table Pizza restaurant building
12-Jul-10	Review of a public art program to paint murals on utility boxes
11 - May - 10	Request to allow front porch and rear master bedroom additions to house
12 - May - 10	Request to add a master bedroom and bath to the rear of the house
07 – Jul – 10	Review of reduced setback for monument sign where 5 feet is normally required
8-Aug-10	Request to eliminate existing second floor landing and relocate stairs to rear on contributing property
24-May-10	Request to allow a six-foot fence above a retaining wall on the rear property line

Based upon a review of the types of land use applications routed to the Engineering Development Review Division, approximately 30% of these permits

¹⁰⁴ This data is based upon a memorandum from the Supervising Civil Engineer for the Engineering Development Review Section to the Deputy Public Works Director dated February 23, 2011.

¹⁰⁵ The source of this data is the Planning Log 01 / 01 / 2010 to 12 / 31 / 2010 as corrected by the Public Works Department and received by the consulting team on February 24, 2011

should not be routed to that Division. These are minor permits that would benefit from standard engineering conditions of approval that would be attached to these types of applications, but not the plan check by the Division.

The Planning Division should develop criteria for the routing of land use permits to the Engineering Development Review Division for those types of permits that would benefit from a plan check. Otherwise, the Planning Division should work with the Division to develop standard conditions and rely on the use and application of these standard conditions.

Recommendation #185: The Planning Division should work with the Public Works Department to revise the criteria for the routing of land use permits to the Engineering Development Review Division to eliminate those types of permits that would not benefit from a plan check by the Engineering Development Review Division.

Recommendation #186: The Planning Division should work with the Engineering Development Review Division to develop standard conditions for those minor land use permits not routed to the Division, and rely on the use and application of these standard conditions.

(3) The Public Works Department Should Work With the Building and Safety Division To Improve the Criteria For Building Permits Routed To the Engineering Development Review Division.

Based upon information provided by the Public Works Department, the Building and Safety Division routed 311 building permits to the Engineering Development Review Division for plan checking.¹⁰⁶ This is an average of six (6) permits a week.

A review of the types of building permits routed to the Division by the Building and Safety Division indicates that some of these permits should not be routed to the Division. Examples of these types of permits are presented in the table below.

¹⁰⁶ Memorandum from Hal Hannula to Tim Bochum, "Matrix Public Works and Site / Grading stats", February 22, 2011

Residential Alteration and Additions to Expand Living Area
Add bed, bath, & office
ADA upgrades @ parking, restrooms, offices, & entrance, fencing, outdoor sales
New Garage & Storage Above
440 Sq Ft Room Addition/Deck Addition
Replace Public Restroom @ Santa Rosa Park
Interior & Partial Exterior Demo, New Windows & Entry, - T.I. New Frontiers
Demolish Non-Residential Building
Revisions to Front Façade
250 square feet Addition/Master Bedroom
933 square feet - Family room, upstairs master/bath
Add Master Bed, Bath, Deck
Demolish Non-Residential Building
Add bedroom at rear
Detached Garage with Guest Room Above
Add Second Floor Beds & Bath
Exterior Remodel
Demolish Single Family Residence at Rear
Re-Roof & Exterior Lighting
Demolish Non-Residential Building - Fire Damage

Based upon a review of the types of building permits routed to the Engineering Development Review Division, 25% of these permits (and possibly more) should not be routed to that Division. These are minor permits that would benefit from standard engineering conditions of approval that would be attached to these types of applications, but not the plan check by the Division. In addition, the Building and Safety Division should be responsible for plan checking for on-site drainage, and not the Engineering Development Review Division.

The Building and Safety Division should develop criteria for the routing of building permits to the Engineering Development Review Division for those types of permits that would benefit from a plan check. Otherwise, the Building and Safety Division should work with the Division to develop standard conditions and rely on the use and application of these standard conditions.

The Public Works Department raised the issue of site / grading plan review. In the Department's response to the first draft of the Management and Performance Audit of the Public Works Department, the Department stated that "on-site drainage conclusion is not reflected in any recommendation. It is significant as far as a recommendation and needs to be addressed / discussed."¹⁰⁷ The Matrix Consulting Group recommends that the responsibility for plan checking of on-site drainage and grading for residential and commercial developments should continue to be plan checked in the Engineering Development Review Division until such time as the Building and Safety Division employs a licensed engineer for plan checking. At that time, a workload assessment should be conducted to evaluate whether the Division is capable of assuming this workload, and eliminate the "handoff" of site / grading plans to the Engineering Development Review Division. An assessment of that workload in the Building and Safety Division is beyond the scope of this Management and Performance Audit i.e., not included in the Request for Proposal issued by the Public Works Department). The consulting team has included the workload requirements associated with site / grading plan review in the staffing assessment of the Engineering Development Review Division.

Recommendation #187: The Public Works Department should work with the Building and Safety Division to develop criteria for the routing of land use permits to the Engineering Development Review Division to eliminate those types of permits that would not benefit from a plan check by the Engineering Development Review Division.

Recommendation #188: The Building and Safety Division should work with the Engineering Development Review Division To Develop Standard Conditions For Those Minor Building Permits Not Routed to the Engineering Development Division, and rely on the use and application of these standard conditions.

¹⁰⁷ Public Works Department, "A list of errors and comments about the report, separated by section", February 13, 2011.

Recommendation #189: The responsibility for plan checking of on-site drainage and grading should continue to be plan checked in the Engineering Development Review Division until such time as the Building and Safety Division employs a licensed engineer for plan checking. At that time, a workload assessment should be conducted to evaluate whether the Division is capable of assuming this workload, and eliminate the “handoff” of site / grading plans to the Engineering Development Review Division.

(4) Application Guides Should Be Enhanced and Additional Guides Developed For the Different Types of Engineering Permits To Include All of the City’s Requirements for an Applicant to Achieve A Complete Submittal.

The County Auditor of King County, Washington conducted a special study that resulted in permitting best practices review for the County’s Department of Development and Environmental Services.¹⁰⁸ One of the best practices identified in this best practices review was the provision of online and / or hard copy application checklists, brochures, and / or maps of the permit review process. This best practice was reinforced by a best practice identified by the State of Washington in their best practices for Local Government Permitting. That best practice stated “ensure complete applications. Define what constitutes a complete application, make this list clear to applicants, and require these items to be present at submittal. Educate applicants so they understand the requirements. Consider input from applicants when setting the requirements.”¹⁰⁹

In fact, the California Government Code Section 65940 requires a public agency to establish one or more lists specifying, in detail, the information required from applicants for a development project.

¹⁰⁸ County Auditor, King County, Washington, Department of Development and Environmental Services Permitting Best Practices Review, 2004.

¹⁰⁹ Washington State Governor’s Office of Regulatory Assistance, Local Government Permitting best Practices, August 2008.

The Engineering Development Review Division has developed and published online some checklists including a final and parcel map checklist, an improvement plan checklist, a lot line agreement submittal checklist, and a communications conduit checklist.

The Engineering Development Review Division should enhance its application guides for **all** of the permit types processed by the Division and should comprehensively identify the submittal requirements necessary for an applicant to achieve a complete submittal. An online tract and parcel map plan check checklist is not available, for example. A grading permit checklist is not available, for example. An encroachment permit checklist is not available, for example.

Examples of the application submittal requirements for grading plan check checklist that should be included in a checklist are presented below.

- All Grading Plans shall be prepared on 24" x 36" size sheets.
- Include the legal description, site address and assessor's parcel number of the property on the plan.
- Label all property lines on the plan or in the legend.
- Show all property line distances and bearings.
- Plot, label and dimension all existing and proposed easements on the plan. Also show any existing or proposed utilities located within these easements or near the site.
- Include a vicinity map showing the site location.
- Include the Bench Mark used as basis of elevations. A City Bench Mark is required. City Bench Marks are available at the Capital Projects Design Division.
- Include a legend on the plan.
- Show a north arrow on the plan which should point toward the top of the sheet

whenever possible.

- Show cut and fills private drainage system, brow ditch, gutter, slope landscaping, and other related quantities on the plan.
- Show the scale of the plan. The scale shall be a graphic bar-type, 1/4" wide and 4" long to accommodate future plan reduction.

In addition, the existing checklists are limited in their utility. The existing improvement plan checklist is one page in length and indicates that the applicant must submit 5 sets of improvement plans including a grading / erosion control plan, landscaping plans, traffic striping and / or signal plans, structural and / or bridge plans, off-site improvements, index map including landscape and other plans, street names, detailed hydrology and hydraulic analysis report, storm water pollution prevention plan, and subdivision final or parcel map when the project is a subdivision. The checklist does not identify the necessary content of these submittals, however.

The improvement plan checklist could be expanded to include such requirements as the plans will be prepared on a 24 x 36 photographic mylar, the plans should include a location map and align the north arrow on both the plan and location map, the plans should show all legend items as presented on the standard plan sheet for private development projects, etc. The intent of these checklists is to clearly identify for the applicant what must be included in the plans **to achieve a complete submittal**.

The Supervising Civil Engineer for the Division should assemble a team of staff for those divisions and Departments involved in the engineering permit process and expand and enhance the current selection of application guides for the various engineering permits that this Division administers. These guides should include the

whole gamut of application requirements, but the Supervising Civil Engineer should exercise authority to assure these requirements are realistic.

The City of Irvine has developed application submittal guidelines for various aspects of engineering permitting. This includes guidelines for preparation of grading plans, street improvement plans, etc. These could serve as a guide for the Division.

Recommendation #190: The Engineering Development Review Division should enhance its existing and develop additional application guides for each of its engineering permits including grading permits, parcel maps, tract maps, public improvement plans, etc.

Recommendation #191: The Engineering Development Review Division should publish the enhanced and additional engineering permit application guides to its web site.

(5) The Engineering Development Review Division Should Plan Check Permits Only for Engineering Standards.

One of the points of feedback received from applicants and from other departments was that the Engineering Development Review Division, in plan checking land use permit applications, provide feedback regarding the building code and uniform fire code.

The Engineering Development Review Division should focus on the engineering standards during land use permit application plan checks, and not provide comments relevant to other division's codes and standards.

Recommendation #192: The Engineering Development Review Division, in plan checking land use permits, should focus on the engineering standards, and not provide comments relevant to other division's codes and standards i.e., building code, uniform fire code, etc.

(6) The Engineering Development Review Division Should Revise and Expand Its Plan Check Cycle Time Objectives.

The Engineering Development Review Division has developed cycle time objectives for engineering permits – final and parcel maps, improvement plans, lot line agreements. The cycle time objective is to return the plan check within six weeks of receiving a complete application.

These cycle time objectives are lengthy in comparison to peers such as the plan check cycle times used by San Jose, California or Sunnyvale, California, for example for final and parcel maps, improvement plans, lot line agreements, etc. The cycle time objective for the completion of the first plan check of final and parcel maps, improvement plans, lot line agreements - in terms of the amount of workdays – should be twenty (20) workdays. Second and subsequent plan checks should be half that amount or ten (10) workdays.

The plan check cycle time for grading permits should be ten (10) workdays for the first plan check; second and subsequent plan checks should be half that amount or five (5) workdays. The plan check cycle time for private utility permits should be five (5) workdays for the first plan check, and half that amount for second and subsequent plan checks should be half that amount or three (3) workdays. The cycle time for traffic impact study plan checks should be ten (10) workdays for the first plan check; second and subsequent plan checks should be half that amount or five (5) workdays.

Recommendation #193: The plan check cycle objectives for the Engineering Development Review Division for final and parcel maps, improvement plans, lot line agreements should be reduced to twenty (20) workdays for first plan check; second and subsequent plan checks should be half that amount or ten (10) workdays.

Recommendation #194: The plan check cycle time for grading permits should be ten (10) workdays for the first plan check; second and subsequent plan checks should be half that amount or five (5) workdays. The plan check cycle time for private utility permits should be five (5) workdays for the first plan check, and half that amount for second and subsequent plan checks should be half that amount or three (3) workdays. The cycle time for traffic impact study plan checks should be ten (10) workdays for the first plan check; second and subsequent plan checks should be half that amount or five (5) workdays.

Recommendation #195: These cycle time objectives should be published to the Division's website and identified in the Division's application guides.

Recommendation #196: The actual cycle time by type of permit should be published to the Division's web site on a quarterly basis.

Recommendation #197: The Supervising Civil Engineer in the Engineering Development Review Division should be held accountable for management of the amount of workdays required by the Division for plan checking and for monitoring performance against the cycle time objectives on a regular basis.

(7) The Supervising Civil Engineer in the Engineering Development Review Division Should Plan, Schedule, and Manage the Processing of Permit Applications by the Division Using the EnerGov Land Management Suite.

The Supervising Civil Engineer should manage the schedule for the processing of permit applications by the Engineering Development Review Division. The specific objectives related to the design and development of this system should be as follows:

- To establish a process whereby specific workday targets are set for each application based upon cycle time objectives established by the Division;
- To balance the case workload among the staff of the Engineering Development Review Division;
- To utilize the EnerGov Land Management Suite to manage the tracking of the timeliness of the processing of engineering permit applications and enable the Supervising Civil Engineer to hold the staff of the Engineering Development Review Division accountable; and
- To generate data sufficient to assist in the assessment of the performance of staff of the Engineering Development Review Division in comparison to the cycle time objectives;

Major elements of the system are presented below.

- Based on the project's complexity, the Supervising Civil Engineer would review incoming applications and analyze application characteristics, focusing in particular on potential processing difficulties. Once difficulties are identified, the Supervising Civil Engineer would (1) set workday targets for completing the analysis of the application, and (2) set overall staff hours allocated to the staff of the Engineering Development Review Division responsible for processing the application. The Supervising Civil Engineer would review the most recent open case inventory report and note the workload of the staff of the Engineering Development Review Division. Cases would then be assigned as appropriate. The Supervising Civil Engineer would then enter the target dates and the name of the staff in EnerGov.
- If the staff of the Division are at capacity in terms of workload, the Supervising Civil Engineer should outsource the plan check of the engineering permit to a consulting engineering firm if the Division will be unable to meet its plan check cycle time objectives.
- When projects are first assigned, the staff of the Engineering Development Review Division to whom the application was assigned would review the working day and staff hour target established for the case. If the staff felt that the targets are unreasonable after a review of the application, the staff should discuss them with the Supervising Civil Engineer and negotiate appropriate changes.
- EnerGov should be utilized to track the extent to which the specific cycle time objectives are met, and to 'red flag' permits that exceed these guidelines.

The Supervising Civil Engineer should be held accountable for the ongoing maintenance of this open case inventory and the completion of the processing of permits in accordance with the cycle time objectives. The planning and scheduling system should be utilized to:

- Evaluate employee performance;
- Balance workload among different staff of the Division; and
- Quantify the anticipated completion date of various applications given all work in progress.

The planning and scheduling system should be designed to manage the workload including reviewing actual progress versus scheduled deadlines, and

facilitate the shifting of work assignments and schedules in the face of changing priorities or workload.

Recommendation #198: The Supervising Civil Engineer should plan, schedule, and manage the processing of permit applications by the Engineering Development Review Division using the EnerGov Land Management Suite.

Recommendation #199: The Supervising Civil Engineer should be held accountable for the ongoing maintenance of this open case inventory and the completion of the processing of permits by their staff in accordance with the cycle time objectives.

(8) The Engineering Development Review Division Should Meet with the Applicant to Discuss Issues That Have Been Found During the Initial Review of the Application for Large, Complex or Potentially Controversial Applications.

Applicants for engineering permit applications, or their representatives, should be invited to meet with the staff of the Engineering Development Review Division to discuss the City's comments to their first plan check. The staff of the Division should inform the applicant face-to-face about basic problems, if any, with the application being deemed complete, preliminary findings, basic conditions that might be imposed, and timing for processing of the application. The meeting should allow the applicant to meet staff members that are working on the application, and staff could hear what goals the applicant might have, and what problems the conditions might cause.

This meeting should be utilized for large, complex or possibly controversial applications.

Recommendation #200: The staff of the Engineering Development Review Division should meet with the applicant for engineering permits to discuss issues that have been found during the first or subsequent plan checks for large, complex or potentially controversial applications.

(9) The Engineering Development Review Division Should Provide Training to Consulting Engineers and Developers Regarding Its Engineering Permit Submittal Requirements.

The Engineering Development Review Division should be proactive and periodically meet with consulting engineers and developers who prepare engineering permit applications for submittal to the Division and discuss engineering permit submittal requirements. As part of this training, the staff should identify for consulting engineers and with developers the most common factors that delay projects. These discussions should also occur after each submittal when consulting engineers are involved in the development of the application and when particular problems are encountered meeting submittal requirements. The training of the consulting engineers and developers should be viewed as an ongoing responsibility, almost like preventive medicine. The intent is to prevent a recurring pattern of incomplete submittals.

It is in the Division's best interests to educate applicants, make them aware of how the Division interprets regulations, provide them with examples of acceptable work, and otherwise help them navigate the process.

Recommendation #201: The Engineering Development Review Division should provide training to consulting engineers and developers regarding its engineering permit submittal requirements.

Recommendation #202: The Engineering Development Review Division should provide feedback and assistance after each submittal when consulting engineers are involved in the development of the application and when they encountered particular problems meeting submittal requirements.

(10) The Top Causes for Engineering Permit Submittals Being Deemed Incomplete at Submittal or Requiring Corrections After the First Plan Check Should Be Published On the Division's Web Site.

The Engineering Development Review Division should publish to its web site a list of the most common corrections encountered during the plan checking of engineering permits. The intent of this information is to assist in the education of applicants and the clarification regarding the most common type of corrections found during the review of engineering permit plans.

Recommendation #203: The Engineering Development Review Division should publish to its web site a list of the most common corrections encountered during the plan checking of engineering permits.

(11) The Engineering Development Review Section Should Periodically Publish Client Assistance Memos to the Division's Web Site And E-Mail These Memo's to Contractors, Consulting Engineers, and Traffic Engineers

The Engineering Development Review Division should publish on a regular basis "Client Assistance Memos" to its web site and e-mail these Client Assistance Memos to consulting engineers, contractors, and traffic engineers that subscribe to these documents. These "Client Assistance Memos" should be designed to provide user-friendly information on the range of Division permitting, engineering permit and standard specification compliance policies and procedures that an applicant may encounter while conducting business with the Division. For example, "Client Assistance Memo's" could include such topics as the following:

- Grading and retaining wall construction near or adjacent to property lines;
- Steps to an approved traffic impact study;
- Making sense of San Luis Obispo's grading, stormwater, and drainage control regulations;
- San Luis Obispo land survey requirements;
- Getting an over-the-counter engineering permit; and

- Construction and development in the floodplain.

The development of these Client Assistance Memos should be based upon the most frequent corrections encountered during plan check, and consultation with contractors, and consulting engineers, and traffic engineers.

Recommendation #204: The Engineering Development Review Division should publish on a regular basis “Client Assistance Memos” to its web site and e-mail these Client Assistance Memos to consulting engineers, contractors, and traffic engineers that subscribe to these documents.

(12) The Engineering Development Review Division Should Utilize the Full Range of Features of the EnerGov Land Management Suite.

Because the investment in the equipment - hardware, software, and training – in EnerGov is substantial, it is essential for the Engineering Development Review Division to leverage its investment and maximize the use of EnerGov. The features of the system that should be utilized by the Division are summarized below.

- **Permit Intake.** The Division staff assigned to intake of engineering permits should continue to be responsible for:
 - Permit initialization, specifically creating permits and entering a "first cut" of information into the folder; and
 - Entering and managing application fee information;

Recommendation #205: The Engineering Development Review Division staff assigned to the engineering permit intake should be responsible for utilizing the EnerGov Land Management Suite for permit initialization, fee information, and updating permits with project information.

- **Staff of the Engineering Development Review Division should use the EnerGov land management Suite to track and monitor cycle time.** Staff of the Division should be responsible for:
 - Subsequent use of the EnerGov Land Management Suite to enter information regarding the permits that the staff are plan checking, insuring that the information in regarding the permit is accurate and precise including the review and correction (if needed) of initialized

information, and revising the project description to accurately describe the permit request and limitations;

- Using the EnerGov Land Management Suite to keep track of review deadlines and to monitor performance; and
- Calculating and entering impact fee charges.

Ultimate responsibility for the use of the EnerGov Land Management Suite lies with the staff of the Division. If these staff effectively utilize the EnerGov Land Management Suite:

- If the staff in the Division responsible for plan checking an engineering permit application is on leave, co-workers can see the status of the file and a chronological record of events;
- Each “To Do List” item is tied to a specific engineering permit application so staff can organize and meet deadlines; and
- Staff can access conditions of approval without checking the paper file.

Recommendation #206: Staff of the Engineering Development Review Division should be held responsible for the quality of information in the EnerGov Land Management Suite for engineering permits and the planning permits and building permits routed to the Division for their review.

- **Automated Checklists.** The EnerGov Land Management Suite should be developed to provide the capacity for building in automated checklists for the processing of engineering permit applications. Automated checklists minimize training for new staff and ensure that mandatory steps are not missed. For each step in the process, the staff of the Division can keep on-line notes describing activity details.

Recommendation #207: The EnerGov Land Management Suite should be developed to provide the capacity for automated checklists for use by the staff of the Engineering Development Review Division.

- **Workflow Management.** EnerGov Land Management Suite should be capable of pre-programmed workflow utilizing processes based on project scope and detailed information entered into the EnerGov Land Management Suite by staff. This should allow for the detailed tracking of in-house plan checks, which would be captured in reports to monitor and track workload. This ensures that projects are not misplaced as each staff member can see what they have in their queue. This data is also used for cycle time performance analysis and workload management.

The Division should utilize EnerGov Land Management Suite automatic notification tools – if available in the EnerGov Land Management Suite, such as automatic emails to the client when plan checks are complete, in order to better keep its customers in touch with the project status.

Recommendation #208: The staff of the Engineering Development Review Division should utilize the EnerGov Land Management Suite to manage workflow. The Division should look for any opportunity in the Suite to automatically update clients with pertinent project information via emails or an online interface.

- **On-Line Access.** Automating the permit process using the EnerGov Land Management Suite opens the door for customer self-service. Simple e-permitting capabilities allow citizens and businesses to use both the Internet to check the status of their permit application or comment on new development projects.

EnerGov likely provides the capacity for the public and for applicants to access the information in the EnerGov Land Management Suite through the Internet. This capacity would make information from the City's permit database accessible via the Internet by permit applicants, residents, and other interested parties.

Recommendation #209: The Engineering Development Review Division should utilize the EnerGov Land Management Suite to provide the capacity for applicants to access data through the Internet or for applicants to subscribe to information.

- **Plan Check, Corrections and Comments.** Once engineering permits have been plan checked, comments should be added to the EnerGov Land Management Suite, shared among the review team, and forwarded to the applicant. This is an essential element of the EnerGov Land Management Suite to facilitate collaboration, integration, and cooperation among staff, applicants, and consulting engineers. Use of the EnerGov Land Management Suite for these comments and corrections provides the potential for 24/7 access to staff, applicants, and consulting engineers.

The Engineering Development Review Division should fully utilize the capacity of the EnerGov Land Management Suite for storing comments and necessary corrections.

Recommendation #210: The Engineering Development Review Division should record plan check corrections and comments in the EnerGov Land Management Suite.

The Public Works Department, in its response to the first draft of the Management and Performance Audit, stated that the report recommends “ significant new reporting and other processes for the Supervising Civil. We do not believe that this can be accomplished and there is no hourly workload calculations to support your conclusions.”¹¹⁰ In fact, that is one of the prime purposes of acquiring and installing EnerGov: to automate these reporting and other processes so that it does not require significant efforts by the Supervising Civil Engineer. Cities with engineering development review functions far larger than San Luis Obispo, have already done this. They have fully developed their automated permit information systems to put information at the fingertips of any staff in their engineering development review function. It does not require intercession by their supervisor or their manager. The reports are automatically generated by the system.

(13) The Engineering Development Review Division Should Enhance Its Cost Recovery.

In 2009-10, the Engineering Development Review Division generated \$415,246 in revenue. Its actual expenditures were \$441,300. The Division’s expenditures exceeded its revenues by \$26,054. Moreover, the Division should recover its direct costs and its indirect costs.

The engineering permit fees should be raised in fiscal year 2011-12 so that the Division can at last recover its direct costs. Once the economy recovers, the engineering permit fees should be raised so that the Division can recover its direct and indirect cost through user fees.

¹¹⁰ Public Works Department, “A list of errors and comments about the report, separated by section”, February 13, 2011.

Recommendation #211: The engineering permit fees should be raised in fiscal year 2011-12 so that the Division can at last recover its direct costs. Once the economy recovers, the engineering permit fees should be raised so that the Division can recover its direct and indirect cost through user fees.

(14) There Are No Opportunities for Cost Reductions Within Engineering Development Review Without Reductions In the Level of Service and There Are Not Any Observable Redundancies in Service Delivery.

The City has been in a cost reduction mode for six of the past eight fiscal years. Engineering Development Review has not been exempt from these reductions. There are no observable opportunities to reduce costs within Engineering Services without reducing levels of service. There are no observed redundancies in Engineering Services. That is, Engineering Development Review is not consistently delivering services that are also delivered by other Divisions in the Public Works Department.

(15) Engineering Development Review Utilizes Appropriate Equipment and Technology.

Engineering Development Review is appropriately equipped to conduct its work. It utilizes the same type of equipment that other cities utilize, and that enable its efficient delivery of services.

11. TRANSPORTATION OPERATIONS DIVISION

This chapter presents an analysis of the Transportation Operations Division. The analysis of the Division includes the Public Works Department's approach to organizing for delivery of traffic and transportation services, the level of staffing allocated to traffic and transportation, and the status of implementation of the long-range plans regarding traffic and transportation.

1. THE TRANSPORTATION OPERATIONS DIVISION IS AUTHORIZED FIVE FULL-TIME STAFF.

The Transportation Operations Division is responsible for the analysis, planning, operations, design and construction of the City's traffic circulation systems. The goals of the Division are (1) safe and well-maintained streets, (2) reduced traffic congestion and air pollution, (3) less use of single-occupant vehicles, (4) increased circulation safety with fewer traffic related collisions, and (5) more walking, bike riding, bus riding, and carpooling. The Transportation Operations Division has two major activities as noted below.

- **Transportation planning.** This major activity encompasses preparing and maintaining the General Plan Circulation Element as required by state law; forecasting future traffic volumes and transit demand; preparing and maintaining Short Range Transit Plans, the Access and Parking Management Plan, the Bicycle Transportation Plan, Neighborhood Traffic Management Guidelines, and the Pedestrian Transportation Plan; planning and recommending capital improvement plan projects and operating program changes needed to implement transportation plans; applying for grants to fund transportation facilities and programs, promoting alternative transportation; promoting technological advancements in fuel-efficiency, emissions control, and communication which reduce the need for travel.
- **Traffic engineering.** This major activity encompasses operating the City's various transportation facilities such as traffic signal systems, recommending and designing improvements to traffic signal and pavement marking systems;

designing transportation facilities, preparing plans, specification, and cost estimates; conducting traffic counts; reviewing accident reports; responding to citizen complaints; mitigating the causes of high collision rates at various locations; analyzing the performance of all transportation modes within the traffic circulation system; reviewing building and development project plans to ensure accommodation of the additional traffic generated.

The Division is authorized five full-time equivalent staff. This staffing allocation is presented in the table below.

Class Title	Number of Authorized Positions
Principal Transportation Planner	1.0
Transportation Operations Manager	1.0
Engineer II	1.0
Engineer II - Contract	0.5
Temporary Workers	1.5
TOTAL	5.0

It is important to note that one (1) of the employees is a contract employee – an Engineer II under contract with the City until June 30, 2011.

The fiscal year 2010-11 annual operating budget for the Transportation Operations Division is presented in the table below.

Cost Activity	FY 2010-11 Budget	% of Total
Staffing	\$500,400	83.84%
Contract Services	\$77,976	13.06%
Other Operating Expenditures	\$18,500	3.10%
Minor Capital	\$-	0%
Total	\$596,876	100.00%

As the table indicates, the total budget for the Division is \$596,876.

2. THERE ARE A NUMBER OF POSITIVE CHARACTERISTICS REGARDING THE TRANSPORTATION OPERATIONS DIVISION.

In evaluating the Transportation Operations Division, the Matrix Consulting Group noted a number of positive characteristics. Examples of these positive characteristics are noted below.

- The Division has developed a Circulation Element, a Bike master Plan, a Signal Master Plan that collectively identify citywide traffic and transportation

deficiencies and weaknesses, and recommends solutions and funding mechanisms for these improvements.

- A traffic mitigation fee has been developed and adopted
- The Division has identified the levels of service (LOS) for the City's signalized intersections. Intersection Level of Service is the standard measure used by most agencies to evaluate intersection operations. Level of service is a letter rating system corresponding to intersection delay—LOS A corresponds to free flow traffic and LOS F indicates extreme congestion. The Circulation Element sets a threshold of LOS C and above, excluding the downtown area. The fiscal year 2008-09 Biennial Traffic Operations Report found that only 5.5% of the seventy-seven (77) intersections that were evaluated did not meet this threshold (see the table below).

Level of Service	Number of Intersections Sorted By Level of Service		Total	%
	Arterial / Arterial Intersections	Arterial / Collector Intersections		
A	11	24	35	47.3%
B	10	13	23	31.1%
C	7	5	12	16.2%
D	0	1	1	1.4%
E	2	1	3	4.1%
TOTAL	30	44	74	100.0%

- The Division has developed and maintains a collision database system that can be utilized to identify high accident intersections.
- On an annual basis, the Division identifies all intersections and half-mile segments with three or more accidents in one year, analyzes the accidents that have occurred at these locations with collision diagramming software, and develops mitigation measures.
- A computer forecasting model is utilized to assess the trips generated by development, model different land use options, develop long-term forecasts of traffic, and the benefits of mitigation measures.

Overall, the Transportation Operations Division fulfills its mission more effectively than that observed by the Matrix Consulting Group in most other cities in which it has analyzed traffic and transportation programs.

3. ANALYSIS OF ORGANIZATIONAL STRUCTURE

The fundamental questions in evaluating organizational structure are the efficiency of the plan of organization, the responsibility and accountability of managers and supervisors. The intent is to ensure the following:

- **The organizational structure fosters accountability** - The organizational structure fosters accountability among management and supervisory staff;
- **The plan of organization enhances communication and coordination** - The number of handoffs/exchanges required among staff providing service to the public or internal clients is minimized;
- **Management and supervisory resources are utilized efficiently** - The plan of organization minimizes administrative overhead.
- **The span of control for any manager or supervisor is not more or less than 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.

These principles were utilized in evaluating the organizational structure of Transportation Operations.

(1) The Plan of Organization for the Transportation Operations Division Should Be Modified.

Why should an organization be concerned about managerial layers and spans of control?

The City of San Luis Obispo has been challenged fiscally over the past several years to provide a responsive government at a lower cost. As noted in the General Fund Five-Year Fiscal Forecast presented to the Council in October 2010, the City is facing a long-term structural budget gap between revenues and expenditures for the foreseeable future unless corrective action is taken. One of the most effective ways to meet these challenges is to streamline organizational structure through increased

spans of control.

At the present time, the Transportation Operations Manager supervises one (1) full-time, one (1) contractual and three (3) temporary staff.

Management literature identifies various factors that cause span of control to differ among supervisors and in different organizations. For example, narrower spans of control are appropriate when the nature of work performed is complex, when organizational objectives are unclear, when tasks are uncertain, or risks are high. The chart, below, presents some of the factors that should be considered in evaluating spans of control.

Factor	Narrower Span of Control	Wider Span of Control
Nature of Work	Complex	Not Complex
Similarity of activities performed	Different	Similar
Clarity of organizational objectives	Not Clear	Clear
Degree of task certainty	Fuzzy	Definite Rules
Degree of risk in the work for the organization	High	Low
Degree of public scrutiny	High	Low
Supervisor's qualifications and experience	Weak	Strong
Burden of non-supervisory duties	Heavy	Light
Degree of coordination required	High	Low
Availability of staff assistance	None	Abundant
Qualifications and experience of subordinates	Weak	Strong
Geographic location of subordinates	Dispersed	Together

There are a number of factors in the Transportation Operations that argue for a wide and for a narrow span of control as noted below.

- **Wide span of control.** Those factors that suggest a wider span of control is possible include:
 - The activities performed are similar,
 - The organizational objectives are clear,
 - There are definite rules for the tasks performed by the staff of the Transportation Operations,
 - The staff performs their work at one location, and

- The qualifications and experience of the Transportation Operations staff, which are strong,
- **Narrow span of control.** On the other hand, there are factors that suggest the narrow span of control should be continued. These include the risk of the work for the organization, the degree of public scrutiny, the lack of staff assistance available for the Division, the degree of coordination required, and the nature of the work performed by the staff of the Division, which is complex.

A tall, narrow span of control is thought to create slower decisions and sometimes hamper an organization's ability to compete. Narrow spans of control may be most appropriate in highly technical or specialized areas that require close supervision.

A wider, flatter configuration means fewer layers of reporting and more subordinates reporting to a supervisor. Wider and flatter organizations tend to have faster decision-making, and improved communication, motivation and morale. Spans of control that are too wide can also create problems such as inconsistent performance and inadequate supervision.

The Matrix Consulting Group utilizes span of control guidelines to shape the discussion and development of recommendations regarding spans of control and management / supervisory layers. These guidelines were developed based upon the research and analysis conducted by a number of other cities and counties that were evaluating the number of management layers and the spans of control in their organizations. These include such cities and counties as Portland, Oregon; King County, Washington; Seattle, Washington; Kansas City, Missouri; etc.

These guidelines recognize situational differences in terms of departmental size, task complexity, etc. The guidelines, for a department such as the Public Works Department with 50 to 150 employees, suggest that not more than four layers of

managers and supervisors are appropriate, and that the span of control for the ratio of first-line supervisors to non-supervisors assigned to maintenance should not be lower than 1 to 10 or higher than 1 to 20.¹¹¹

As these guidelines apply to Transportation Operations, there are three (3) management and supervisory layers: The Public Works Director, the Deputy Director (City Engineer), and the Transportation Operations Manager or the Principal Transportation Planner. This falls within the guidelines.

However, at the present time, the plan of organization for the Transportation Operations Division is fragmented. The Principal Transportation Planner and the Transportation Operations Manager both report to the same Deputy Public Works Director.

In evaluating the plan of organization for the Transportation Operations Division, the Matrix Consulting Group utilized a number of principles for organizational structure. These principles are presented in the paragraphs below.

- **The Transportation Operations Division should be organized on a ‘form follows function’ basis** with a clear, cohesive sense of purpose or mission. Functions should be grouped consistent with their periodic interaction, management systems, delivery of services that are linked in some way, etc., resulting in functional cohesion.
- **The Transportation Operations Division organizational structure should foster accountability.** The organizational structure should foster accountability among supervisory staff.
- **The plan of organization should enhance communication and coordination.** The number of handoffs/exchanges required among different units providing the same service to the public should be minimized. The structure should enhance shared knowledge.

¹¹¹ City of Portland Span of Control Study, prepared for the City of Portland Audit Services Division by Public Knowledge, Inc. and The Kemp Consulting Group, 1994.

- **Staff resources should be utilized efficiently.** The plan of organization should facilitate sharing of workload to maximize the productivity of staff through peaks and valleys and offer cross-functional capabilities.
- **Each function in the Public Works Department should be placed at a level in accordance with its importance in achieving departmental goals.** Units have not been placed too high in the departmental structure or too low relative to their importance.

Overall, there are a number of problems with the existing plan of organization for the Transportation Operations Division. These problems are noted below.

- The Transportation Operations Manager and the Principal Transportation Planner both report to a Deputy Director, Public Works. This places the Deputy Director, Public Works in a position of functioning as the City's traffic engineer. These two functions are not grouped consistent with their periodic interaction, management systems, and delivery of services.
- With both the Transportation Operations Manager and the Principal Transportation Planner both report to a Deputy Director, Public Works, accountability for traffic engineering and transportation planning is placed with the Deputy Director level, not the Division-head level, which is where this responsibility belongs.
- Form does not follow function in the plan of organization for the Transportation Operations Division. Transportation planning is conducted separately from the work performed by the Transportation Operations Manager. Traffic engineering is conducted separately from transportation planning. These two functions are mutually supportive, and the plan of organization could potentially inhibit sharing of knowledge.
- The reporting of both these functions to a Deputy Director places one of these units at a level too high in the departmental structure. One of these units, not two, should report to a Deputy Director, Public Works.

The Matrix Consulting Group recommends that City consolidate these two units. The Transportation Operations Manager position should be upgraded to City Traffic Engineer when the Transportation Operations Manager meets the minimum qualification requirements of the job description for City Traffic Engineer. At that time, the Principal Transportation Planner position should report to the City Traffic Engineer.

The annual fiscal impact of this recommendation in terms of salary and fringe benefits is presented in the table below.

Recommendation	Annual Cost Increase
The Transportation Operations Manager position should be upgraded to City Traffic Engineer when the Transportation Operations Manager meets the qualifications requirements of the job description for City Traffic Engineer.	\$20,600

Recommendation #212: The Transportation Planning Unit and the Transportation Operations Unit should be consolidated under the supervision of a City Traffic Engineer.

Recommendation #213: The Transportation Operations Manager position should be upgraded to City Traffic Engineer when the Transportations Operations Manager meets the minimum qualification requirements of the job description for City Traffic Engineer.

4. ANALYSIS OF STAFFING

This section provides an analysis of the workload and staffing levels of Transportation Operations including the potential of alternative service delivery, if any.

(1) The Contract Engineer Position Should be Fully Funded by the General Fund in Fiscal Year 2011.

The City of San Luis Obispo allocates five (5) full-time equivalent staff to traffic engineering and transportation planning. One (1) of the full-time equivalent temporary employees is a contract employee – an Engineer II under contract with the City until June 30, 2011. The other full-time employees include a Transportation Operations Manager, a Senior Transportation Planner, and an Engineer.

The Transportation Operations Manager has documented the impacts of the loss of this position at the end of June 2011. The impacts are summarized in the sections below.

- “As we discussed at our meeting, current staffing levels in traffic are generally at or above capacity. Over the last ten years significant new staff resource

demands have been added with little no increase in staff resource capacity, notable new demands include 10-15 new traffic signals, 5-10 new centerline miles, new traffic operations program, expansion of the existing traffic safety and NTM programs, bringing signal operations and travel demand modeling in-house, and annexation/development of new residential, commercial, and industrial areas.”

- “With the recent acquisition of highway 227 and impending loss of grant funding for the contract engineer II – Traffic position, we expect that the transportation division will no longer have the capacity to continue various programs while at the same time maintaining core services & regulatory responsibilities.”
- “Table I below is an approximation of current staff resources and minimum staffing requirements in terms of annual staff hours based on industry standards & historical operating levels. It’s important to note that this is an approximately based on annual averages, however, the overall annual staff capacity ratio is an accurate approximation of the division’s capacity to fulfill its core services in addition to sustaining secondary projects and programs.”

Work Activities	Traffic Operations Manager	Engineer (2)	Traffic Interns (2)	Total	% of Total
Administration	408.72	68.12	17.03	493.87	7.3%
Traffic Safety Program	255.45	340.60	340.60	936.65	13.8%
Traffic Operations Program	102.18	170.30	170.30	442.78	6.5%
Neighborhood Traffic Management	85.15	510.90	255.45	851.50	12.5%
Signal Systems	459.81	510.90	34.06	1,004.77	14.8%
Capital projects	85.15	510.90	17.03	613.08	9.0%
Traffic Control	34.06	510.90	34.06	579.02	8.5%
Minor Citizen Requests	17.03	136.24	119.21	272.48	4.0%
Moderate Citizen Requests	17.03	340.60	119.21	476.84	7.0%
Major Citizen Requests	51.09	136.24	68.12	255.45	3.8%
Data Collection and Entry	17.03	102.18	493.87	613.08	9.0%
Transportation Planning	85.15	34.06	17.03	136.24	2.0%
Development Review	85.15	34.06	17.03	136.24	2.0%
TOTAL	1,703.00	3,406.00	1,703.00	6,812.00	100.0%

- “In addition to acquisition of Hwy 227, within the next one to two years grant funding for the Engineer II position will be exhausted causing the Transportation division to operate at approximately 135% of its staff resource capacity. Operating at such low staffing levels would cause a functional deficiency in the division resulting in an inability to effectively manage various

transportation facilities or maintain minimum regulatory requirements. Ultimately this would likely lead to an increase in city-wide traffic congestion & collision rates, jeopardize state and federal grant funding, and potentially expose the City to various liabilities.”

- “Acquisition of Hwy 227 alone has caused the transportation division to operate at approximately 105% of its staffing capacity. Although the effects are not yet apparent because Hwy 227 was just acquired on December 13th, 2010, as staff is currently under the process of converting CalTrans systems to City compatible systems it has become apparent that the transportation division will not likely be able to sustain non-essential programs such as the Neighborhood Traffic Management Program with current staffing levels.”
 - **“Scenario A:** Temporarily suspend the Neighborhood Traffic Management Program and allocate the associated annual savings of \$20,000 plus an additional \$40,000 in yet unidentified funds to maintain the Engineer II position until staff levels can be augmented to restore the NTM program. Essentially suspension of the NTM program is an exchange of existing resources for the core essential service services associated with the newly acquired Hwy 227 such as operations and regulatory requirements. Under this option requests typically addressed under the NTM program will be accommodated as typical citizen requests or under the Traffic Safety or Operations programs.”
 - **“Scenario B:** Terminate the Engineer II position due to exhaustion of grant funding, temporarily suspend the Neighborhood Traffic Management, Bi-Annual Traffic Operations, and Annual Traffic Safety Programs until staff levels can be restored to a level adequate for sustaining those programs, allocate associated savings to contract services for capital projects, and adopt a temporary “receive and file with no action until further notice” policy on non-critical citizen requests until staff levels can be restored. This option represents the transportation division operating at capacity for essential core operational and regulatory services only. Under this option the city would only have the staffing capacity to respond to critical citizen requests therefore any non-critical traffic requests would have to be received and filed with no action until resources can be restored. The City would also no longer have the capacity to sustain the NTM, Traffic Operations, and Traffic Safety programs therefore these programs would have to be suspended until staff resources can be restored; however the division would maintain associated databases for statistics tracking and future reporting.”

The level of Transportation Operations staffing – compared to other cities with comparable population such as Novato, Poway, or Petaluma – is higher. There is

simply no two ways about it. (However, those cities also have lower fatal and injury accident rates than San Luis Obispo as reported by the State Office of Traffic Safety).

However, the level of service provided by the Transportation Operations Division is also high. San Luis Obispo is getting what it pays for. This is evident in the summary of best management practices utilized by the consulting team over the past twenty-years to assess the effectiveness of traffic and transportation programs (see the exhibit following this page.). The Division is operating a well-managed traffic and transportation program that necessitates this high level of staffing.

However, this is not to say there are not challenges. These challenges would be exacerbated in the Engineer II position was eliminated. The challenges identified by the consulting team are summarized below.

- **Additional measures need to be taken by the Division to enhance the safety of vehicular and bicycle traffic in the City.** The Transportation Operations Division is serious about vehicular, pedestrian, and bicyclist safety in San Luis Obispo. This is clear in their publication *2009 Annual Traffic Safety Report*.¹¹² However, more is needed.

The City's injury collision rate is markedly higher than other cities of comparable population as reported by the State Office of Traffic Safety.

The Public Works Department characterized the consulting teams observation, in the 1st draft of the Management and Performance Audit of the Public Works Department, that traffic safety information contained in the Department's 2009 Annual Traffic Safety Report was presented in a vacuum as "rude and inaccurate."¹¹³ The 2009 Traffic Safety Report does include a comparison with national and statewide data. However, it does **not** include a full comparison with data developed and reported by the State Office of Traffic Safety (OTS) including comparisons with other cities of comparable population.

¹¹² San Luis Obispo Traffic Engineering Division and Police Department, 2009 Annual Traffic Safety Report, September 2010

¹¹³ Public Works Department, "A list of errors and comments about the report, separated by section", February 13, 2011.

Exhibit 16 (1)

**Comparison of Transportation Operations
Program to Best Management Practices**

Best Management Practice	Strengths	Opportunities for Improvement
1. The Division has developed a formal written Transportation Master Plan that identifies citywide traffic and transportation deficiencies and weaknesses, and recommends solutions and funding mechanisms for these improvements.	The City has developed and adopted a Circulation Element, a Bike Plan, and a Signal Plan	The Circulation Element is 16 years old.
2. A traffic mitigation fee has been developed and adopted based upon the Transportation Master Plan.	A traffic mitigation fee has been developed and adopted	
3. The Division has developed and identified the levels of service (LOS) for its signalized intersections.	The Division has identified the levels of service (LOS) for its signalized intersections. The Circulation Element sets a threshold of LOS C and above, excluding the downtown area. The fiscal year 2008-09 Biennial Traffic Operations Report found that only 5.5% of the seventy-seven (77) intersections that were evaluated did not meet this threshold. This is an excellent LOS overall.	
4. A total of 95% of all signalized intersections meet the City's LOS standards	The fiscal year 2008-09 Biennial Traffic Operations Report found that only 5.5% of the seventy-seven (77) intersections that were evaluated did not meet this threshold. This is an excellent LOS overall.	
5. The Division has developed and maintains a collision database system that can be utilized to identify high accident intersections.	The Division has developed and maintains a collision database system, updated via joint connection with police database	

Exhibit 16 (2)

Best Management Practice	Strengths	Opportunities for Improvement
6. On an annual basis, the Division identifies all intersections and half-mile segments with three or more accidents in one year, analyzes the accidents that have occurred at these locations with collision diagramming software, and develops mitigation measures.	The Division identifies all intersections and half-mile segments with three or more accidents in one year, analyzes the accidents that have occurred at these locations with collision diagramming software, and develops mitigation measures.	
7. The City's injury collision rate per capita is better than the statewide average of comparable agencies		The City's injury collision rate is worse than the statewide average.
8. The Division improves pedestrian safety and accessibility throughout the City using a variety of measures including improved crossings, more sidewalks, wider sidewalks in commercial areas, and the reduction of pedestrian related collisions. Pedestrian related traffic collisions are lower than the statewide average of comparable agencies.	The Division improves pedestrian safety and accessibility throughout the City using a variety of measures.	
9. The Division calibrates the timing the traffic signals and signal systems on a system wide basis on a three to five year cycle. Traffic signal optimization software is utilized for simulation of optimized timing, field installation, observation and fine-tuning.	The Division evaluates signal timing each year, as reflected in the <i>Traffic Operations Report</i> .	
10. The Division utilizes adaptive traffic signal systems adjust the timing of signals at critical intersections in real-time and provide the automated flexibility to change the timing of signals in response to both daily and seasonal traffic patterns.	The LOS at signalized intersections is excellent overall. An investment in adaptive traffic signal systems would not be an effective investment, given the overall LOS.	The Division does not utilize adaptive traffic signal systems adjust the timing of signals at critical intersections in real-time

Exhibit 16 (3)

Best Management Practice	Strengths	Opportunities for Improvement
11. A computer forecasting model is utilized to assess the trips generated by development, model different land use options, develop long-term forecasts of traffic, and the benefits of mitigation measures.	A computer forecasting model is utilized to assess the trips generated by development - TransCAD	
12. The Division has developed and maintains a traffic signal inventory that encompasses pole types, LED's, signal framework, controller cabinet contents, equipment serial numbers, etc.	The Division has developed and maintains a traffic signal inventory.	
13. The Division has developed a comprehensive inventory of approved signal phasing and timing settings for each intersection using AutoCAD.	The Division has developed a comprehensive inventory of approved signal phasing and timing settings; this is included In the signal management system QUICNet.	
14. The Division updates its traffic counts at the City's critical intersections and approaches once every two years	The Division updates its traffic counts at the City's critical intersections and approaches once every two years	
15. The Division provides facilities that promote bicycling as a viable form of commuting and recreation. The City provides more 0.054 miles of bike lanes to miles of streets.	The Division provides facilities that promote bicycling as a viable form of commuting and recreation. There are 25 miles of bike lanes in San Luis Obispo. The City has 124 centerline miles of streets. This is 0.2 miles of bike line per mile of street.	
16. The Division has developed a General Bikeway Plan so that the City will have a comprehensive and long-range guide for future bicycle planning, design and budgetary decisions	The Division has developed a General Bikeway Plan and conducts bike counts for bicycle planning.	

Exhibit 16 (4)

Best Management Practice	Strengths	Opportunities for Improvement
17. The Division has developed and continues to develop bicycle projects to serve the needs of bicyclists including the installation of bike racks and lockers throughout the City along designated bike routes, addition or enhancement of bike lanes on City streets, construction of bike paths, a signage program to sign bike routes throughout the City, and connect sections of stand alone bike facilities to form continuous bike routes leading to points of interest throughout the City	The Division has developed and continues to develop bicycle projects to serve the needs of bicyclists. The 2009-13 capital improvement program contains \$100,000 in spending for bicycle projects.	
18. The Division conducts traffic alignment studies on an ongoing basis to identify opportunities to improve traffic flow, reduce congestion, etc.	The Division conducts traffic alignment studies as reflected in the Traffic Operations Report.	
19. The Division has developed and maintains a citizen requests program that responds to citizen requests for stop signs, signals, speed bumps in a timely fashion and maintains automated records of these service requests to avoid re-studying the same problem.	The Division has developed and maintains a citizen requests program in FoxPro. Overall, it requires approximately 2 to 3 workdays to acknowledge citizen requests, 1 week to respond to information requests, 2 to 3 weeks to respond with work orders for the street maintenance crews, and 1 to 3 months to respond to major citizen requests.	
20. The Division has and continues to work with the School District to develop a "Suggested Route to School Program."		The Division works with the School District on a case-by-case basis, but has not developed a systematic "Suggested Route to School Program."

Exhibit 16 (5)

Best Management Practice	Strengths	Opportunities for Improvement
21. The Division has developed and supports a transportation demand management (TDM) program to encourage carpooling, trip reduction, the use of mass transit, etc.	The San Luis Obispo Council of Governments provides a Transportation Demand Management (TDM) program including a Regional Rideshare program, coordination and dissemination of information about transportation choices to employers, residents and visitors to encourage citizens to reduce the number of vehicle miles traveled, single occupant vehicle trips as well as reduce air pollution and energy consumption in San Luis Obispo County.	The Division has not developed and does not support a transportation demand management (TDM) program.
22. The Division has developed and the City Council has adopted a formal written Neighborhood Traffic Management and Calming Policy aimed at reducing traffic volumes and speeds on local residential streets carrying 800 or more vehicles per day.	The Division has developed and the City Council has adopted a formal written Neighborhood Traffic Management and Calming Policy	
23. The Division has developed camera-assisted traffic safety system - an automated red light enforcement system at intersections at which motorists entering an intersection while the signal is already red has been problematic.		The Division has not developed camera-assisted traffic safety system.
24. The Division has retrofitted all existing pedestrian push buttons with ADA compliant accessible push buttons.	The Division has retrofitted all existing many pedestrian push buttons with ADA compliant accessible push buttons	The Division estimates it will meet this requirement within the next five years
25. The Division has installed access ramps throughout the City at all locations.	The Capital project Design Division has installed access ramps throughout the City at all locations.	

The OTS indicates that these “rankings were developed so that individual cities could compare their city’s traffic safety statistics to those of other cities with similar-sized populations. Cities could use these comparisons to see what areas they may have problems in and which they were doing well in.”

“The results helped both cities and OTS identify emerging or on-going traffic safety problem areas in order to help plan how to combat the problems and help with the possibility of facilitating grants.”

“In recent years, media, researchers and the public have taken an interest in the OTS Rankings. It should be noted that OTS rankings are only indicators of potential problems; there are many factors that may either understate or overstate a city/county ranking that must be evaluated based on local circumstances.” The OTS noted that “City rankings are for incorporated cities only. County Rankings include all roads – state, county and local – and all jurisdictions – CHP, Sheriff, Police and special.”

There are 98 cities in California with a population of 50,000 to 100,000 that participated in whole or in part in the most recent OTS. The data was collected from victim and collision data from the latest available California Highway Patrol (CHP) Statewide Integrated Traffic Records System (SWITRS) data.

The data for 2009 from the OTS rankings for the City of San Luis Obispo are presented in the table below.

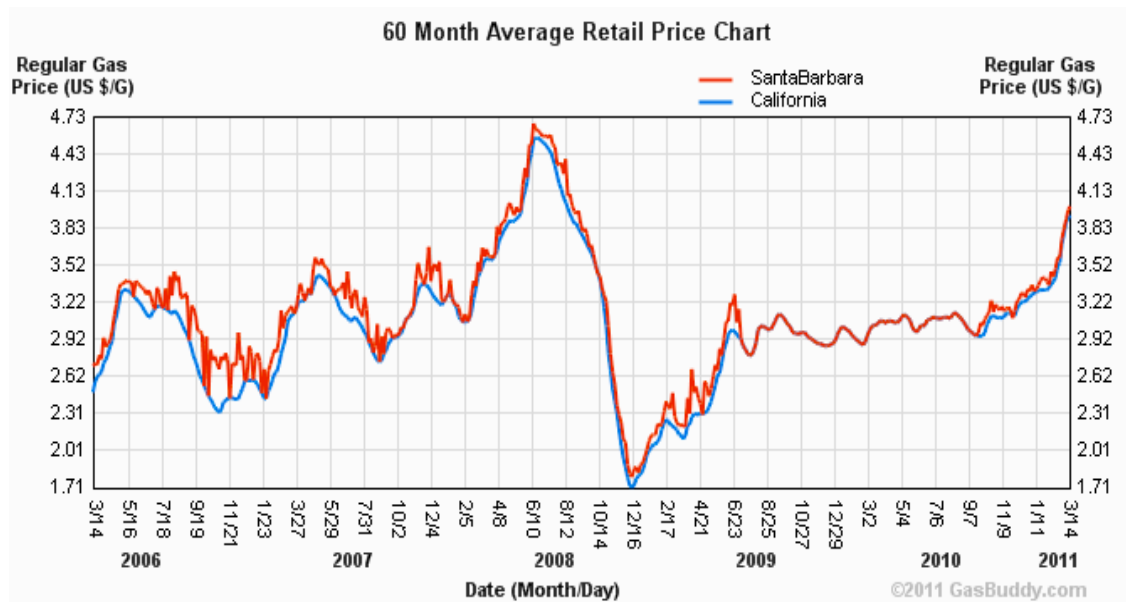
Type of Collision	Victims Killed and Injured	Ranking By Daily Vehicle Miles Travelled	Ranking By Average Population
Total Fatal and Injury	294	12 / 98	8 / 98
Alcohol Involved	29	22 / 98	14 / 98
HBD Driver <21	1	54 / 98	55 / 98
HBD Driver 21 - 34	2	68 / 98	66 / 98
Motorcycles	20	4 / 98	3 / 98
Pedestrians	21	20 / 98	14 / 98
Pedestrians < 15	1	74 / 98	76 / 98
Pedestrians > 65	4	19 / 98	11 / 98
Bicyclists	53	1 / 98	2 / 98
Bicyclist < 15	0	95 / 98	97 / 98
Composite		13 / 98	8 / 98
Type of Collision	Fatal and Injury Collisions	Ranking By Daily Vehicle Miles Travelled	Ranking By Average Population
Speed Related	67	6 / 98	7 / 98
Nighttime (9:00 pm to 2:59 am)	23	16 / 98	9 / 98
Hit and Run	11	28 / 98	29 / 98
DUI Arrests	240	N. A.	78 / 97

Note: According to the OTS website, "For victim and collision rankings, a Population Group Ranking of '1/98' would be assigned to the city with the highest number of victim/collisions per 1,000 residents in population group D, (25,000-50,000), while a ranking of '98/98' would be assigned to the city with the lowest number of victims/collisions per 1000 residents in population group D."

The Transportation Operations Division is clearly and positively impacted injury and fatal collision trends in San Luis Obispo. The trend is clearly downward from 315 collisions in 2004 to 235 in 2009 – a reduction of 25%. However, it is also clear from a comparison to the OTS rankings that much work remains to be done. The elimination of the Engineer II position would not only limit the ability of the Division to continue to address traffic safety, but it is likely that the Division would regress in these efforts.

- **The Division is facing the challenge of using its existing staff resources for the core essential service services associated with the newly acquired Hwy 227 such as operations and regulatory requirements.** Highway 227 was owned and controlled by Caltrans. This meant, of course, that Caltrans highway standards, scheduling and funding dictated the maintenance of Highway 227 through San Luis Obispo. It also meant that Caltrans issued permits for other agency and utility projects that occurred within its right-of-way and decided how and when this work took place. The City recently assumed control of Highway 227. Local control will allow the City to decide the timing for new improvements, work with its own residents and businesses on projects, allow the City to control the timing of the traffic signals in these areas, and potentially opened these areas to aesthetic improvements that Caltrans prohibited. Of course, the City also assumed the responsibility for funding future roadway repairs and traffic and transportation. The elimination of the Engineer II position would not only limit the ability of the Division to address core essential service services associated with the newly acquired Hwy 227 such as operations and regulatory requirements, but it is likely that the Division would regress in these efforts on a citywide basis.
- **The City needs to update its circulation element.** The Transportation Operations Division will, by necessity, be a key player in the update of the circulation element. The elimination of the Engineer II position would not only limit the ability of the Division to participate meaningfully in the update, and limit the ability of the Planning Division to develop a product that provides a long-term traffic and transportation vision for the City.
- **The Division does not provide a travel demand management (TDM) program.** TDM is a series of measures promoting alternatives to the single occupant vehicle for reducing traffic congestion and improving air quality by maximizing the use of the existing transportation infrastructure. These measures include carpooling, vanpooling, transit, walking, bicycling, telecommuting, compressed work weeks, etc.

Why establish a TDM program? The chart, below, presents a five-year trend of gasoline prices for the Santa Barbara area (the closest area to San Luis Obispo for which prices are available on a trend basis.)¹¹⁴ As the chart indicates, since the middle of December 2010, the trend of gas prices has been moving steadily upward.



The primary goal of the TDM program would be to reduce traffic congestion and improve air quality through the reduction of work-related car trips.

The Division could, if it provided this program, provide technical assistance, program development, and implementation services to participating employers such as implementation of a citywide commuter incentive programs for carpooling, vanpooling, transit and a citywide guaranteed ride home program for residents and businesses, coordination and implementation of a city commuter campaigns such as Bike to Work Week, Spare the Air, California Rideshare Week and Vanpool Month, etc. SLOCOG already has invested in TDM techniques by funding the SLO Regional Rideshare program, providing a one-stop shop for transportation information including carpool and vanpool matching, guaranteed ride home and promotions expanding from Bike Month to Rideshare Week. The Division could support this effort within the City itself. The elimination of the Engineer II position would preclude the Division from supporting the developing of a transportation demand program.

- **The Division has not developed a “Suggested Route to School Program.”** The goal of this program is to enhance the safety of elementary school-aged children and their parents, by increasing the awareness of the suggested routes to school. This would include the development of Suggested Routes to School

¹¹⁴ The source of this data is CaliforniaGasPrices.com.

Maps for various public elementary schools located within the City. These maps identify the suggested crossings to be used from each block that is located within the walking school attendance area. The routes are designed to take advantage of adult crossing guards, stop signs, and traffic signals. The Division could obtain grants via the Safe Routes to School (SR2S) program, which is a Caltrans grant program resulting from the 1999 passage and signing of Assembly Bill 1475. It is a safety demonstration program that uses federal transportation funds for construction of school access-related bicycle/pedestrian safety and traffic calming projects. The funds from the Safe Routes to School program could be used for sidewalk upgrades, upgrades of bike lanes, etc. The elimination of the Engineer II position would preclude the Division from proactively developing a "Suggested Route to School Program."

- **The Division has not developed a camera-assisted traffic safety system (CATSS).** Cities have found that the use of camera-assisted traffic safety systems reduce accidents. Ventura reported, for example, that after it installed 17 camera systems to increase traffic safety and reduce injury accidents, it observed a 28% reduction in red light running incidents at the CATSS locations, and a reduction of red light accidents at those CATSS locations of 80% versus a citywide drop in red light collisions of 29%.¹¹⁵ Automated traffic enforcement can increase the reach and presence of enforcement with minimal additional manpower. Photo enforcement is now commonly used to monitor red-light-running, speeding, toll collection, and illegal rail crossings. It could be extended to monitor inappropriate use of high-occupancy-vehicle lanes and noncompliance with commercial vehicle weigh-in-motion.¹¹⁶ The Federal Highway Administration has developed guidelines - *Red Light Camera Systems Operational Guidelines* as has the National Highway Traffic Safety Administration - *Speed Enforcement Camera Systems Operational Guidelines*. The elimination of the Engineer II position would preclude the Division from proactively developing a camera-assisted traffic safety program in cooperation with the Police Department.

Overall, the Transportation Operations Division is doing a good job with its existing allocation of resources. The elimination of the Engineer II position would result in a reduction of existing service levels and preclude the Division from effectively addressing these other challenges.

¹¹⁵ City of Ventura, Renewal of Contract with Redflex Systems, May 2006

¹¹⁶ National Highway Traffic Safety Administration, Technology Applications for Traffic Safety Programs: A Primer, 2008

The cost impact of this recommendation is presented in the table below.

Recommendation	Annual Cost Increase
The contract Engineer Position should be fully funded by the General Fund in fiscal year 2011.	\$90,800

Recommendation #214: The contract Engineer Position should be fully funded by the General Fund in fiscal year 2011.

(2) The Public Works Department Should Not Outsource Core Traffic and Transportation Services.

The Transportation Operations Department provides a full range of “core” services. These core services are presented below.

- Traffic Safety Program
- Traffic Operations Program
- Neighborhood Traffic Management
- Signal Systems
- Capital projects
- Traffic Control
- Minor Citizen Requests
- Moderate Citizen Requests
- Major Citizen Requests
- Data Collection and Entry
- Transportation Planning

The consulting team recommends that these “core” services, in a city with the population of San Luis Obispo, should not be outsourced on an ongoing basis. On a one-time basis, such as the updating of the Circulation Element, outsourcing makes sense. However, these “core” services are an ongoing workload and service demand

within San Luis Obispo. As such, outsourcing would not appear to be a logical approach.

Recommendation #215: The City should not outsource “core” traffic and transportation services except in instances of peak workload or one-time workload such as updating of the Circulation Element.

5. ANALYSIS OF OPERATIONS AND MANAGEMENT

This section provides the project team’s analysis of the opportunities for improvement in the operations and management systems for the Transportation Operations Division.

In conducting this analysis, the project team utilized best practices found in other cities and its own experience in analyzing traffic and transportation practices in cities for over thirty (30) years, the best practices cities by other traffic engineering consultants, and the practices of other cities with well managed traffic and transportation programs. The consulting team could discern few applicable best management practices in the *American Public Works Association’s Public Works Management Practices Manual*. The Management Practices are limited as it pertains to the effective traffic and transportation practices. The *Public Works Management Practices Manual* includes practices that recommend the adoption of policies for street name signs, yield signs, railroad crossing signs, stop line pavement markings, truck routes, roadside memorials, etc.). The *Recommended Practices* developed by the *Institute of Transportation Engineers* are similarly limited, and pertain more to the design of traffic regulatory devices and the practice of traffic and transportation (i.e., Design and Safety of Pedestrian Facilities, Guidelines for Parking Facility Location

and Design, Speed Zone Guidelines, A Proposed Recommended Practice, Traffic and Parking Control for Snow Emergencies, etc.), and not best practices.

(1) The City Should Update the Circulation Element.

The City's existing Circulation Element was adopted on November 29, 1994 or a little more than sixteen (16) years ago. The circulation element is correlated with the land use element and identifies the general location and extent of existing and proposed major thoroughfares, transportation routes, terminals, and other local public utilities and facilities.

Why update the Circulation Element?

Updating the Circulation Element is necessary to maintain a healthy set of policies and goals that are representative of the needs of the community. Moreover, the City's Circulation Element has not kept pace with the change in land uses over the years, which makes it even more important to update. Land use zoning is closely tied to determining traffic volumes on the City's arterial roadway system in the future. The update should consider such issues as understanding changes in traffic patterns, assessing local versus regional traffic issues, development of effective mitigation measures, consistency and coordination with land use plan, trip reduction measures, programs and policies, etc.

As a general rule of thumb, it is important to update components of the General Plan every ten (10) years. State law does not mandate how often the Circulation Element or the General Plan must be updated except for the housing element, which is required to be updated every five years. State law, however, does require that a General Plan be updated periodically so that it remains a true reflection of a

community's values and goals. It should also be updated as needed to update technical information and address locally relevant issues.

There are a number of key issues that need to be addressed in a Circulation Element update as noted below.

- **Understanding changes in traffic patterns** - Significant changes in growth and land use development within the City have resulted in changes to the traffic volumes on the City's arterial street system. It is essential that development and traffic patterns be understood in order to provide a picture of the causes behind projected traffic impacts.
- **Assessing Local versus Regional Traffic Issues** - The City's response to neighborhood concerns with traffic calming measures (such as speed humps) solve the local traffic safety issue by slowing traffic down and/or redirecting it elsewhere within the community. Identifying key roadways for improvement that will address the regional traffic needs is a key issue that should be addressed in the update of the Circulation Element.
- **Consistency and Coordination with Land Use Plan** - While the Land Use Element is not under revision, a new Circulation Element that best reflects the City's land use planning efforts is key. Identification of Smart Growth opportunities, especially along improved bus and rail transit corridors could be a great benefit to the City and its residents.
- **Trip Reduction Measures, Programs and Policies** - The Circulation Element update should also identify "out of the box" programs and policies to foster greater mode choice options and greater flexibility in its approach to quantifying roadway operational standards. Transportation Demand Management measures, creation of development plans along major transit and rail corridors are just a few examples of how this might be achieved.

The estimated one-time cost for updating the circulation element is presented below. The City should confirm this estimate before budgeting funds for the update.

Recommendation	One-Time Cost Impact
The City should update the Circulation Element.	\$300,000

The Circulation Element – at sixteen (16) years of age – is no longer capable of providing a long-term traffic and transportation vision for the City.

Recommendation #216: The City should update the Circulation Element.

(2) The Senior Transportation Planner Should Prepare a Plan of Implementation For the Bicycle Transportation Plan.

A Bicycle Transportation Plan was updated in May 2007. Beyond the goals and objectives contained within the plan, the plan proposed new bikeways, end-of-trip bicycle parking facilities, bicycle parking at transportation hubs, changing and storage facilities, etc.

The Senior Transportation Planner should review the Bicycle Transportation Plan, and prepare a plan of implementation for the plan that includes each recommendation, schedule for implementation, manager accountable implementation of the recommendation, the costs associated with implementation, and funding sources for the capital projects associated with the plan. This plan of implementation should be integrated into the City's five-year capital improvement program budget.

Recommendation #217: The Senior Transportation Planner should review the Bicycle Transportation Plan, each recommendation, schedule for implementation, manager accountable implementation of the recommendation, the costs associated with implementation, and funding sources for the capital projects associated with the master plan. This plan of implementation should be integrated into the City's five-year capital improvement program budget.

(3) The Transportation Operations Division Should Take Additional Measures To Improve The Safety Of Bicyclists, Pedestrians And Motorists.

The Transportation Operations Division is serious about vehicular, pedestrian, and bicyclist safety in San Luis Obispo. This is clear in their publication *2009 Annual Traffic Safety Report*.¹¹⁷ This report includes citywide collision statistics, enforcement statistics, safety investigations, and high collision rate locations. It includes completed safety projects (i.e., reconstructed traffic signals, widening sidewalk and reconfigured

¹¹⁷ San Luis Obispo Traffic Engineering Division and Police Department, 2009 Annual Traffic Safety Report, September 2010

crosswalks, signalized bicycle crossing, etc.). For each of the top five pedestrian, top five bicycle, and top vehicular collision rate locations, measures are recommended to address these collisions albeit in some instances the report indicates “continue to monitor in 2010” as a result of “no discernable pattern.”

More is needed, however, as indicated by data reported by the California Office of Traffic Safety.

The California Office of Traffic Safety publishes data on an annual basis regarding traffic safety. These rankings were developed so that individual cities could compare their city’s traffic safety statistics to those of other cities with similar-sized populations. Cities could use these comparisons to see what areas they may have problems in and which they were doing well in. The results helped both cities and the Office of Traffic Safety identify emerging or on-going traffic safety problem areas in order to help plan how to combat the problems and help with the possibility of facilitating grants.

These victim and collision data for the rankings is taken from the latest available California Highway Patrol (CHP) Statewide Integrated Traffic Records System (SWITRS) data.

San Luis Obispo falls in Group D – the 98 cities with a population of 25,000 to 50,000. The data for 2009 are presented in the table below.

Type of Collision	Victims Killed and Injured	Ranking By Daily Vehicle Miles Travelled	Ranking By Average Population
Total Fatal and Injury	294	12 / 98	8 / 98
Alcohol Involved	29	22 / 98	14 / 98
HBD Driver <21	1	54 / 98	55 / 98
HBD Driver 21 - 34	2	68 / 98	66 / 98
Motorcycles	20	4 / 98	3 / 98
Pedestrians	21	20 / 98	14 / 98

Type of Collision	Victims Killed and Injured	Ranking By Daily Vehicle Miles Travelled	Ranking By Average Population
Pedestrians < 15	1	74 / 98	76 / 98
Pedestrians > 65	4	19 / 98	11 / 98
Bicyclists	53	1 / 98	2 / 98
Bicyclist < 15	0	95 / 98	97 / 98
Composite		13 / 98	8 / 98
Type of Collision	Fatal and Injury Collisions	Ranking By Daily Vehicle Miles Travelled	Ranking By Average Population
Speed Related	67	6 / 98	7 / 98
Nighttime (9:00 pm to 2:59 am)	23	16 / 98	9 / 98
Hit and Run	11	28 / 98	29 / 98
DUI Arrests	240	N. A.	78 / 97

Note: According to the OTS website, "For victim and collision rankings, a Population Group Ranking of '1/98' would be assigned to the city with the highest number of victim/collisions per 1000 residents in population group D, (25,000-50,000), while a ranking of "98/98" would be assigned to the city with the lowest number of victims/collisions per 1000 residents in population group D."

As the table indicates, San Luis Obispo is problematic in many types of collisions relative to other cities with a population of 25,000 to 50,000 when utilizing the ranking by daily vehicle miles traveled. The City is in the top 15% in terms of total fatal and injury collisions, the top 25% in terms of alcohol involved collisions, the top 5% in terms of motorcycle accidents, the top 20% in terms of pedestrian accidents, is the highest city of all of the 98 cities with a population of 25,000 to 50,000 in terms of bicycle collisions, is in the top 10% in terms of speed related collisions, etc.

None of these comparisons bode well for the City of San Luis Obispo.

The Annual Traffic Safety Report, published in 2009, noted that "calendar year 2009 was yet another watershed year for the City's traffic safety program. Total reported collisions were the *lowest* in the 11-year history of the traffic safety program. Collisions in 2009 were about 13% lower than recorded collisions in 2008, and approximately 45% lower than the total recorded in the first year (2002) of the traffic safety program. Injury collisions were down in 2006 by approximately 1%. **These reductions are statistically significant and reflect the effectiveness of the traffic**

safety program. Traffic fatalities in any given year are usually random and there were no traffic fatalities in the City in 2009. Also, no fatalities have been reported on City streets since 2006.”

This report, however, does not evaluate the City’s traffic safety data vis-à-vis other comparably sized cities. The Annual Traffic Safety Report should be modified to include the data from the California Office of Traffic Safety for cities with a population of 25,000 to 50,000 utilizing the ranking by daily vehicle miles traveled.

The City also needs to evaluate the traffic enforcement program delivered by the Police Department. The Traffic Safety Index - the ratio of hazardous citations issued to the number of injury and fatal collisions - is a gauge used by the California Office of Traffic Safety to measure cities’ traffic safety and the effectiveness of their traffic enforcement programs. Hazardous citations include moving violations for traffic offenses, as opposed to non-moving and mechanical violations. Higher index numbers represent greater traffic safety and more effective traffic programs. The City of San Luis Obispo’s index has increased somewhat since 2004. In 2009 the traffic safety index was 8.94.

The Matrix Consulting Group recommends that the Police Department set a goal to increase its traffic enforcement index (total hazardous citations divided by fatal and injury accidents) to 25 from 8.94. The Northwestern University teaches that a minimum traffic enforcement index of 25 is required to reach the citation threshold of effectiveness in reducing traffic collisions. (It is important to remember that the recommended traffic enforcement index is a guide and not necessarily a rule). Other cities have achieved that level. Novato’s current traffic enforcement index is 29.51.

Overall, the Police Department is an essential member of the City's team in reducing the number of vehicular, pedestrian, and bicycle collisions.

The Transportation Operations Division is the other essential member of the City's team in reducing the number of vehicular, pedestrian, and bicycle collisions.

The Division has not been idle in addressing the number of vehicular, pedestrian, and bicycle collisions as is evident in the 2009 Annual Traffic Safety

Report. Table 5-2 on page 24 of the report lists a number of measures taken in 2009 to enhance safety ranging from sight distance improvements, signing and striping configuration improvements, roadway improvements, pedestrian and bicycle improvements, and traffic signal improvements. The Division evaluates intersections on an ongoing annual basis using collision rates (number of collisions per million entering vehicles for intersections and million vehicle miles for segments) to determine locations where more collisions are occurring than would be expected to occur. These locations are then further evaluated to determine what is causing this higher than normal occurrence. Collision diagrams were developed for the top five intersections and also developed for the three segment classifications based on collision rates. Based upon collision patterns as identified in each diagram, mitigation measures and safety improvement recommendations were proposed for each location as outlined in each intersection category.

However, in almost half (43%) of the intersections and segments that were evaluated, the report indicated that no discernable pattern could be detected and that the pattern should continue to be monitored in 2010. The Division, rather than merely monitoring the situation, should work with the Police Department to increase

enforcement in those instances in which a discernable pattern cannot be detected. There are, in addition, additional measures that should be addressed within the *Annual Traffic Safety Report* including speed humps (via the neighborhood Traffic Management Program), speed limit reductions as allowed under AB 2767, a camera-assisted traffic safety system, and expanded use of in-roadway pedestrian warning lights.

The City has challenges with pedestrian, bicyclist and vehicular safety despite the efforts of the Transportation Operations Division. The Transportation Operations Division should develop recommendations for the consideration of the Public Works Director to address these challenges.

Recommendation #218: The Annual Traffic Safety Report should be modified to include the annual traffic safety data, published by the California Office of Traffic Safety, for cities with a population of 25,000 to 50,000 utilizing the ranking by daily vehicle miles traveled.

Recommendation #219: The Police Department should set a goal to increase its traffic enforcement index (total hazardous citations divided by fatal and injury accidents) to 25 from 8.94.

Recommendation #220: The Transportation Operations Division, when it cannot determine a discernable pattern or cause for pedestrian, bicyclist, or vehicular accidents, should work with the Police Department to increase enforcement in those instances.

Recommendation #221: The Transportation Operations Division should develop additional measures within the Annual Traffic Safety Report to reduce pedestrian, bicyclist, or vehicular accidents, including speed humps (via the neighborhood Traffic Management Program), speed limit reductions as allowed under AB 2767, a camera-assisted traffic safety system, and expanded use of in-roadway pedestrian warning lights.

Recommendation #222: The Transportation Operations Division should develop recommendations for the consideration of the Public Works Director to reduce pedestrian, bicyclist, or vehicular accidents.

(3) There Are No Opportunities for Cost Reductions Within the Transportation Operations Division Without Reductions In the Level of Service and There Are Not Any Observable Redundancies in Service Delivery.

The City has been in a cost reduction mode for six of the past eight fiscal years. The Transportation Operations Division has not been exempt from these reductions. There are no observable opportunities to reduce costs within Transportation Operations Division without reducing levels of service. There are no observed redundancies in Transportation Operations Division. That is, the Transportation Operations Division is not consistently delivering services that are also delivered by other Sections in the Public Works Department.

(4) The Transportation Operations Division Utilizes Appropriate Equipment and Technology.

The Transportation Operations Division is appropriately equipped to conduct its work. It utilizes the same type of equipment that other cities utilize, and that enable its efficient delivery of services.

12. TRANSIT DIVISION

This chapter presents an analysis of the Transit Division. The analysis of the Division includes the methodology for delivery of transit services i.e., regionalization, implementation of the recommendations contained in the Triennial Performance Audit of SLO Transit, and fare recovery for the City's transit system.

It should be noted that the Transit Division has been studied previously¹¹⁸ and already has an existing short-term transit plan.¹¹⁹ The consulting team does not intend to replicate ground that has already been covered.

1. THE TRANSIT DIVISION IS AUTHORIZED A LITTLE MORE THAN TWO FULL-TIME STAFF.

The Transit Division is responsible for the management of the City's transit program (SLO Transit) provides daily fixed-route transit service to the general public within the City limits and to Cal Poly State University. This program also includes a downtown trolley service. The three major work activities of the Division are noted below.

- **Vehicle Operations and Maintenance.** Contracting for transit operations, including drivers, fuel, and insurance; contracting for downtown trolley operations, including drivers, fuel, and insurance; contracting for maintenance of City-owned buses and trolleys.
- **Non-vehicle Maintenance.** Maintaining the bus maintenance yard; maintaining shelters, benches, and signs.
- **Administration.** Planning for future service improvements and extensions; complying with state and federal grant requirements; ensuring compliance with taxi franchise provisions; and organizing agendas for Mass Transportation Committee meetings.

¹¹⁸ Majic Consulting Group, Triennial Performance Audit of San Luis Obispo Transit, August 2008

¹¹⁹ Urbitran Associates, Short-Range Transit Plan, May 2009.

The fiscal year 2010-11 budget for the Transit Division is presented below.

Cost Item	Budget	% of Total
Staffing	\$230,300	8.78%
Contract Services	\$1,930,982	73.58%
Minor Operating Expenditures	\$392,900	14.97%
General Carryover	\$70,200	2.67%
Total	\$2,624,382	100.00%

As the table indicates, the fiscal year 2010-11 budget for the Transit Division is \$2,624,382. However, almost 74% of these budgeted expenditures represent contract services.

The Transit Division is authorized a little more than two (2.32) full-time positions and one temporary position. These positions include a Transit Manager, a Transportation Assistant, and a temporary position shared with Transportation Planning that works a little more than ten (10) hours per week for the Transit Division.

2. THERE ARE A NUMBER OF POSITIVE CHARACTERISTICS TO THE OPERATION OF THE TRANSIT DIVISION.

The diagnostic appraisal of the Transit Division indicated a number of positive characteristics. Examples of these positive characteristics are presented below.

- The Transit Division operates as an enterprise fund.
- The Division provides transit data in a number of creative applications including viewing transit data with mobile devices, e-mail, etc.
- The Division has outsourced the operation of the SLO Transit with First Transit.
- The Division utilizes automated vehicle location (AVL) technologies on its buses.
- In completing the roundtrip cycle time analysis, the Division has defined the acceptable level of service for buses that complete their trip or route on time each time as 95% (5 minutes or more late). In other words, 95% of the buses will not arrive at the end of the route after the bus is already scheduled to depart for the next trip. This service level is a contract specification.

- Paratransit services are contracted with the County.
- The Division has developed and the City Council has adopted a 2009 *Short-Range Transit Plan*, a five-year planning document used to analyze service levels, funding, and to provide recommendations for improvement to overall service, stability and growth.
- SLO Transit had a Triennial Performance Audit conducted of its operations: the report was published in August 2008. The audit found that SLO Transit administers Transportation Development Act laws and regulations in an efficient and effective manner and is in full compliance with Transportation Development Act laws and regulations.
- SLO Transit's fare box recovery meets the minimum legal requirement of 20%.

These represent examples of the positive characteristics of the Transit Division.

3. ANALYSIS OF ORGANIZATIONAL STRUCTURE

The fundamental questions in evaluating organizational structure are the efficiency of the plan of organization, the responsibility and accountability of managers and supervisors. The intent is to ensure the following:

- **The organizational structure fosters accountability** - The organizational structure fosters accountability among management and supervisory staff;
- **The plan of organization enhances communication and coordination** - The number of handoffs/exchanges required among staff providing service to the public or internal clients is minimized;
- **Management and supervisory resources are utilized efficiently** - The plan of organization minimizes administrative overhead.
- **The span of control for any manager or supervisor is not more or less than 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.

These principles were utilized in evaluating the organizational structure of the Transit Division.

(1) The Plan of Organization for the Transit Division Should Not Be Modified.

Why should an organization be concerned about managerial layers and spans of control?

The City of San Luis Obispo has been challenged fiscally over the past several years to provide a responsive government at a lower cost. As noted in the General Fund Five-Year Fiscal Forecast presented to the Council in October 2010, the City is facing a long-term structural budget gap between revenues and expenditures for the foreseeable future unless corrective action is taken. One of the most effective ways to meet these challenges is to streamline organizational structure through increased spans of control.

At the present time, the Transit Manager supervises one (1) Transportation Assistant, and a temporary position shared with Transportation Planning that works ten (10) hours per week for the Transit Division. However, the Transit manager also supervises a large contract for operation of the transit system and maintenance of buses.

Management literature identifies various factors that cause span of control to differ among supervisors and in different organizations. For example, narrower spans of control are appropriate when the nature of work performed is complex, when organizational objectives are unclear, when tasks are uncertain, or risks are high. The chart, below, presents some of the factors that should be considered in evaluating spans of control.

Factor	Narrower Span of Control	Wider Span of Control
Nature of Work	Complex	Not Complex
Similarity of activities performed	Different	Similar
Clarity of organizational objectives	Not Clear	Clear

Factor	Narrower Span of Control	Wider Span of Control
Degree of task certainty	Fuzzy	Definite Rules
Degree of risk in the work for the organization	High	Low
Degree of public scrutiny	High	Low
Supervisor's qualifications and experience	Weak	Strong
Burden of non-supervisory duties	Heavy	Light
Degree of coordination required	High	Low
Availability of staff assistance	None	Abundant
Qualifications and experience of subordinates	Weak	Strong
Geographic location of subordinates	Dispersed	Together

There are a number of factors in the Transit Division that argue for a wide and for a narrow span of control as noted below.

- **Wide span of control.** Those factors that suggest a wider span of control is possible include:
 - The activities performed are similar,
 - The organizational objectives are clear,
 - There are definite rules for the tasks performed by the staff of the Transit Division,
 - The staff performs their work at one location, and
 - The qualifications and experience of the Transit Division staff, which are strong,
- **Narrow span of control.** On the other hand, there are factors that suggest the narrow span of control should be continued. These include the risk of the work for the organization, the degree of public scrutiny, the lack of staff assistance available for the Division, the degree of coordination required, and the nature of the work performed by the staff of the Division, which is complex.

A tall, narrow span of control is thought to create slower decisions and sometimes hamper an organization's ability to compete. Narrow spans of control may be most appropriate in highly technical or specialized areas that require close supervision.

A wider, flatter configuration means fewer layers of reporting and more subordinates reporting to a supervisor. Wider and flatter organizations tend to have

faster decision-making, and improved communication, motivation and morale. Spans of control that are too wide can also create problems such as inconsistent performance and inadequate supervision.

The Matrix Consulting Group utilizes span of control guidelines to shape the discussion and development of recommendations regarding spans of control and management / supervisory layers. These guidelines were developed based upon the research and analysis conducted by a number of other cities and counties that were evaluating the number of management layers and the spans of control in their organizations. These include such cities and counties as Portland, Oregon; King County, Washington; Seattle, Washington; Kansas City, Missouri; etc.

These guidelines recognize situational differences in terms of departmental size, task complexity, etc. The guidelines, for a department such as the Public Works Department with 50 to 150 employees, suggest that not more than four layers of managers and supervisors are appropriate, and that the span of control for the ratio of first-line supervisors to non-supervisors assigned to maintenance should not be lower than 1 to 10 or higher than 1 to 20.¹²⁰

As these guidelines apply to Transit Division there are three (3) management and supervisory layers: The Public Works Director, the Deputy Director (Transportation), and the Transit Manager. This falls within the guidelines.

The Transit Manager, however, only supervises one (1) Transportation Assistant, and a temporary position shared with Transportation Planning that works ten (10) hours per week for the Transit Division. However, the Transit Manager also

¹²⁰ *City of Portland Span of Control Study*, prepared for the City of Portland Audit Services Division by Public Knowledge, Inc. and The Kemp Consulting Group, 1994.

supervises a large contract for operation of the transit system and maintenance of buses. This contractor is staffed with thirty-five (35) employees including one (1) manager, two (2) maintenance staff, two (2) supervisors, three (3) dispatchers, twenty-two (22) full-time drivers, and several temporary drivers. The Transit Manager supervises what would be the equivalent of 60% of the full-time employees in the Public Works Department.¹²¹

Overall, there should not be any modifications made to the plan of organization of the Transit Division.

Recommendation #223: The plan of organization for the Transit Division should not be modified.

4. ANALYSIS OF STAFFING

This section provides an analysis of the workload and staffing levels of the Transit Division including the potential of alternative service delivery, if any.

(1) In the Short-Term, the Number of Authorized Positions for the Transit Division Should Be Maintained.

Previous studies and plans prepared for the City's Transit Division have evaluated the costs of operation and the staffing levels for the Transit Division. The *Triennial Performance Audit* and the *Short-Range Transit Plan* did not recommend additional staffing for the Division.

The Matrix Consulting Group does not recommend additional staff in the short-term either. However, the number of authorized positions for the Transit Division is less than some small transit agencies in California as noted in the table below.

¹²¹ This is based upon the full-time staff authorized for the Public Works Department and noted on page H-21 of the City's fiscal year 2009-11 annual operating budget, excluding the GIS employees reassigned to Information Technology since the budget was adopted.

City	Number of Authorized Positions	Annual Ridership
Lodi	3	200,000
Union City	3	482,353
Redondo Beach	3	400,000
San Luis Obispo	2	1,000,000

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

- The consulting team intentionally utilized cities that have outsourced the operation (but not the management) of their transit systems, like San Luis Obispo. That resulted in some comparable systems, such as Santa Maria, being excluded.
- Each of the three comparison cities were identified as “Small Transit Operators” by the California Transit Association. That was why these agencies were chosen for comparison as opposed to Santa Monica or Santa Cruz, which were identified as “Medium Size Operators.” The California Transit Association also identified San Luis Obispo as a “Small Transit Operator”.
- Each of these agencies has one more position than the Transit Division, although these agencies have far less annual ridership.

However, as will be noted in the next section of this chapter, the consulting team does recommend that the Transit Division retain a consulting firm to develop a marketing plan, and assist in its implementation. The long-term implementation of that marketing plan may require additional staffing if the marketing efforts prove successful in increasing ridership.

The consulting team is hesitant to recommend additional staffing when the *Short-Term Transit Plan Update* concluded, in its peer review, that “SLO Transit did not perform as well in terms of cost efficiency. SLO Transit’s cost per vehicle mile of \$6.95 ranked last in the peer group. As was previously mentioned, this is an important consideration given that the contract with the private sector operator to provide SLO

Transit service is based on a per vehicle mile payment. SLO Transit did better in the cost per vehicle hour indicator, ranking fifth of nine peers at \$76.56 per hour, but well above the peer average of \$65.37 per hour.”¹²²

Before adding an ongoing operating cost, the Division should first be sure that it would contribute to an increase in ridership. This may be problematic since the same *Short-Term Transit Plan Update* concluded that “SLO Transit performed best in the area of passenger productivity, ranking third in passengers per vehicle revenue hour and fourth in passengers per vehicle revenue mile. SLO Transit’s performance was above the peer average in both passenger productivity categories, suggesting that SLO Transit is doing a good job in meeting the transit needs of the community.”

If the Division can demonstrate that the development and implementation of a marketing plan substantively increases ridership, then the City should authorize an additional position to enhance marketing of the Transit Division to enhance the use of and ridership of SLO Transit.

Recommendation #224: The existing amount of authorized positions within the Transit Division should be maintained.

Recommendation #225: If the Division can demonstrate that the development and implementation of a marketing plan substantively increases ridership, then the City should authorize an additional position to enhance marketing of the Transit Division to enhance the use of and ridership of SLO Transit.

(2) The Transit Division Should Not Outsource More of its Services Other Than Marketing Services.

The Transit Division already outsources 74% of its budget to a private contractor for the operation of the City’s transit system. The consulting team can observe no other discernable and substantive opportunities for outsourcing of

¹²² Urbitran Associates, Short-Range Transit Plan, May 2009.

services: the Division only is authorized a little more than two (2.32) positions. Further outsourcing would not provide any substantive opportunities for reducing costs without reducing service levels.

Recommendation #226: The Public Works Department should not outsource any additional services provided by the Transit Division other than marketing services.

5. ANALYSIS OF OPERATIONS AND MANAGEMENT

This section provides the project team's analysis of the opportunities for improvement in the operations and management systems for the Transportation Operations Division.

In conducting this analysis, the project team utilized best practices found in the Triennial Performance Audit, the Short Range Transit Plan prepared for the City, and data available from the State Controller's Office regarding transit agencies in the State. The consulting team could discern few applicable best management practices in the *American Public Works Association's Public Works Management Practices Manual*. The Management Practices are limited as it pertains to the effective transit practices. The *Public Works Management Practices Manual* includes practices that recommend drug and alcohol testing, a drug-free workplace, a policy that sets forth bus passenger shelters, methods for contacting bus operators, a fare structure for elderly and persons with disabilities, etc. None of these Management Practices addressed effective marketing practices, practices to enhance the cost effectiveness of transit systems, etc.

- (1) The City Should Assess the Costs and Benefits of Consolidation with the County of the Two Independent Transit Systems.**

In 2005, San Luis Obispo adopted the *San Luis Obispo County Long Range Transit Plan*. The development of the plan included a comparative survey. That comparative survey found that “relative to the size of its service area and population, San Luis Obispo County has significantly more transit systems while operating fewer peak-hour vehicles than its peers. Most of the peers either have a centralized transit system or have institutionalized (policy and operational) coordination among local transit operators.”¹²³ The plan recommended strategies that included prioritizing regional connectivity, and encouraging coordination among the operators and integration between fixed-route and paratransit services.

The City’s *Short Range Transit Plan* concluded that “SLO Transit’s performance as measured against its peers can best be described as average. SLO Transit consistently settled in the middle of the pack in most of the performance indicators, ranking either fourth or fifth in six of the eight indicators used for the analysis. SLO Transit performed best in the area of passenger productivity, ranking third in passengers per vehicle revenue hour and fourth in passengers per vehicle revenue mile. SLO Transit’s performance was above the peer average in both passenger productivity categories, suggesting that SLO Transit is doing a good job in meeting the transit needs of the community. SLO Transit did not perform as well in terms of cost efficiency. SLO Transit’s cost per vehicle mile of \$6.95 ranked last in the peer group. As was previously mentioned, this is an important consideration given that the contract with the private sector operator to provide SLO Transit service is based on a per vehicle mile payment. SLO Transit did better in the cost per vehicle hour indicator, ranking fifth of nine peers at \$76.56 per hour, but well above the peer

¹²³ Urbitran Associates, San Luis Obispo County Long-Range Transit Plan, March 2005.

average of \$65.37 per hour.”¹²⁴

The City’s City Council Agenda Report regarding the adoption of the *Short-Range Transit Plan* noted that “for the immediate future, SLO Transit (like all transit providers) will be challenged to keep current service levels, let alone consider increasing service. Operating funding has been reduced in the last twenty-four (24) month period.”¹²⁵

The Triennial Performance Audit recommended that SLO Transit implement an operators agreement with San Luis Obispo Regional Transit Authority to better coordinate provision of service between the two. Policy on fares, transfers, and shared bus stops needs to be formalized.

In addition, the City should explore the potential of consolidating the City’s and the County’s transit systems. The Public Works Department requested information regarding the benefits of potential consolidation. These benefits are already enumerated in the *San Luis Obispo County Long Range Transit Plan* and in the City’s *Short Range Transit Plan*. The Solano Transit Authority has faced similar questions regarding consolidation as San Luis Obispo. After a lengthy study, the Board of Directors approved the following recommendations at their meeting on June 10, 2009.

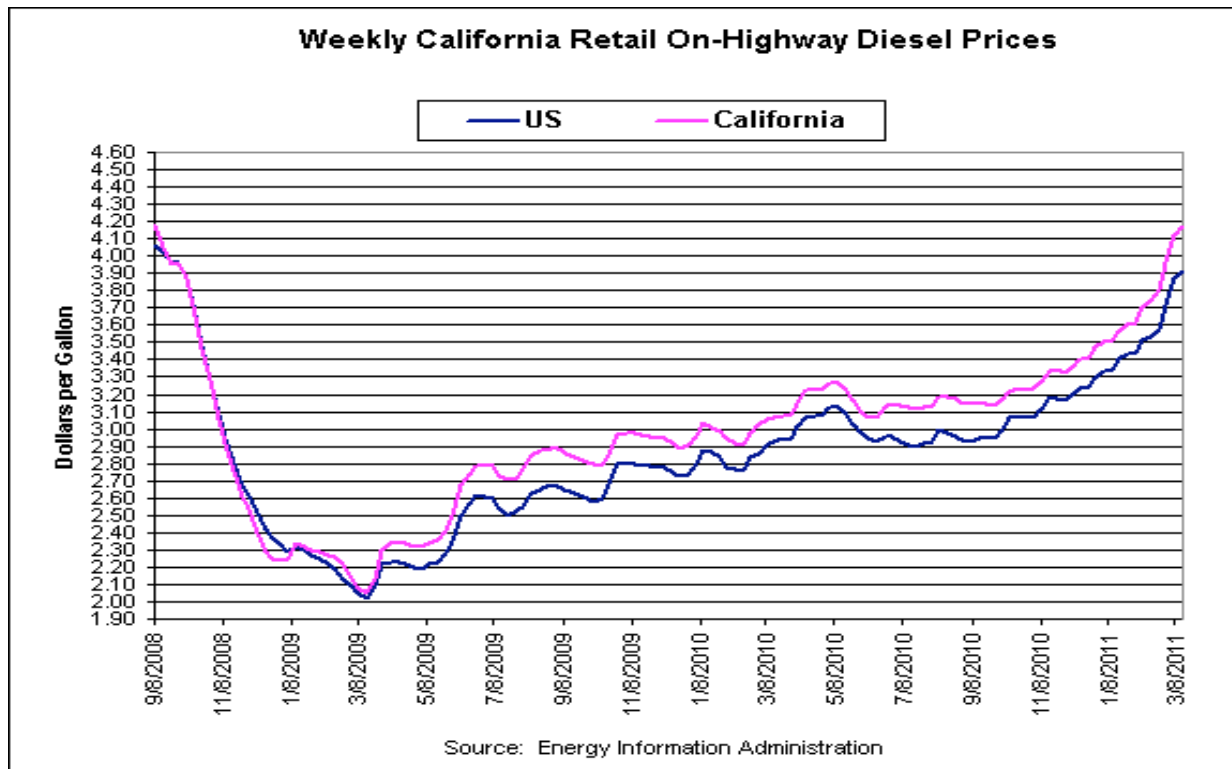
- Option 1: Consolidate the Benicia and Vallejo transit services pursuant to guiding principles;
- Option 4c: Decentralize intercity paratransit service to local transit operators and continue study of consolidation of interregional Solano transit services under one operator to be selected by the STA Board;
- Forward the Solano Transit Authority recommended transit consolidation recommendations to the affected agencies for their consideration and participation;

¹²⁴ Urbitran Associates, Short-Range Transit Plan, May 2009.

¹²⁵ Public Works Department, City Council Agenda Report, May 5, 2009.

- Direct STA staff to work with the affected local transit staff to develop Implementation Plans for Option 1 and Option 4c.

The price of diesel directly impacts the cost of services provided by SLO Transit. Those prices have been trending upward since March 2009 as the table below indicates.



The Public Works Department should begin the process now of exploring alternatives to enhance the cost-effectiveness of the operation of SLO Transit. As noted previously, the City's *Short Range Transit Plan* concluded that "SLO Transit did not perform as well in terms of cost efficiency." This challenge needs to be addressed.

Recommendation #227: The City should explore with the County the potential to consolidate the City and County transit systems.

(2) The City Should Renegotiate the Annual Fixed Fee For Use of the SLO Transit System With California Polytechnic San Luis Obispo and Address Other Issues During Renegotiation.

The students, staff the faculty of California Polytechnic San Luis Obispo are the major user of the SLO Transit. This benefits both the City and California Polytechnic San Luis Obispo.

There are, however, a number of challenges in this relationship. These challenges are noted below.

- Cal Poly ID cards are swiped using a system that coordinates with OtVia (Efficient Deployment of Advanced Public Transportation Systems. Due to the “experimental” nature of OtVia, First Transit’s drivers are instructed to accept any Cal Poly Id card, whether it shows up as viable or not when swiped. WQhen a card registers as invalid, no further action is taken. The card is not confiscated or marked. As a consequence, invalid cards may continue to be used indefinitely.
- California Polytechnic San Luis Obispo rides for annual fixed fee, regardless of usage. California Polytechnic San Luis Obispo ridership represents 62% of all users, impacting overall farebox revenue. Overall, Cal Poly contributes approximately 60% of fare revenues. However, these revenues amount to approximately 13% of operating expenses for SLO Transit. California Polytechnic San Luis Obispo uses parking fees, fines and forfeitures to fund its agreement with SLO Transit.
- Certain SLO Transit routes serving California Polytechnic San Luis Obispo are at capacity. The Transit Division believes that there is capacity for increased ridership from California Polytechnic San Luis Obispo, but given the fixed revenue, there is little incentive to add service.

California Polytechnic San Luis Obispo is a key partner in SLO transit. That partnership needs to address these challenges.

The agreement regarding the use of SLO Transit by California Polytechnic San Luis Obispo expires in 2011. The City should address these three issues during its negotiations with California Polytechnic San Luis Obispo.

This is not a new recommendation. The City's Short-Range Transit Plan recommended that the "concurrent with this fare change, SLO Transit should work with Cal Poly to increase the amount of revenue collected associated with providing Cal Poly students with unlimited rides."¹²⁶

Recommendation #228: The City should work with California Polytechnic San Luis Obispo to eliminate the potential to use invalid California Polytechnic San Luis Obispo ID cards.

Recommendation #229: The City should work with California Polytechnic San Luis Obispo to achieve a greater financial contribution by California Polytechnic San Luis Obispo to the overall SLO Transit farebox revenue, balancing that contribution with the need to encourage transit ridership by students.

Recommendation #230: The City and California Polytechnic San Luis Obispo should work to increase route services for those routes at capacity.

(3) The Transit Division Should Develop a Formal Written Fare Policy For the Consideration of the City Council.

The fare recovery for SLO Transit is less than the statewide average. In budget year 2009-10, passenger fares represented 24.8% of all budgeted revenues for transit operations.¹²⁷

A fare policy consists of principles, goals and constraints that guide and restrict a transit agency in setting and collecting fares. Some agencies have comprehensive fare policy statements; these may include:

- Long-term goals (e.g., maximize ridership, maximize revenue, maximize social equity);
- Short-term objectives (e.g., recovery ratio or ridership target); and
- Guidelines for reviewing/changing fares (e.g., review annually, tie fares to inflation).

¹²⁶ Urbitran Associates, Short-Range Transit Plan, May 2009.

¹²⁷ California State Controller, *Transit Operators and Non-Transit Claimants Annual Report*, January 2011

The most common impetus for fare structure/pricing change: response to particular issue or problem (e.g., revenue shortfall), although that is the worst time to be making such decisions. Few agencies make fare changes on regularly-scheduled basis

The Transit Division should develop a fare policy for the consideration of the City Council. The development of that policy should consider a number of elements as noted below.

- Define & prioritize fare policy goals.
- Review the existing fare system including the fare policy / structure and fare collection / verification.
- Identify the fare structure elements including the pricing strategy, payment options, and transfer policy/pricing levels.
- Develop alternatives for fare structure scenarios.
- Evaluate the scenarios and develop recommendations.

The development of a fare policy needs to balance competing goals (e.g., ridership vs. revenue, simplicity vs. equity), but its development is essential given the revenue problems noted in the 2009 *Short-Range Transit Plan*.

Recommendation #231: The Transit Division should develop a fare policy for the consideration of the City Council.

(4) The Transit Division Should Prepare a Plan of Implementation for the Short-Range Transit Plan.

The *Short-Range Transit Plan* for SLO Transit was completed in May 2009, and presented to the City Council in May 2009.¹²⁸

The *Short-Range Transit Plan* recommended in the first year of implementation of the plan that the SLO Transit route network be completely overhauled. The list

¹²⁸ Urbitran Associates, Short-Range Transit Plan, May 2009.

below presents the issues and opportunities for the SLO Transit route network as contained in the *Short-Range Transit Plan*.

- There are issues with overcrowding on routes that serve the Cal Poly campus.
- Running time/On-time performance issues.
- The frequency and span of service on Friday differing from other weekdays.
- Frequency and span of service during summer periods versus winter periods.
- Duplication with SLORTA services.
- Fare issues between SLORTA and SLO Transit services.
- Confusing route network with bi-directional loops.
- Low productivity on certain routes.
- Difficult turns for certain bus routes on neighborhood streets.
- Equipment issues with old buses and deployment of buses to meet ridership.
- Service needed to emerging corridors.
- The need for an off-street transfer center.

The overhaul of the network has not yet occurred: routes were apparently last updated in 2007. A fare increase was also proposed for year one in the *Short-Range Transit Plan*.

In the second year, the *Short-Range Transit Plan* implementation plan proposed changes were geared towards improving mobility on the Broad Street corridor. Route 1 service would be provided on weekends to allow access to Broad Street on all days of the week.

In the third year, the *Short-Range Transit Plan* implementation plan proposed changes included fare change as well as having regular weekday service operate on

Fridays. Concurrent with this fare change, SLO Transit should work with Cal Poly to increase the amount of revenue collected associated with providing Cal Poly students with unlimited rides. The service changes include modifying the schedule of Route 6 on Fridays in order to provide the same service as the rest of the week.

In the fourth year, the *Short-Range Transit Plan* implementation plan proposed changes included adding service during the summer periods so that there is a single year round schedule. Also, during peak commuting periods, additional service would be provided on Routes 1 and 3, resulting in 30-minute service. This would add service to Route 6 in the summer time daytime periods, provide evening service on Routes 2, 3, 4, and 6, as well as provide additional weekday service on Routes 1 and 3.

In the fifth year, the *Short-Range Transit Plan* implementation plan proposed changes included a new crosstown route as well as additional service on Routes 1 and 3. A fare adjustment would also occur in Year 5.

This is an ambitious plan. It has been one and three-quarters years since the plan was adopted by the City Council. The Transit Manager should prepare a formal written plan of implementation for the review of the Public Works Director and the Office of the City Manager.

Recommendation #232: The Transit Manager should prepare an implementation plan for the *Short-Range Transit Plan*, and submit the implementation plan to the Public Works Director and the Office of the City Manager.

(5) The Transit Division Should Retain a Consulting Firm to Assist the Division in Developing and Assisting in the Implementation of a Marketing Plan.

The most recent Triennial Performance Audit of San Luis Obispo Transit, completed in August 2008, recommended that the Division “update the strategic

marketing plan and evaluate its effectiveness on a program by program plan.” The Triennial Performance Audit noted that “a marketing plan was developed in fiscal year 2002-03, but a current plan is not in use and no evaluation of marketing activities was reported. The existing plan should be updated with the two-year budget cycle, its strategic nature ensured, and metrics for the evaluation of its success put into place. Without a marketing plan or evaluation, it is difficult to determine how effective current marketing efforts are at achieving SLO Transit’s ridership and other goals. A Strategic Marketing Plan would provide SLO Transit with a guidepost for determining the effective use of its limited dollars. Evaluation of the success of each program and the overall strategies and annual updates of the marketing plan will help SLO Transit make the most effective use of its limited dollars.”¹²⁹

The Transit Manager should develop a proposal for the consideration of the Public Works Director to retain a consulting firm to develop a marketing plan for SLO Transit, and to assist SLO Transit in its implementation.

Recommendation #233: The Transit Manager should develop a proposal for the consideration of the Public Works Director to retain a consulting firm to develop a marketing plan for SLO Transit, and to assist SLO Transit in its implementation.

(6) There Are No Opportunities for Cost Reductions Within the Transit Division Without Reductions In the Level of Service and There Are Not Any Observable Redundancies in Service Delivery.

The City has been in a cost reduction mode for six of the past eight fiscal years. The Transit Division has not been exempt from these reductions. There are no observable opportunities to reduce costs within Transit Division without reducing levels of service. There are no observed redundancies in Transit Division. That is, the

¹²⁹ Majic Consulting Group, Triennial Performance Audit of San Luis Obispo Transit, August 2008

Transit Division is not consistently delivering services that are also delivered by other Sections in the Public Works Department.

(7) The Transit Division Utilizes Appropriate Equipment and Technology.

The Transit Division is appropriately equipped to conduct its work. It utilizes the same type of equipment that other cities utilize, and that enable its efficient delivery of services.

13. PARKING SERVICES

This chapter presents an analysis of the Parking Services Division. The analysis of the Division includes the parking structures / lots, parking meters / on-street parking, and parking enforcement.

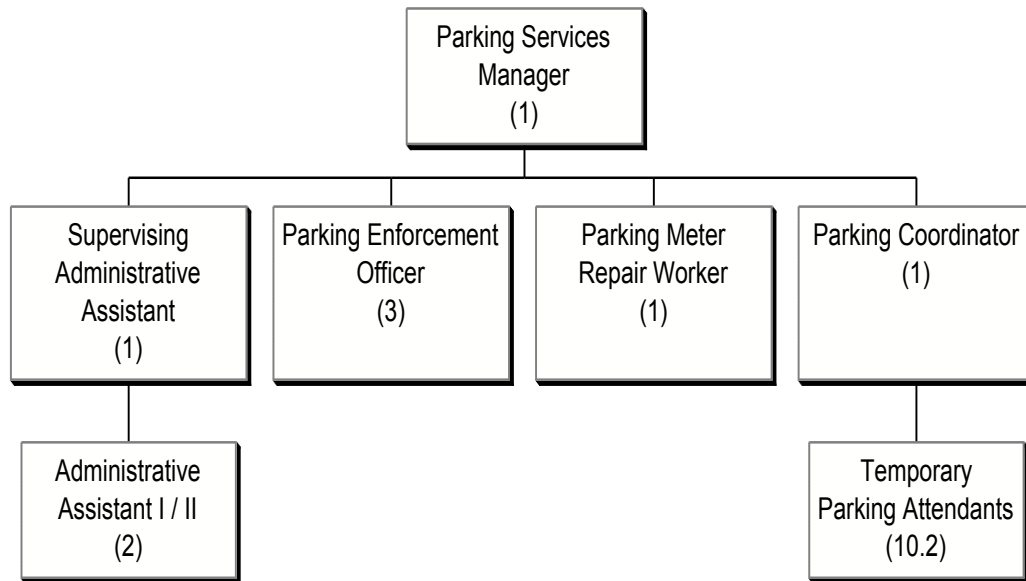
1. THE PARKING SERVICES DIVISION IS AUTHORIZED NINE FULL-TIME STAFF AND A LITTLE MORE THAN TEN FULL-TIME EQUIVALENT TEMPORARY WORKERS.

The Parking Services program is responsible for the implementation of the Access and Parking Management Plan, and the operation and maintenance of the City's parking facilities. These facilities include thirteen (13) parking lots in the downtown and at Railroad Square, three (3) parking structures, eight (8) residential parking permit districts, and about 1,528 parking meters in parking lots, on streets in the downtown retail core, and on streets in neighborhoods at the periphery of downtown. This Division has five major activities as noted below.

- Compliance/enforcement. Patrolling streets, parking lots, parking structures and permit districts; providing information; issuing citations; arranging for towing the vehicles of habitual parking offenders; recommending the installation of
- Revenue management. Collecting fines, parking meter revenue, parking fees, and parking lease payments; collecting delinquent fines; recommending parking fee and fine adjustments; modifying meters for rate adjustments; selling parking permits and bus passes.
- Maintenance. Maintaining and repairing parking meters and meter posts; performing janitorial maintenance in the parking structures and parking offices; sweeping and cleaning parking lots; sweeping and scrubbing parking structure floors.
- Structure operations. Collecting parking fees, providing security surveillance, maintaining customer service equipment.

- Parking management and demand reduction. Developing and implementing strategies that make maximum use of existing parking spaces and reduce the use of single occupancy vehicles in order to increase the effective inventory of parking spaces.

The Division is authorized a little more than ~~ten~~ nineteen (19.2) full-time equivalent staff as noted in the plan of organization below. Almost 60% of the staff are allocated to the operation and management of the parking structures.



The fiscal year 2010-11 budget for the Parking Services Division is presented in the table below.

Cost Activity	FY 2010-11 Budget	% of Total
Staffing	\$1,009,100	58.50%
Contract Services	\$519,725	30.13%
Other Operating Expenditures	\$160,945	9.33%
General Carryover	35300	2.05%
Total	\$1,725,070	100.00%

As the table indicates, the fiscal year 2010-11 budget for the Parking Services Division amounts to \$1,725,070.

2. THERE ARE A NUMBER OF POSITIVE CHARACTERISTICS TO THE OPERATION OF THE PARKING SERVICES DIVISION.

The diagnostic appraisal of the Parking Services Division indicated a number of positive characteristics. Examples of these positive characteristics are presented below.

- The Parking Services Division operates as a vertical, integrated parking management structure with responsibility for all aspects of parking including parking permit sales, parking enforcement, parking structure and parking meter maintenance, parking structure and parking meter collection and revenue auditing, etc.
- The Parking Services Division operates as an enterprise fund.
- An inventory of parking / garage facilities is in place. Utilization is automated through Scan-Net that is capable of tracking monthly use, transient use, etc.
- The Parking Services Division regularly partners / co-sponsors downtown marketing and promotional activities.
- The Parking Services Division has an automated payment process for the parking garages / lots that provides for stronger internal controls related to cash receipts.
- The Parking Services Division uses electronic parking meters.
- The parking meter collections process is designed as a “touchless” system that restricts collectors from access to the collections. The top of each sealed canister is designed to interlock with a sealed cart vault. Coins are transferred from the parking meter canister to the carted vault without any exposure of the coins. The carted vault is sealed with a padlock.
- Collections are placed in a safe on a daily basis, and transported Monday, Wednesday, and Friday via armored car to a bank.
- Cash deposits are reconciled, after transport via armored car to the City’s bank, by route and location.
- The City has implemented e-ticketing systems, which includes a handheld device with a small printer to issue traffic tickets

Overall, the Parking Services Division has a number of strengths.

3. ANALYSIS OF ORGANIZATIONAL STRUCTURE

The fundamental questions in evaluating organizational structure are the efficiency of the plan of organization, the responsibility and accountability of managers and supervisors. The intent is to ensure the following:

- **The organizational structure fosters accountability** - The organizational structure fosters accountability among management and supervisory staff;
- **The plan of organization enhances communication and coordination** - The number of handoffs/exchanges required among staff providing service to the public or internal clients is minimized;
- **Management and supervisory resources are utilized efficiently** - The plan of organization minimizes administrative overhead.
- **The span of control for any manager or supervisor is not more or less than 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.

These principles were utilized in evaluating the organizational structure of the Parking Services Division.

(1) The Plan of Organization for the Parking Services Division Should Not Be Modified.

Why should an organization be concerned about managerial layers and spans of control?

The City of San Luis Obispo has been challenged fiscally over the past several years to provide a responsive government at a lower cost. As noted in the General Fund Five-Year Fiscal Forecast presented to the Council in October 2010, the City is facing a long-term structural budget gap between revenues and expenditures for the foreseeable future unless corrective action is taken. One of the most effective ways to meet these challenges is to streamline organizational structure through increased

spans of control.

At the present time, the Parking Services Manager supervises six (6) staff including the Supervising Administrative Assistant, three (3) Parking Enforcement Officers, a Parking Meter Repair Worker, and a Parking Coordinator. However, the Parking Services Manager also has assumed a new role – that of the “downtown champion.” This new role is absorbing 10% to 20% of his available work hours, and when there are downtown issues, as much as 50% to 75% of his available work hours.

Management literature identifies various factors that cause span of control to differ among supervisors and in different organizations. For example, narrower spans of control are appropriate when the nature of work performed is complex, when organizational objectives are unclear, when tasks are uncertain, or risks are high. The chart, below, presents some of the factors that should be considered in evaluating spans of control.

Factor	Narrower Span of Control	Wider Span of Control
Nature of Work	Complex	Not Complex
Similarity of activities performed	Different	Similar
Clarity of organizational objectives	Not Clear	Clear
Degree of task certainty	Fuzzy	Definite Rules
Degree of risk in the work for the organization	High	Low
Degree of public scrutiny	High	Low
Supervisor's qualifications and experience	Weak	Strong
Burden of non-supervisory duties	Heavy	Light
Degree of coordination required	High	Low
Availability of staff assistance	None	Abundant
Qualifications and experience of subordinates	Weak	Strong
Geographic location of subordinates	Dispersed	Together

There are a number of factors in the Parking Division that argue for a wide and for a narrow span of control as noted below.

- **Wide span of control.** Those factors that suggest a wider span of control is possible include:
 - The activities performed are similar,
 - The organizational objectives are clear,
 - There are definite rules for the tasks performed by the staff of the Parking Division,
 - The staff assistance available for the Division,
 - The nature of the work performed by the staff of the Division,
 - The staff performs their work at one location, and
 - The qualifications and experience of the Parking Division staff, which are strong,
- **Narrow span of control.** On the other hand, there are factors that suggest the narrow span of control should be continued. These include the risk of the work for the organization, the degree of public scrutiny, and the degree of coordination required.

A tall, narrow span of control is thought to create slower decisions and sometimes hamper an organization's ability to compete. Narrow spans of control may be most appropriate in highly technical or specialized areas that require close supervision.

A wider, flatter configuration means fewer layers of reporting and more subordinates reporting to a supervisor. Wider and flatter organizations tend to have faster decision-making, and improved communication, motivation and morale. Spans of control that are too wide can also create problems such as inconsistent performance and inadequate supervision.

The Matrix Consulting Group utilizes span of control guidelines to shape the discussion and development of recommendations regarding spans of control and management / supervisory layers. These guidelines were developed based upon the research and analysis conducted by a number of other cities and counties that were evaluating the number of management layers and the spans of control in their

organizations. These include such cities and counties as Portland, Oregon; King County, Washington; Seattle, Washington; Kansas City, Missouri; etc.

These guidelines recognize situational differences in terms of departmental size, task complexity, etc. The guidelines, for a department such as the Public Works Department with 50 to 150 employees, suggest that not more than four layers of managers and supervisors are appropriate, and that the span of control for the ratio of first-line supervisors to non-supervisors assigned to maintenance should not be lower than 1 to 10 or higher than 1 to 20.¹³⁰

As these guidelines apply to Parking Division there are three (3) management and supervisory layers: The Public Works Director, the Deputy Director (Transportation), and the Parking Services Manager. This falls within the guidelines.

The Parking Services Manager, however, only supervises six (6) staff including the Supervising Administrative Assistant, three (3) Parking Enforcement Officers, a Parking Meter Repair Worker, and a Parking Coordinator. This is less than the guidelines suggest as appropriate. However, the Parking Services Manager also has assumed a new role – that of the “downtown champion.” This new role is absorbing 10% to 20% of his available work hours, and when there are downtown issues, as much as 50% to 75% of his available work hours.

Overall, there should not be any modifications made to the plan of organization of the Parking Division.

Recommendation #234: The plan of organization for the Parking Division should not be modified.

¹³⁰ *City of Portland Span of Control Study*, prepared for the City of Portland Audit Services Division by Public Knowledge, Inc. and The Kemp Consulting Group, 1994.

(2) The Parking Services Manager Should Continue to Function as the “Downtown Champion.”

As noted previously, the Parking Services Manager also has assumed a new role – that of the “downtown champion.” This new role is absorbing 10% to 20% of his available work hours, and when there are downtown issues, as much as 50% to 75% of his available work hours.

As the “Downtown Champion”, the Parking Services Manager serves as a City liaison, interfacing with the Downtown Association Board and the businesses / vendors on a variety of public works and other citywide issues on behalf of the City.

Given the other “downtown” roles and responsibilities of the Division, this is an appropriate role for the Parking Services Manager. The Parking Services Manager has been able to absorb this new workload, without substantive impacts to the Division. The span of control for the Parking Services Manager is narrow at six staff that the Parking Services Manager should be more than capable of absorbing this workload.

Recommendation #235: The Parking Services Manager should continue to function as the “downtown champion”.

4. ANALYSIS OF STAFFING

This section provides an analysis of the workload and staffing levels of the Parking Division including the potential of alternative service delivery, if any.

(1) The Level of Staffing Within the Division Meets Workload Requirements With Some Exceptions.

Overall, the staffing levels for the Parking Division are appropriate given the range of duties and the levels of service provided. Our specific perspectives regarding the staffing of the Division are summarized below.

- **Three (3) full-time Parking Enforcement Officers and a half-time (0.5) temporary Parking Enforcement Officer are appropriate given the levels of enforcement, the number of routes, and the number of citations issued in 2007-08 and 2008-09, but not in 2009-10.** The Parking Enforcement Officers provide parking enforcement services throughout the City, with emphases on downtown, residential parking districts and railroad square areas. The officers are scheduled Monday through Saturday, 0800 to 1800 hours and enforce meter violations; red zones; handicap zones; residential parking area violations; and any other parking violations, as necessary.¹³¹ These three and one-half (3.5) Parking Enforcement Officers issued 25,833 parking citations in fiscal year 2009-10 or 7,380 parking citations per Parking Enforcement Officer.¹³² As the next section notes, this is less than benchmarks utilized by the Matrix Consulting Group would suggest as appropriate. A Parking Enforcement Officer should be capable of issuing 10,000 or more citations annually. If the number of citations issued does not return to levels experienced in 2007-08 and 2008-09, one (1) Parking Enforcement Officer position should be eliminated.

Recommendation #236: If the level of parking enforcement output continues at the same level as fiscal year 2009-10, one (1) Parking Enforcement Officer position should be eliminated.

- **The allocation of one (1) Parking Meter Repair Worker for the maintenance and repair of parking meters is appropriate.** The Matrix Consulting Group uses a benchmark of 1,500 parking meters per maintenance worker. The Parking Meter Repair Worker is responsible for the maintenance and repair of 1,528 parking meters. The position is important since parking meters in lots and on-street generate approximately \$1.4 million annually in revenue. The reliability of the meters is important in the collection of that revenue.

Recommendation #237: The authorization of a Parking Meter Repair Worker for the maintenance and repair of parking meters should be continued.

- **The staffing of the Parking Structures is what is necessary to operate the structures.** A total of 11.2 full-time equivalent positions are authorized for the operation of the three (3) parking structures. One (1) of these positions is full-time permanent, and the other 10.2 full-time equivalent positions are temporary. The Parking Coordinator – a full-time permanent position, is responsible for supervising the operation of parking facilities (e.g. structures) to include hiring and training cash-taker (part-time temporary) personnel; maintaining parking control apparatus (e.g. ingress / egress systems); collection and management,

¹³¹ The source of this information is the corrected profile of the Public Works Department. The profile was reviewed and corrected by the Public Works Department.

¹³² The source of the information regarding the number of citations issued by the Section was the Parking Supervisor in an e-mail dated February 24, 2011.

and transport of cash; oversight of structure tenants; and oversight of various contractors to include cleaning services, security services and elevator maintenance. The temporary workers operate approximately 12 to 18 hours per week and are responsible for operating the cashier's booth and three (3) parking structure facilities. These temporary workers take payment from users, make change, and respond to inquiries as necessary. Workers are scheduled during operating hours of the three parking structures. The hours worked by these temporary workers varies by structure as noted in the facility below.

Structure	Hours Worked Per Structure
Parking Structure 1 Operations	2 shifts, 12 hours / day Mon, Tues, Weds; 16.25 hours / day Thurs, Fri, Sat. Annual total of 4,407 hours
Parking Structure 2 Operations	3 shifts, 18 hours/day Mon, Tues, Weds; 26.25 hours / day Thurs, Fri, Sat. Annual total of 6,942 hours
Parking Structure 3 Operations	2 shifts, 12 hours / day Mon, Tues, Weds; 16.25 hours / day Thurs, Fri, Sat. Annual total of 4,407 hours

Overall, the temporary staffing authorized for these structures is the minimum necessary to operate these facilities, and nothing more. The temporary staff are paid approximately \$14 per hour and no fringe benefits; these are low cost staff. The Parking Coordinator is necessary to supervise the operation of these facilities that generate \$1.2 million in revenue.

Recommendation #238: The authorization of 11.2 full-time equivalent positions is the minimum necessary for the operation of the three (3) parking structures.

- **The three support staff have some capacity to support Departmental administration.** Parking Services is authorized three (3) support staff: A Senior Administrative Assistant and two (2) Administrative Assistants. The responsibility of these positions is noted in the sections below.
 - The Supervising Administrative Assistant provides supervision of the two (2) Administrative Assistant II positions, and performs various duties and responsibilities including assisting in the coordination of the work performed by parking temporary workers; assistance to the Parking Services Manager; coordination of eight (8) Residential Parking Districts and related permit programs; coordination of citation and related appeals services; coordination of parking cash/coin operations; and coordination of contractors providing citation billing, coin collection, cash transportation, etc.
 - The two (2) Administrative Assistant II positions share similar duties and responsibilities with some exceptions. These two (2) staff process parking structure paperwork for the Parking Coordinator including time-off requests, shift issues, etc.; enter paper citation data into the WinSite program; interface with the Phoenix Group billing company, the FSC

coin collection, and the AT Systems armored transport; run reports related to citation production, parking structure usage, etc.; process Residential Parking District permits; sell meter cash keys and key re-loads; program ingress / egress Prox monthly cards for parking structures; order supplies; staff the public counter providing parking service information; prepare coinage for transport by armored transport; and other administrative duties as assigned. In addition, the Administrative Assistant II processes paperwork for the citation appeals program.

These three (3) staff work effectively as a team in support of the Division. The consulting team does not recommend a reduction in this level of staffing, but would recommend that the skills and talents of these three (3) staff be utilized, in a limited manner, to support the Public Works Department as a whole. This should not be more than eight (8) hours per week, and could include purging departmental files to comply with the City Clerk's schedule, purging of electronic files, update the Department's desk guides, tracking insurance for construction contractors working for the City, etc.

Recommendation #239: The two Administrative Assistant II's should provide ongoing support to the Public Works Department administration, not to exceed one (1) full workday per week.

Overall, the staffing of the Parking Division largely matches workload with some exceptions as noted previously.

(2) The Operation of the Parking Structures Should Not Be Outsourced.

The City could contract daily operations of the three (3) parking structures to a professional, private parking management firm, while retaining overall management and control as a City function.

The primary advantage of this option is that day-to-day parking operations are placed in the hands of a professional parking management company, which will bring extensive experience and new ideas to the operation that could result in improved service levels.

The primary disadvantage to this approach is cost. This approach, while potentially providing a higher level of service and management expertise, would

necessitate higher parking fees than the current City operation. With a concession style agreement, the concessionaire will provide all necessary labor and services for the complete operation of parking facilities in return for an agreed to percentage of the gross parking revenues. The actual percentage varies from operation to operation. With a parking management agreement, the parking operator would provide the City with a monthly invoice including a detailed record of expenditures (with receipts) and would then be reimbursed for approved expenses. The expenditures would include the time for all cashiering and maintenance personnel and manager/supervisory personnel time, if agreed to.

However, a review of the revenues and the expenses for the three parking structures indicates that a significant increase in parking fees would be necessary to incentivize a professional, private parking management firm to bid on a concession-style agreement to manage the operation of these three (3) parking structures. The margins, in terms of revenue and expenses, are too slim at the present time.

In addition, the Division runs a low cost operation. All of its employees assigned to the operation of the three (3) parking structures are temporary without fringe benefits, with the exception of the Parking Coordinator. It is unlikely professional, private parking management firm could better this arrangement with a parking management agreement.

Cities that have used an outside contractor to manage any aspect of their parking system must still manage the third party management firm and remain actively involved in how the parking operation is run. As a result, employing a private firm to manage any aspect of a city's parking operations may result in some cost savings at

the lower end of the wage scale, but cities cannot farm out the higher wage jobs to contractors. This limits the extent to which significant labor cost savings can be realized.

There is also a question of whether the City is truly prepared to give up control of parking rates in the parking structures (typically required to monetization of the structures), and whether it is willing to tolerate what could be significantly higher rates.

Recommendation #240: The City should not outsource the management of the three parking structures at the present time given the margin of revenues versus expenditures for the structures.

5. ANALYSIS OF OPERATIONS AND MANAGEMENT

This section provides the consulting team's analysis of the opportunities for improvement in the operations and management systems for the Parking Division.

In conducting this analysis, the project team utilized best practices found in other cities and its own experience in analyzing parking management practices in cities for over thirty (30) years, the best practices cities by other parking management consultants, and the practices of other cities with well managed parking management programs. The consulting team could discern few applicable best management practices in the *American Public Works Association's Public Works Management Practices Manual*. The Management Practices are limited as it pertains to the effective parking management practices. The *Public Works Management Practices Manual* includes practices that recommend the adoption of policies for determining the placement of parking lot structures, standards and criteria for parking lot facility design and construction, maintenance standards for parking lots and structures, plans for facility operating procedures, security, accessibility, and revenues, a program for

parking regulation being established, etc. The policies do not address the productivity of Parking Enforcement Officers, the use of technology for parking enforcement, the use of pay stations in lieu of parking meters, high-security parking meter locks, etc.

(1) The Number of Parking Citations Issued Is Less Than That of Other Cities.

The Parking Enforcement Officers provide parking enforcement services throughout the City, with emphasis on the downtown, residential parking districts and railroad square areas. Parking Enforcement Officers are scheduled Monday through Saturday, from 8:00 am to 6:00 pm, and enforce meter violations; red zones, handicap zones, residential parking area violations, and other parking violations as necessary. The Police Department provides parking enforcement services in the off-hours through their SNAP program and patrol officer programs.

The number of parking citations issued by these three (3) Parking Enforcement Officers has declined in the past three years as noted in the table below.

Fiscal Year	Number of Parking Citations Written
2007-08	30,310
2008-09	34,617
2009-10	25,633

Parking Enforcement Officers in San Luis Obispo issued 25,833 parking citations in fiscal year 2009-10 or 8,544 parking citations per Parking Enforcement Officer. The three (3) Parking Enforcement Officers should each be capable of issuing approximately 10,000 or more citations annually. Other cities have been observed by the consulting team to issue this amount of parking citations per parking enforcement officer.

This is **not** a recommendation that the Parking Enforcement Officers be instructed to issue a specific number of parking citations per hour or per day. Nor

should it be viewed as a quota. However, recent data collected in commercial districts in California and other parts of the country suggest that the number of cars parked in violation of parking restrictions at any given time can reach as much as 40%.¹³³

It is a recommendation that Parking Enforcement Officers be instructed to allocate not less than 90% of their available work hours to patrolling their routes, and that these Officers should make not less than five (5) to six (6) passes on their routes each day.

Recommendation #241: The Parking Enforcement Officers should be instructed to allocate not less than 90% of their available work hours to patrolling their routes, and that these Officers should make not less than five (5) to six (6) passes on their routes each day.

(2) The Parking Services Division Should Acquire License Plate Recognition Technology.

The Parking Services Division has not acquired License Plate Recognition technology, a system that automates the enforcement of time-limited areas through the use of efficient “electronic chalking”. This technology improves the accuracy and efficiency of enforcement efforts. However, the Division does employ an e-ticketing system, which includes a handheld device with a small printer to issue traffic tickets, as well as auto-population features.

A number of cities have reported good results from an emerging technology for license plate recognition to assist in scofflaw and stolen vehicle recovery. This technology consists of a unit mounted on the hood of a parking enforcement vehicle that permits the moving vehicle to read license plates of parked vehicles (parked parallel, or at 45 degrees, or at 90 degrees) from the moving vehicle. Each time the unit reads the license plate, that license plate is matched against a database of stolen

¹³³ This number is from recent studies that included Los Angeles and San Francisco.

and/or scofflaw vehicles, and an alarm alerts the driver to each match. One city that acquired the technology reported a 400% increase in identifying scofflaw vehicles.

The estimated one-time cost of an automated license plate recognition system is presented in the table below.

Recommendation	One-Time Cost
The Parking Services Division Should Acquire License Plate Recognition Technology	\$35,000

Recommendation #242: The Parking Services Manager should develop a capital improvement request in fiscal year 2012-13 to acquire license plate recognition technology.

(3) The Parking Services Division Should Develop A Capital Improvement Program Budget Request To Acquire Pay Stations for the Downtown on a “Pilot” Basis.

A growing trend for municipalities is to move away from the use of traditional parking meters, and replace them with multi-space meters. As the name implies, multi-space meters cover multiple spaces for on or off street metered parking.

The City does not selectively utilize Pay Stations in the downtown. With pay stations, the parking customer pays at a kiosk and receives a receipt that is placed on the vehicle’s curbside window. The receipt identifies the date, time, and amount of parking time purchased.

There are two (2) main types of multi-space meters: Pay and Display and Pay by Space. Pay-and display issues the patron a receipt to be placed inside the vehicle. The receipt shows how long the vehicle can park. The pay-by-space meter allows the user to pay for a particular parking space.

In other cities, pay stations have contributed to increased revenue, better data, lower down time for repairs due to electronic reporting, and enhanced enforcement.

The advantages of pay and display stations are as follows:

- When paying with a credit card, customers often pay for the maximum amount of time;
- Increased revenue (between 10-40%) without increasing parking rates;
- Unused time leaves with the vehicle, unlike traditional single space meters;
- Patrons can use valid receipt to re-park and use parking time at multiple locations;
- Can accept credit cards, bills, coins, smart cards, and pay-by-cell;
- Multiple machines can be used by patrons to make payment, thus an out of service meter does not necessarily result in lost revenue;
- Pay-and-display stations do not require individually marked spaces.

There are also disadvantages to pay-and-display stations. These disadvantages are noted below.

- On-going monthly costs for on-line access, receipt paper, and processing of credit card payments;
- Initial investment needed to promote, educate, and implement new method of payment collection;
- Some users find the pay stations difficult or confusing to use;
- Municipalities that have not properly educated and informed the public about the transition to multi-space meters have experienced a high rate of failure in terms of patrons accepting the systems. In some cities, the multi-space meters were actually removed in response to customer complaints;
- Patron must walk back to vehicle after paying for parking;
- Enforcement officer must visually find and inspect paper receipt;
- Potential for litter from old receipts; and
- Issues with motorcycles, multiple receipts, and “messy” dashboards.

Multi-space meter costs vary greatly depending on the options added to the

unit. Prices can vary from \$8,000 to \$15,000 per unit, and some higher. However, one unit usually covers 10 to 15 spaces, which breaks down to \$1,000 to \$1,500 per space. The cost of a well-equipped single parking meter is \$380 to \$650, including the case. In addition to the costs for the equipment, installation and on-going fees per unit to maintain real time connectivity is required, as are credit card processing fees. These fees can range from \$35 to \$100 per month per unit, excluding credit card processing fees. These monthly fees break down to \$4 to \$10 per space. Single space meters have no such fees associated with them.

Pay Stations are typically located approximately in the middle of the block and serve eight to 12 on-street parking stalls. There are two types of pay stations: pay-and-display, and pay-by-space. The City of San Francisco, California acquired 250 pay-by-space meters for approximately 1,300 parking spaces, or an average of one machine per every five to six parking spaces. Similarly, the City of Berkeley, California has installed a pay station for every 6 parking spaces, on average, on major corridors. The City of Aspen, Colorado manages about 13 parking spaces per pay station. The City of Toronto, Ontario has pay stations that control eight to 12 parking spaces each depending on the location. There are other local examples of these pay stations including Santa Monica and West Hollywood. Several cities have experienced a substantial increase in parking revenues by changing from single-space meters to pay-and-display meters. Toronto, for example, experienced a 30 to 40% increase in meter revenues without an increase in the meter rate. Portland expects at least a 15% increase in revenue. The City of Las Vegas found that people paying the meter with coins tend to pay the minimum or whatever coins they may have readily available. But,

with credit cards and the pay stations, people tend to put in a lot more, generally the maximum. The City's average credit card transaction approximated \$2.22. But, their average coin transaction was only 74 cents.

In terms of pricing adjustability, pay stations can be programmed with as many pricing options as the City deems appropriate. In addition, users have the convenience of choosing one of several payment methods. Pay-by-space stations also offer the ability to be modified to alert enforcement officers of a parking violation through visual signals on top of the pay stations.

Signs indicating "PAY TO PARK" with directional arrows would need to be posted along each block with a pay station.

Recommendation #243: The Parking Services Manager should develop a capital improvement program budget request to acquire pay stations for the downtown on a "pilot" basis.

(4) Parking Services Should Convert the Parking Meter Locks To High Security Locks.

The City uses outdated keys that easy to reproduce.

The parking meter industry has largely converted to high-security electronic locks. These electronic locks offer the following features:

- The key can be replaced only by the vendor, eliminating the fear of unauthorized duplications;
- The lock technology features hardened steel pins to prevent anyone from drilling or prying the lock open;
- The lock tolerances are tight reducing the likelihood of being picked or opened by lock decoding;
- The electronic key records operational data including times and locations of all transactions, operator activity, and any unauthorized attempts to open;
- The key includes a special identification badge reader for additional security;

and

- The LED on the key handle flashes red and green signals to alert the user when data is being transferred.

The failure to use electronic locks is an internal control weakness. The one-time cost to convert to high security locks is presented in the table below.

Recommendation	One-Time Cost
Parking Services Should Convert the Parking Meter Locks To High Security Locks	\$91,700

Recommendation #244: The Parking Services Manager should develop a capital improvement program budget request for fiscal year 2012-13 to convert the parking meter locks to high security locks.

(5) The Parking Division Should Upgrade Its Parking Management Software from AutoTRAX Version 1.18 Software to Version 1.92.1.

AutoTRAX is a parking management software application. This software can be utilized for a number of essential management functions. These are presented below.

- Track individual meter mechanism by serial number, location, collection route, and maintenance route.
- Use the handheld device to automatically update programming options in Duncan electronic meters. Use rate program tools within AutoTRAX to create rate programs, which can be transmitted via infrared to Duncan electronic mechanisms.
- Audit the revenue passing through parking meters using the audit feature. Use the handheld to audit the meters at any time to generate a record of revenue. Run reports based on spaces, routes or other criteria.

The AutoTRAX system provides remote meter status monitoring, rate adjustment capability, and management reporting features, allowing Parking Division personnel to see the status of every meter and zone, change parking rates, and view and respond to alerts for needed maintenance, collections, meter violations, and more.

Currently, the Division is using version 1.18. It should upgrade to version 1.92.1

Recommendation #245: The Parking Division should upgrade its parking management software from AutoTRAX version 1.18 software to version 1.92.1.

(6) Parking Services Should Enhance Cost Recovery For the Parking Permit Program.

On an annual basis, Parking Services issues neighborhood parking permits.

The permits are issued at no cost.

The consulting team recommends that the City Council adopt a policy of full cost recovery for the residential parking permit program and that fees be adopted to fully recover the costs of the program.

The Parking Services Manager should develop a proposal for the consideration of the City Council to establish a residential parking permit fee that fully recovers the costs of the Parking Services Division for the issuance of these permits.

Recommendation #246: The Parking Services Manager should develop a proposal for the consideration of the City Council to establish a residential parking permit fee that fully recovers the costs of the Parking Services Division for the issuance of these permits.

(7) Parking Services Should Revisit the Decision to Generate Additional Revenues From Advertising Within the Parking Structures.

In these challenging economic times, cities need to explore every avenue to generate additional revenue. This includes advertising revenue. Other cities, such as Huntington Beach, have generated significant additional revenue by allowing advertising in selected city-owned properties.

The Parking Services Division should take two steps in this direction.

First, the Division should develop a proposal for the consideration of the City Council to allow advertising within the parking structures. The City Council has not

reacted positively to these proposals in the past. Given the challenging economic times, the Division should revisit this issue.

Aluminum and glass cases could be used for advertisements within elevators and elevator lobbies. AdWalls could be utilized that involves turning entire blank gray walls within parking garages to an advertisement for local businesses or national companies such as Coca-Cola, Nike, etc. Colorful advertising banners could be utilized within parking garages.

Secondly, the Division should develop a proposal for the consideration of the City Council to allow advertising on parking structure tickets and parking gates to eliminate ticket expenses from its operating expense budget, and creating an opportunity to market downtown venues and attractions.

Recommendation #247: The Parking Services Manager should develop a proposal for the consideration of the City Council to allow advertising within the parking structures.

Recommendation #248: The Parking Services Manager should develop a proposal for the consideration of the City Council to allow advertising on parking structure tickets and parking gates.

(8) The Cash Management Practices of the Parking Division Meet Best Practices, But the Finance Department Should Conduct “Spot” Audits.

It is clear to the consulting team that the Parking Division uses best practices as it pertains to cash management. Examples of these best practices are presented below.

- The parking meter collections process is designed as a “touchless” system that restricts collectors from access to the collections. The top of each sealed canister is designed to interlock with a sealed cart vault. Coins are transferred from the parking meter canister to the carted vault without any exposure of the coins. The carted vault is sealed with a padlock.

- Collections are placed in a safe on a daily basis, and transported Monday, Wednesday, and Friday via armored car to a bank.
- Cash deposits are reconciled, after transport via armored car to a bank, by route and location.
- The Parking Division has an automated payment process for the parking structures / lots that provides for strong internal controls related to cash receipts.

The consulting team could not identify any opportunities to enhance the cash management practices used by the Division.

The consulting team, however, does recommend that the Finance Department conduct a “spot audit” of the cash handling procedures used by the Parking Division not less than once every two years.

Recommendation #249: The Finance Department conduct a “spot audit” of the cash handling procedures used by the Parking Division not less than once every two years.

(9) The Parking Division Should Implement Automated Parking Display Message Boards in the Downtown.

Visitors to the Downtown cannot readily find parking spaces despite the existence of a large number of spaces within the public parking structures. The Division has raised this issue previously and unsuccessfully.

The Division, despite past problems with the acceptance of this technology, should move forward with installation of real time message boards along the main thoroughfares of the downtown, and in front of the public structures, that will inform drivers where available parking spaces can be found. The Division should consult with the Chamber of Commerce regarding the installation of this technology.

A finding common among many studies of downtown commercial districts has been the need to spread parking demand throughout the parking system, rather than

add capacity. Parking capacity exists within the system, but demand is concentrated in a small area.

Real time message boards that instruct drivers where parking spaces are available increase the efficiency of the parking system, likely reduce traffic and emissions, and reduce the amount of time that drivers need to find parking. The technology is particularly valuable for parkers who are unfamiliar with the local area. The improvement in the technology since the 1990's has resulted in systems that provide significant benefit to their users. A study published by the Federal Highway Administration in 2007 stated that "APMS help people find parking spaces quickly, thereby reducing frustration and enhancing the visitor's experience."¹³⁴

Examples of the use of this technology are presented below.

- The City of Santa Monica has parking space availability displays in front of at least seven of their downtown public parking structures. The information is simultaneously displayed on the internet, a service that will be increasingly valuable as use of devices such as iPhones spreads
- Downtown San Jose has a parking space availability display system with signs located along city streets. The City is expanding the system in order to cover a larger portion of the Downtown area.

In addition to reducing the amount of time necessary for drivers to find parking spaces, these systems offer the added benefit of reducing traffic and queuing, both on public streets and within parking facilities.

Recommendation #250: The Parking Division should implement automated parking display message boards in the downtown in consultation with the Chamber of Commerce.

¹³⁴ Federal Highway Administration, Advanced Parking Management Systems: A Cross-Cutting Study - Taking the Stress Out of Parking, 2007.

(10) There Are No Opportunities for Cost Reductions Within the Parking Services Division Without Reductions In the Level of Service and There Are Not Any Observable Redundancies in Service Delivery.

The City has been in a cost reduction mode for six of the past eight fiscal years. The Parking Services Division has not been exempt from these reductions. There are no observable opportunities to reduce costs within Parking Services Division without reducing levels of service. There are no observed redundancies in Parking Services Division. That is, the Parking Services Division is not consistently delivering services that are also delivered by other Sections in the Public Works Department.

(11) The Parking Services Division Utilizes Appropriate Equipment and Technology.

The Parking Services Division is appropriately equipped to conduct its work. It utilizes the same type of equipment that other cities utilize, and that enable its efficient delivery of services.

14. ADMINISTRATION

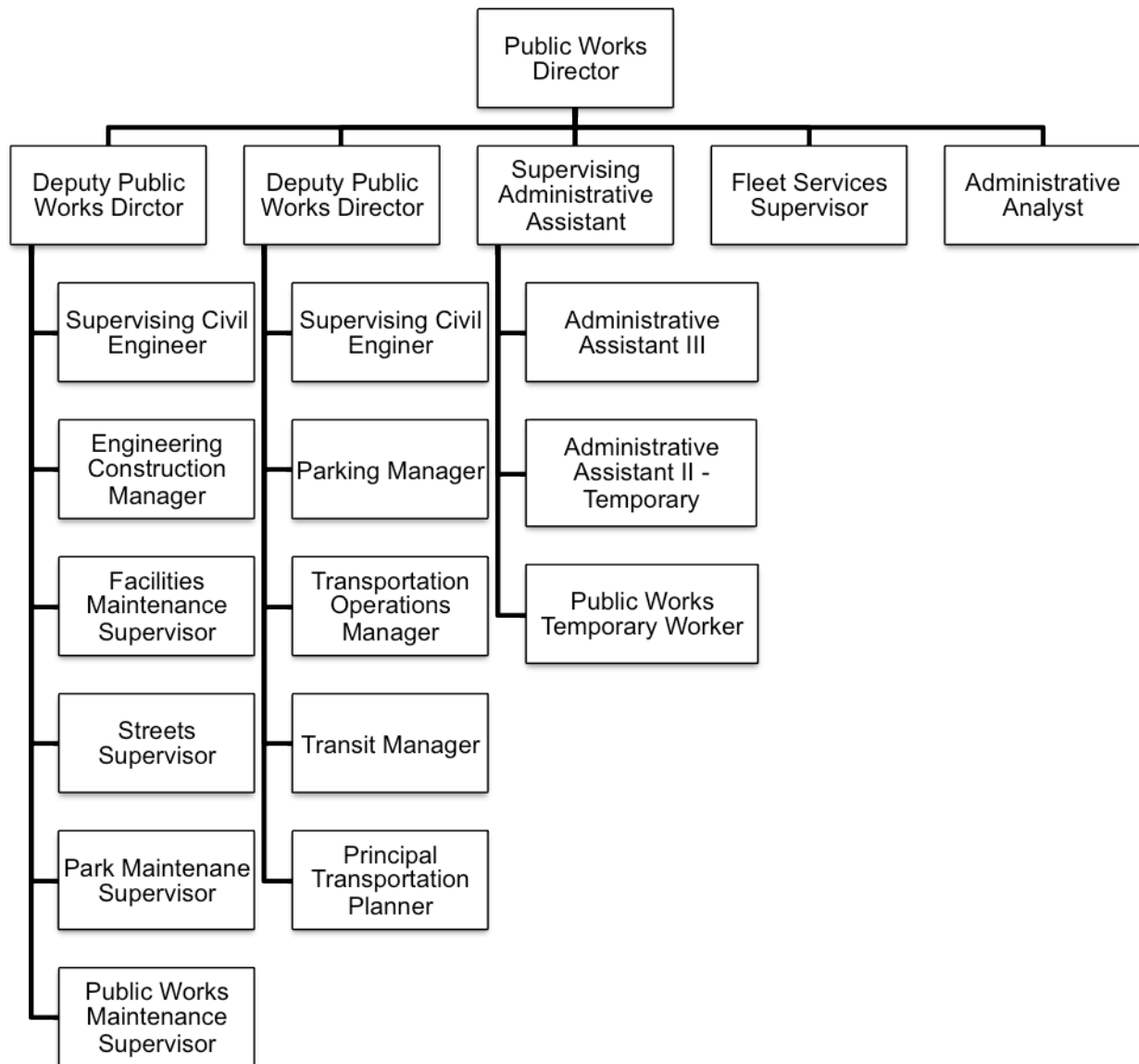
This chapter presents an analysis of the Administration Division. The analysis of the Division includes the adequacy of long-range management planning in terms of strategic planning, goals, objectives and performance measures, staffing, the overall administrative plan of organization, the training of departmental staff, the development of a departmental policies and procedures manual, and the development of a departmental safety program.

1. THE ADMINISTRATION DIVISION IS AUTHORIZED SIX FULL-TIME POSITIONS AND THREE FULL-TIME EQUIVALENT TEMPORARY POSITIONS.

The Public Works Administration Division is responsible of the management and direction of the Department and the provision of centralized analytical and clerical support. The Division has four major activities as noted below.

- Public Works department leadership. Representing Public Works Department programs before the public, the Council, department heads, and other public agencies; refining and articulating the Public Works Department vision and values.
- Organization development. Encouraging teamwork and open communication; reducing response time for service requests; soliciting feedback from customers; adapting new technology to better deliver services; striving to be competitive in quality and cost with the private sector and other top-performing public agencies; recognizing, using, and developing the talents of all Public Works employees.
- Administrative assistance. Preparing the Public Works Department operating and capital budgets; administering human resources and procurement policies; providing clerical services to all Public Works and various Utilities programs.
- Property management. Assessing needs for office, meeting, and storage space; managing remodeling projects to accommodate changing needs; negotiating and closing property acquisitions, sales, and leases.

The administrative plan of organization for the Public Works Department is presented below



The fiscal year 2010-11 budget for the Administration Division is presented in the table below.

Cost Activity	Fiscal Year 2010-11 Budget	% of Total
Staffing	\$939,400	91.33%
Contract Services	\$68,300	6.64%
Minor Operating Expenditures	\$20,900	2.03%
Minor Capital	\$-	0.00%
Total	\$1,028,600	100.00%

As the table indicates, the fiscal year 2010-11 budget for the Administration Division amounts to \$1,028,600.

2. THE ADMINISTRATION DIVISION HAS A NUMBER OF POSITIVE CHARACTERISTICS.

The diagnostic appraisal of the Public Works Department identified a number of positive characteristics in the Administration Division. Examples of these characteristics are presented below.

- The Public Works Department centralizes the public works services delivered by the City with the exception of the golf course.
- The Department will be one of the participants in the City to deploy the EnerGov Land management Suite and the EnerGov Asset management Suite.
- The management layers in the Department can only be described as lean. There are three layers of management and supervision within the Department, as noted previously throughout the report.

The Matrix Consulting Group utilizes guidelines to shape the discussion and development of recommendations regarding management / supervisory layers. These guidelines were developed based upon the research and analysis conducted by a number of other cities and counties that were evaluating the number of management layers and the spans of control in their organizations. These include such cities and counties as Portland, Oregon; King County, Washington; Seattle, Washington; Kansas City, Missouri; etc.¹³⁵

These guidelines recognize situational differences in terms of departmental size, task complexity, etc. The guidelines, for a department such as the Public Works Department with 50 to 150 employees, suggest that not more than four layers of managers and supervisors are appropriate. The Department has three layers of management – the Director, the Deputy Directors, and the supervisors.

- The Department participates in the City's emergency exercises.
- The Department has developed an employee recognition program.

¹³⁵ *City of Portland Span of Control Study*, prepared for the City of Portland Audit Services Division by Public Knowledge, Inc. and The Kemp Consulting Group, 1994.

These strengths in the administration of the Department provide a sound basis for further enhancements.

3. ANALYSIS OF ORGANIZATIONAL STRUCTURE

The fundamental questions in evaluating organizational structure are the efficiency of the plan of organization, the responsibility and accountability of managers and supervisors. The sections below present the consulting teams analysis of the plan of organization for the Administrative Division of the Public Works Director including the Deputy Public Works Directors. The two Deputy Public Works Director positions are budgeted in the Public Works Administration budget program. As a consequence, the analysis of the administrative plan of organization for the Public Works Department is included within this chapter.

(1) There Are Numerous Alternatives in the Organization of Service Delivery By the Public Works Department.

There are a number of alternatives to “grouping” different parts of the organization, and the basis that is used at the highest level plays a fundamental role in shaping the organization. There are four commonly used alternatives.

- **Functional.** Using functions (i.e., engineering, fleet maintenance, building maintenance, etc.) serves as one of the alternatives for structuring the organization. Grouping jobs that require the same knowledge, skills, and resources allows them to be done efficiently and promotes the development of greater expertise. A disadvantage of functional groupings is that staff may develop a narrow focus and have difficulty appreciating other views of what is important to the organization. In addition, coordination of work across functional boundaries can become a difficult management challenge, especially as the organization grows in size and spreads to multiple geographical locations.
- **Geographical.** Organizations that are spread over a wide area may find advantages in organizing along geographic lines so that all the functions performed in a region are managed together. In a large organization, simple physical separation makes centralized coordination more difficult. Also, important characteristics of a region may make it advantageous to promote a

local focus.

- **Asset.** Large, diversified cities and counties are often organized according to asset (i.e., streets, sewers, water, buildings, etc.). All the activities necessary to produce and deliver service for that asset are grouped together. In such an arrangement, the top manager of the asset group typically has considerable autonomy over the operation. The advantage of this type of structure is that the personnel in the group can focus on the particular needs of their asset and become experts in its development, and delivery of its services. A disadvantage, at least in terms of larger organizations, is the duplication of resources. Each asset group requires most of the functional areas.

Each of these three alternatives has their advantages and disadvantages as noted previously. The Public Works Department is organized largely along functions.

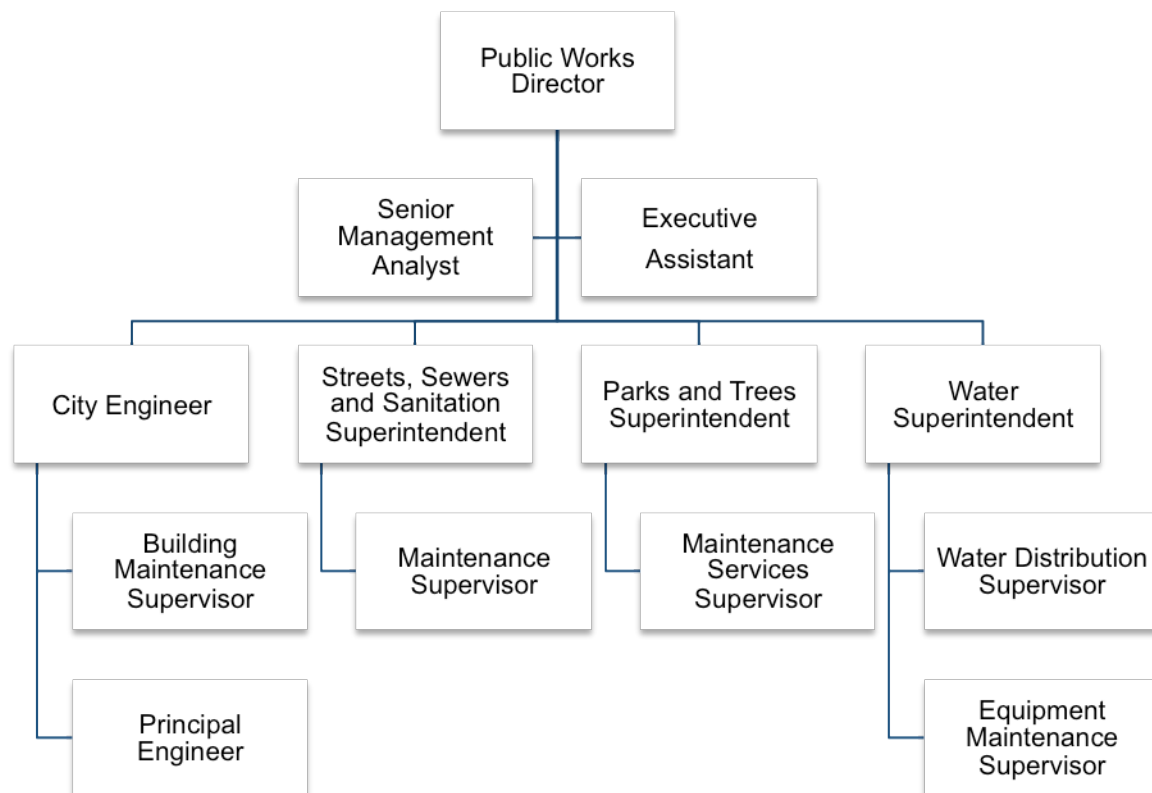
(2) Other Public Works Departments Use A Variety of Approaches to Organize Their Service Delivery.

One rarely finds identical organizational structures from one public works department to another or from one large corporation to another. No one model is intrinsically better than another and no one structure has been shown to improve service levels more than another does. Still, there are lessons to be learned from the approach that other public works departments use to organize their service delivery.

The consulting team documented the approach used to organize five (5) other public works departments: Brea, Campbell, Culver City, Cerritos, and Novato. These cities were chosen due to their **similarity** in population and in the mix of services. Some cities of similar population were excluded due to their extensive reliance on contracting such as Dublin, or due to a much different approach to organization of their public works department i.e., La Mirada and Poway placed their engineering division in their community development department.

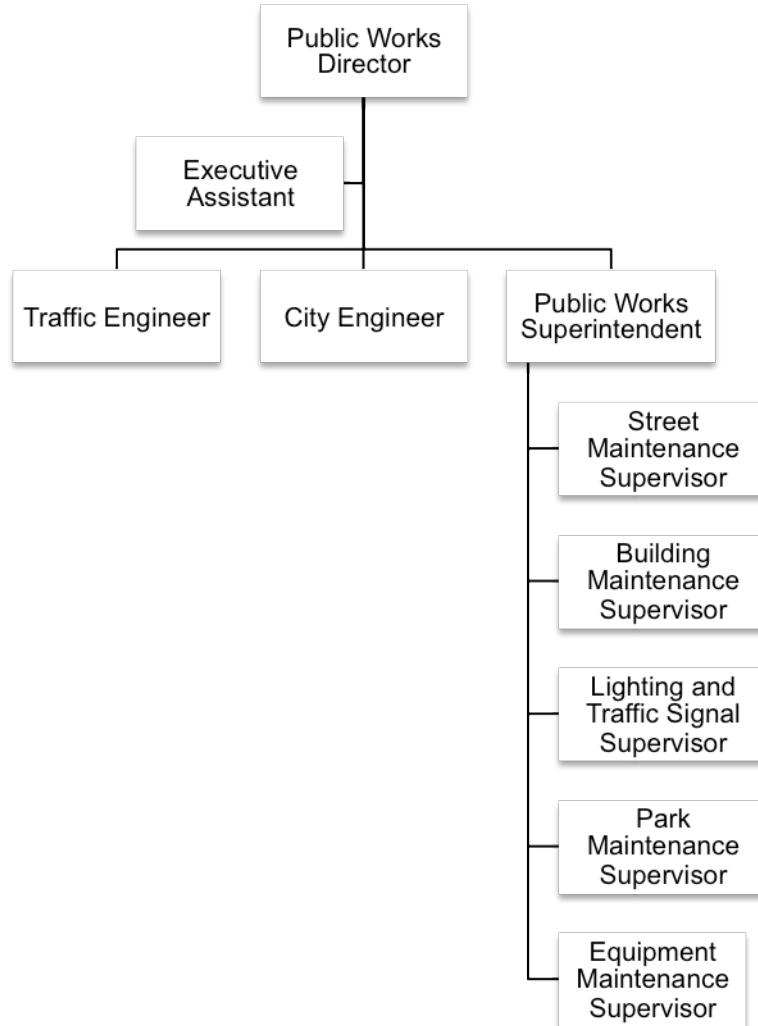
A summary of the organizational approaches used by each of these departments is presented below.

- **Brea.** In 2010, as part of a reorganization plan to streamline City operations and reduce costs, the Engineering Division was moved from the Development Services Department and merged with Maintenance Services Department and to create Public Works Department. The Development Services Department was eliminated; the Maintenance Services Department was eliminated. Public Works is comprised of: Streets and Sanitation, Water Operations, Equipment/vehicle Maintenance, Parks, Facilities and Engineering. The departmental organizational structure is depicted in the chart below.



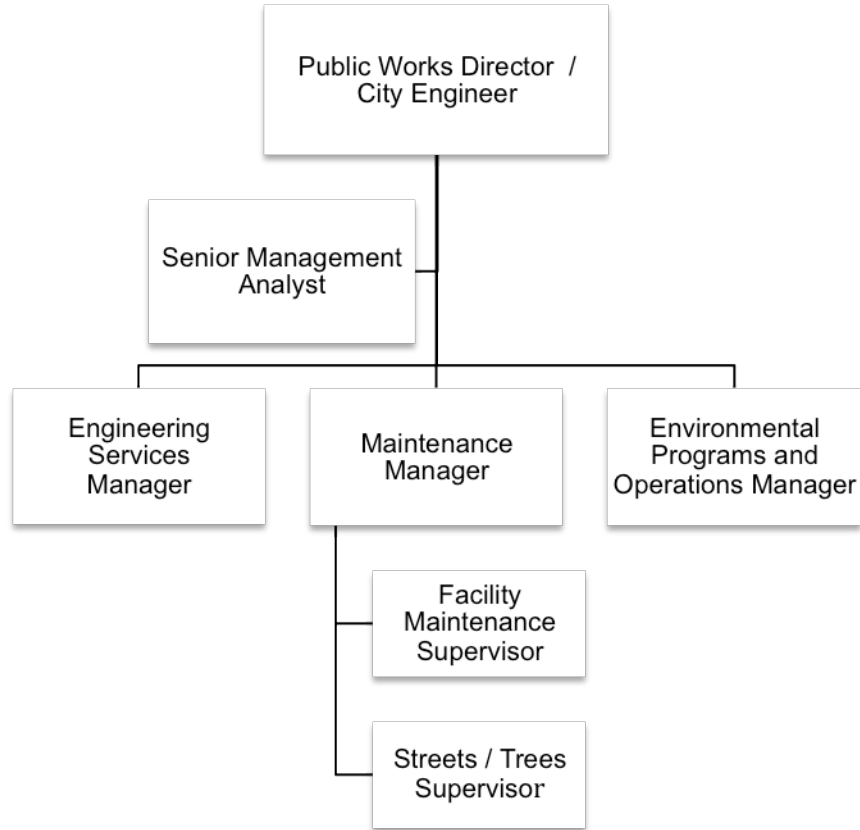
As the chart notes, the Public Works Director has four (4) managers reporting directly to him. This includes water distribution and sewer / wastewater collection. The City Engineer is responsible for supervising building maintenance, while the Water Superintendent is responsible for supervising equipment or fleet maintenance. Brea has a population of 40,400. Its public works department is authorized 57 full-time employees including water distribution and sewer or wastewater collection.

- **Campbell.** The public works department in Campbell includes engineering services (design and construction, environmental services, land development, and traffic engineering) and maintenance services (parks, signals and lighting, streets, and vehicles / equipment). The departmental organizational structure is depicted in the chart below.



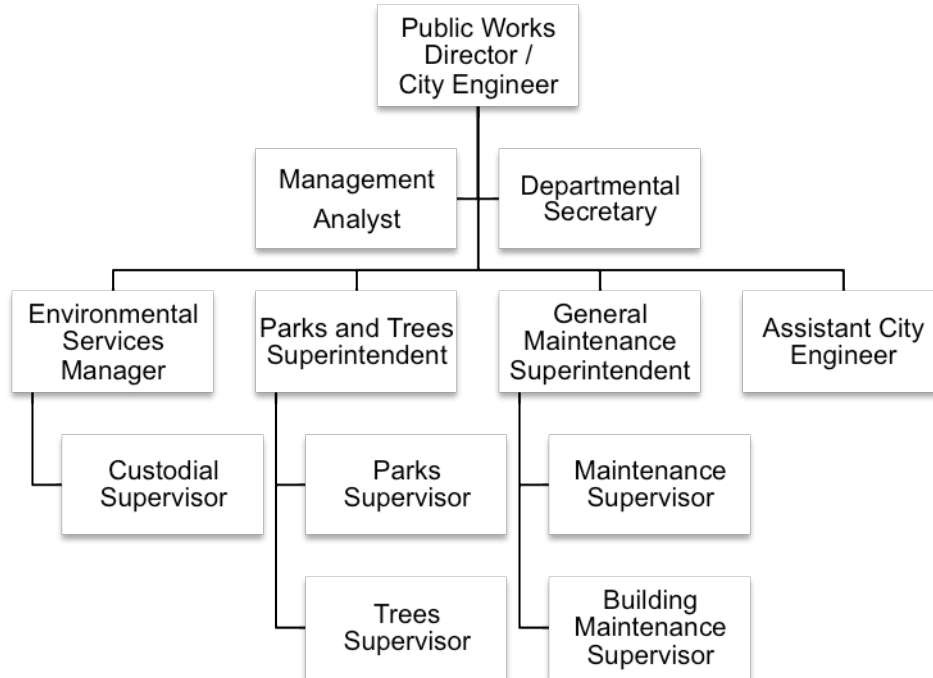
As the chart notes, the Public Works Director has three (3) managers reporting directly to him. This includes a Traffic Engineer, a City Engineer, and a Public Works Superintendent. Campbell has a population of 40,900. Its public works department is authorized 47 full-time equivalent employees.

- **Culver City.** The Public Works Department is responsible for providing engineering services and managing capital improvement projects throughout the City; providing maintenance and repair for the City's fixed assets, which include buildings, streets, sidewalks, storm drains, sewers, traffic signals, street lighting; providing graffiti removal, street sweeping and tree trimming services for the City; providing refuse collection and disposal and sewer collection and disposal services, and managing the City's environmental programs relating to sustainability, energy efficiency, recycling and waste reduction, and water is organized into three (3) divisions: Engineering, Maintenance Operations, and Environmental Programs and Operations. The departmental organizational structure is depicted in the chart below.



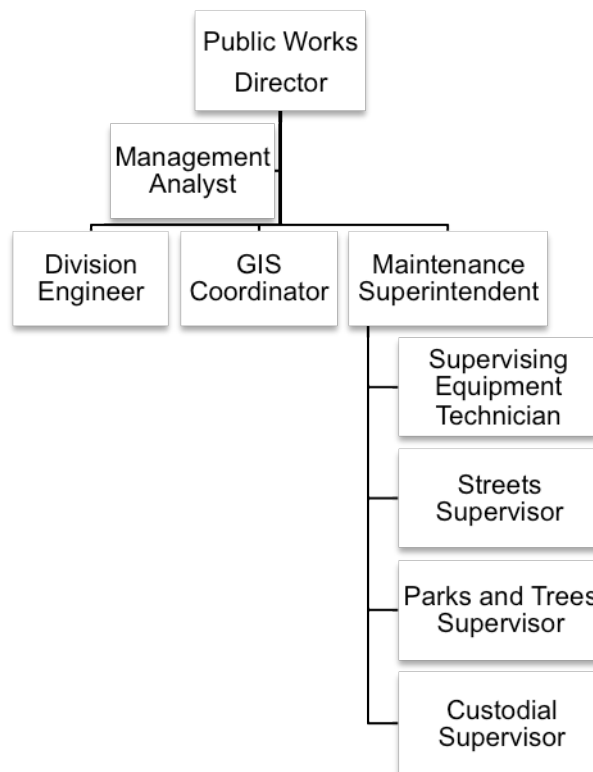
As the chart notes, the Public Works Director has three (3) managers reporting directly to him. This includes an Engineering Services Manager, a Maintenance Manager, and an Environmental Programs and Operations Manager. Culver City has a population of 40,700. Its public works department is authorized 100.4 full-time equivalent employees.

- **Cerritos.** The Public Works Department in Cerritos is responsible for the administration and implementation of the Capital Improvement Program and for providing maintenance services to City facilities. The Department of Public Works is assigned responsibility for managing and maintaining a variety of municipal services and facilities including streets, street lighting, traffic signals, street sweeping, refuse collection, storm drains, sewers, municipal buildings, vehicles and equipment, neighborhood and community parks, a public swim facility, municipal golf course, street trees, medians and parkways. Some of these services are delivered exclusively by contract i.e., street sweeping, traffic signal maintenance, etc. The Department consists of four (4) divisions including the Engineering Division, the Environmental Services Division, the General Maintenance Division and the Parks and Trees Division. The departmental organizational structure is depicted in the chart below.



As the chart notes, the Public Works Director / City Engineer has four (4) managers reporting directly to him. This includes an Environmental Services Manager, a Parks and Trees Superintendent, a General Maintenance Superintendent, and Assistant City Engineer. Cerritos has a population of 54,900. Its public works department is authorized 96 full-time equivalent employees.

- **Novato.** The Public Works Department in Novato is comprised of the Engineering and Maintenance Divisions. These two operating divisions are complementary in achieving the successful design, construction, and operation of the City's public infrastructure. The Engineering Division is responsible for all technical issues related to traffic movement, the design of public facilities (public street, park, building and drainage improvements) and project construction management within the public right-of-way. The Maintenance Division is responsible for the long-term care of all City-owned land and public buildings, and maintenance and repair of streets, storm drains, pumping facilities, parks, median islands, roadside landscaping, street trees, vehicles, and equipment. The departmental organizational structure is depicted in the chart below.



As the chart notes, the Public Works Director has two (2) managers and one (1) coordinator reporting directly to him. This includes a Division Engineer, a GIS Coordinator (who is not a manager), and a Maintenance Superintendent. Novato has a population of 53,400. Its public works department is authorized 58 full-time equivalent employees. (It should be noted that the department is transitioning to one (1) Division Engineer position; at the present time, it has two (2) Principal Civil Engineers, and while the GIS Coordinator supervises 1.75 full-time equivalent positions, one of these positions will be eliminated in fiscal year 2011-12.)

Important points to note regarding the plan of organization used by the public works departments are presented below.

- **Many of these public works department deliver a different mix of services than San Luis Obispo.** Indeed, unlike these other five cities, the Public Works Department delivers transit and parking structure / enforcement services. However, some of these other public works department include services not included in San Luis Obispo such as maintenance and repair of wastewater collection systems, water distribution systems, solid waste collection / contract management,
- **Four (4) of these five (5) cities (the exception being Novato) had more managers reporting to the Public Works Director than does the Public**

Works Director for San Luis Obispo. The reason for that is the departments had more managers. The trade-off is that these cities have fewer supervisors. San Luis Obispo has fewer managers – only two Deputy Public Works Director – but more first-line supervisors (even excluding the Transit Manager and the Parking Services Manager in the San Luis Obispo Public Works Department in this comparison.)

- **Four (4) of these five (5) cities integrated their traffic engineering function within their Engineering Division (with the exception of Campbell).** These cities have not chosen to deemphasize traffic engineering. Rather these cities have chosen to integrate these two functions so that the staff in these two functions can be supportive of each other as workloads and service demands shift.
- **Each of these cities had at least one (1) full-time maintenance manager.** In some cases, there was more than one (1) full-time maintenance manager. These positions had no other responsibilities except managing the maintenance and repair. This is not surprising. The most expensive assets a city owns are the assets maintained and repaired by a public works department including streets, stormwater collection, parks, urban forest, buildings, fleet, etc.
- **Not one of these cities had both a manager for capital projects design and a manager for construction management.** The exception was Novato; however, Novato is eliminating one of the two positions and consolidating these managerial positions into one: a Division Engineer. The Public Works Department in San Luis Obispo has both a Supervising Civil Engineer and an Engineering Construction Manager. This may reflect differences in construction workload.
- **Three (3) of these five (5) public works departments include some aspects of utilities.** Brea includes water distribution and wastewater collection. Culver City and Cerritos include wastewater collection.

As noted earlier. No one model is intrinsically better than another and no one structure has been shown to improve service levels more than another does. Still, there are lessons to be learned from the approach that other public works departments use to organize their service delivery.

(3) A Number of Principles Should Be Utilized to Evaluate the Administrative Plan of Organization of the Public Works Department.

In evaluating the administrative plan of organization for the Public Works Department, the Matrix Consulting Group utilized a number of principles for organizational structure. These principles are presented in the paragraphs below.

- **The Public Works Department should be organized on a ‘form follows function’ basis** with a clear, distinct and comprehensive sense of purpose or mission for each division. Functions are grouped consistent with their periodic interaction, management systems, and delivery of services that are linked in some way, etc., resulting in functional cohesion.
- **The Department’s organizational structure should foster accountability.** The organizational structure fosters accountability among management and supervisory staff.
- **The plan of organization should enhance communication and coordination.** The number of handoffs/exchanges required among different divisions providing service to the public is minimized. The structure enhances shared knowledge and understanding among divisions. 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. Processes can be standardized to enhance the efficiency and customer responsiveness of services (e.g., the maintenance management process).
- **The potential of human capital should be maximized.** The plan of organization enhances career development opportunities, training, and recruitment and retention.
- **The services provided to customers should be responsive.** The plan of organization enables staff to provide better service to the public. Customers are the hub – with the Public Works Department designed around them.
- **Each division in the Public Works Department should be placed at a level in accordance with its importance in achieving departmental goals.** Divisions have not been placed too high in the departmental 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.
- **The number of layers of management should not result in a tall, narrow configuration for the Public Works Department.** 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 should enhance the effectiveness of the Public Works Director.** The organizational structure limits the span of control of the Public Works Department Director, provides analytical support to develop goals, objectives, and performance measures, and provides resources to build and connect with the communities in San Luis Obispo.

Reorganization efforts that ignore these principles could create new, unintended and unfortunate consequences for the future.

(4) There Are A Number of Advantages and Disadvantages to the Present Plan of Administrative Organization for the Public Works Department.

The advantages and disadvantages to the current plan of organization are presented in the table below.

Advantages	Disadvantages
• The consolidation of the City's infrastructure management services within the Public Works Department aids process efficiency and standardization of those services and management accountability. • The current structure only has three management and supervisory layers. • The Department is authorized an Administrative Analyst to provide analytical support to management.	• The span of control for the two Deputy Public Works Directors is wider than that typically found in the other public works departments surveyed by the consulting team. • The responsibility for civil engineering is split among two Deputy Public Works Directors unlike that of the other public works departments surveyed by the consulting team. • Unlike the plan of organization in the other public works departments surveyed by the consulting team, the Public Works Department lacks a dedicated maintenance manager. Rather, each Deputy Public Works Director splits their responsibility between supervising engineering, transit, parking, and maintenance. Neither Deputy Director are based at the City's corporation yard. • The Fleet Services Division is not placed at a level in accordance with its importance in

Advantages	Disadvantages
	achieving departmental goals. The Fleet Services Division reports directly to the Public Works Director. • The lines of accountability and functional cohesion are unclear in regards to the management of maintenance services. There are two managers responsible for this service: the Deputy Director (City Engineer) and the Public Works Director. • The current structure impedes sharing of knowledge and resources in delivery of engineering services. Different Deputy Directors are responsible for different aspects of engineering. • The Department's organizational structure increases administrative overhead given the number of supervisors.

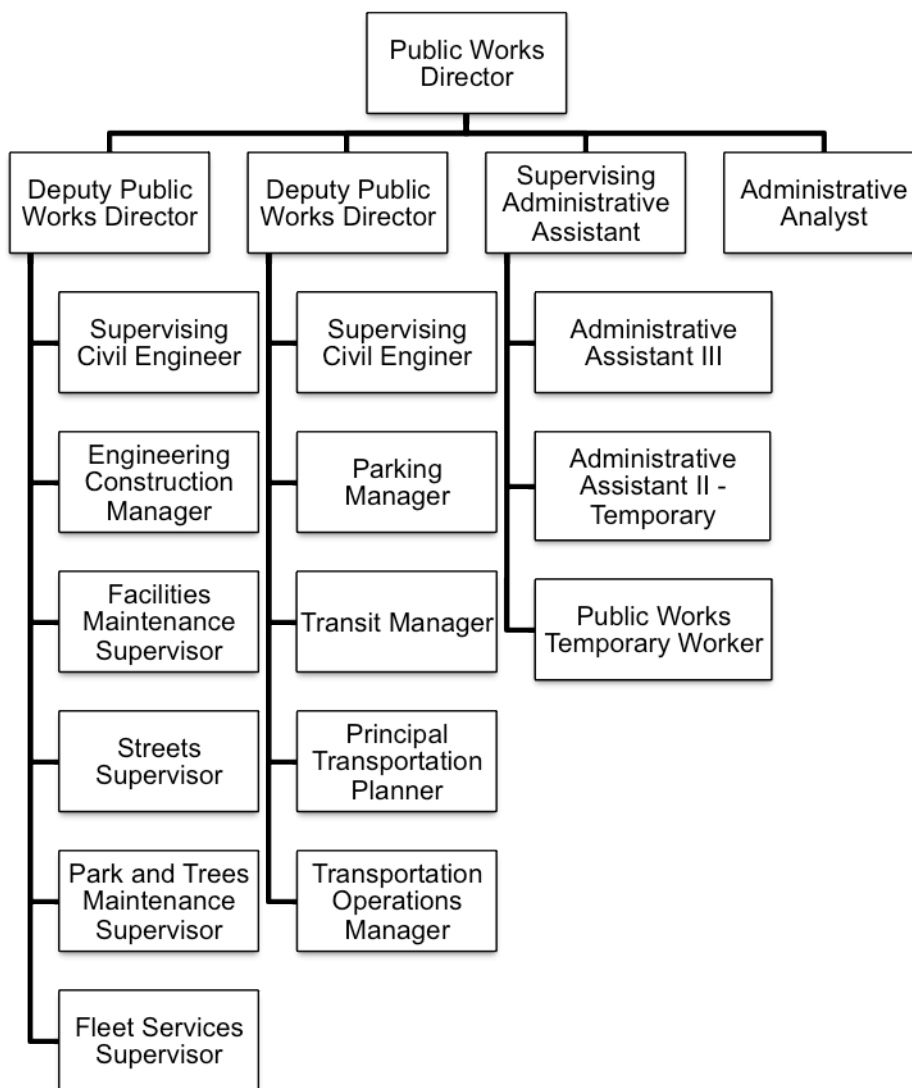
The current plan of organization clearly offers a number of disadvantages. However, the current plan of organization has a number of disadvantages, however.

The Matrix Consulting Group does not recommend that the Department maintain its current plan of organization given these issues. It is recommended that the Department modify its plan of organization in two steps. The first step is a short-term plan of organization that is built around the existing managerial and supervisory incumbents. The second step – a longer-term plan of organization – reflects adjustments to the plan that should occur as the turnover of managers and supervisors occurs. Each of these proposed plans of organization are presented below.

(5) In the Short-Term, the Plan of Organization for the Public Works Department Should Be Modified to a Minor Extent.

The proposed short-term plan of organization for the Public Works Department is presented on the following page. Important points to note concerning this proposed plan are presented below the plan of organization.

Proposed Short-Term Plan of Organization



- **The Public Works Maintenance Supervisor position assigned to the Urban Forestry Division should be eliminated through attrition.** At the present time, a Public Works Maintenance Supervisor supervises one (1) Arborist / Urban Forester, two (2) Tree Trimmers and a little more than one (1.1) full-time equivalent temporary workers in the Urban Forestry Division.

However, the span of control for the Public Works Maintenance Supervisor is four (4), far less than the minimum guideline of 1 to 10 used by the Matrix Consulting Group.

The Public Works Maintenance Supervisor position should be eliminated through attrition. The responsibility for the supervision of contracts regarding

restroom cleaning, landscape services provided to sound walls, median strips, and various other locales, sidewalk power wash cleaning, stump removal and stump grinding, and railroad center right-of-way maintenance should be reassigned to the Park Maintenance Supervisor. (This issue was discussed in more detail in Chapter 4).

- **The Fleet Services Supervisor should report to the Deputy Public Works Director / City Engineer.** This would place all of the maintenance functions based at the corporation yard under one (1) Deputy Director – the Deputy Director / City Engineer. It is worth noting that the Deputy Director / City Engineer averages approximately 300 hours annually of 17% of available work hours for the Municipal Stormwater Program. The work includes document preparation such as additions or amendments to the municipal code, development of standards and guidelines, reporting results, and ultimately the upcoming production of the hydromodification management plan. However, the Matrix Consulting Group recommended earlier in this report – in chapter 2 regarding asset management – that the Street Supervisor be assigned responsibility for the management of street, stormwater, traffic signal, regulatory street sign, waterway, and bridge assets. The assignment of responsibility for these assets to the Street Supervisor should include the transition of some of the work currently performed by the Deputy Director / City Engineer in regards to the Municipal Stormwater Program.

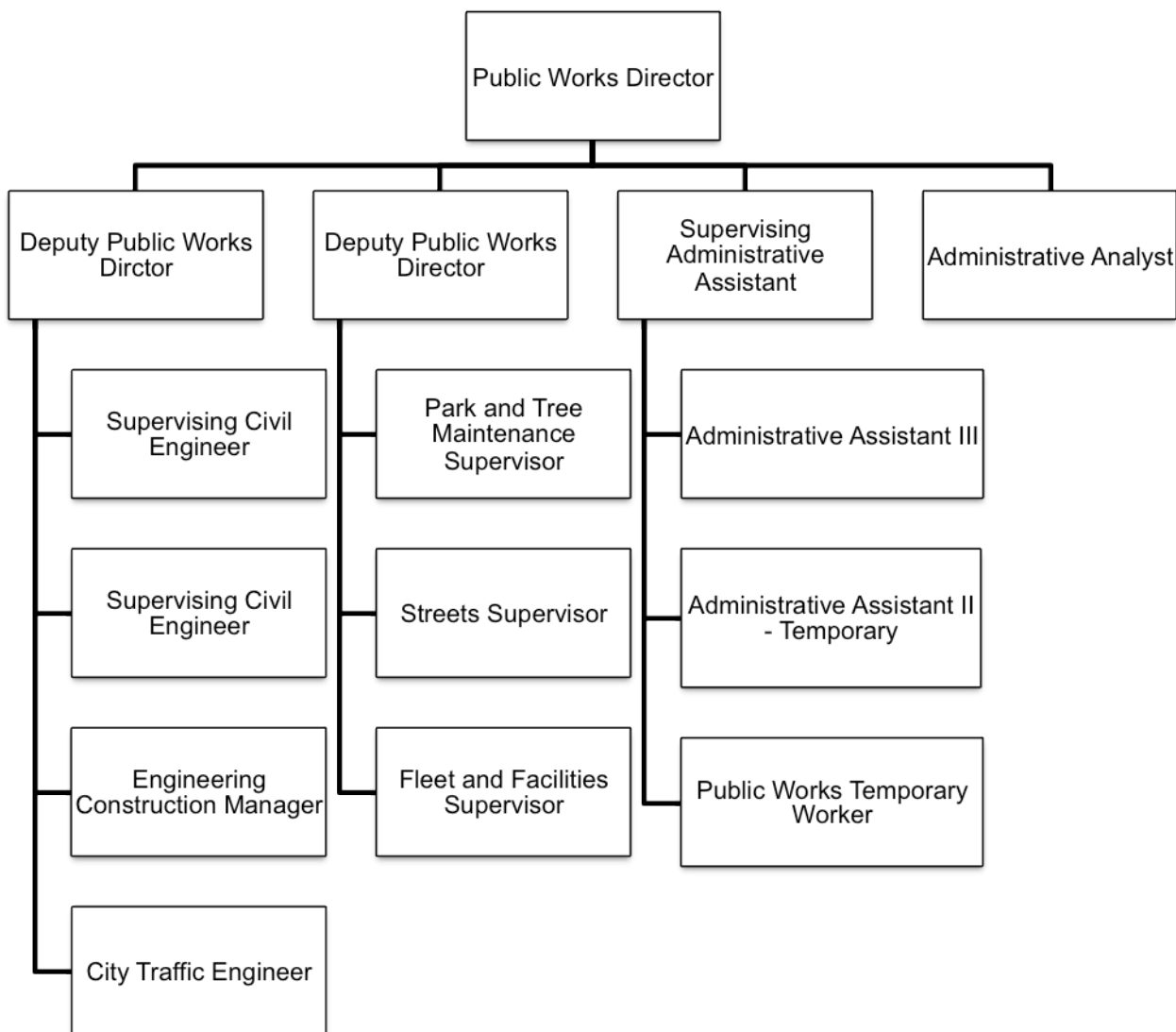
Overall, this short-term plan of organization is designed to reduce the span of control of the Public Works Director so that this executive can direct the implementation by the department of the recommendations within this report, and enhance the extent of strategic and long-term planning on behalf of the Department. It is also designed to begin to reduce the number of supervisors within the Department by eliminating the Public Works Maintenance Supervisor position (through attrition) assigned to Urban Forestry and combining this program with Park Maintenance (as previously recommended in Chapter 4).

Recommendation #251: The Fleet Services Division should report to the Deputy Public Works Director / City Engineer, and not the Public Works Director.

(6) In the Longer-Term, the Public Works Department Should Expand Its Management Capacity, and Reduce the Number of First-Line Supervisors.

The proposed long-term plan of organization for the Department is presented below. Important points to note regarding the proposed plan are presented below the plan of organization.

Proposed Long-Term Plan of Organization



- **All of the engineering services would be consolidated under the Deputy Public Works Director / City Engineer.** This would include the Supervising Civil Engineer for Capital Projects Design, the Supervising Civil Engineer for

Engineering Development Review, the Engineering Construction Manager, and the City Traffic Engineer. The Transportation Operations Manager would be reclassified to City Traffic Engineer, and assume responsibility for the supervision of the Principal Transportation Planner (as recommended previously in Chapter 10), the Transit Manager, and the Parking Services Manager. This would result in a span of control of five (5) full-time staff – an Engineer II, a contract Engineer, the Principal Transportation Planner, the Transit Manager, and the Parking Services Manager.

- **The second Deputy Public Works Director would assume responsibility for managing maintenance services.** The Deputy Public Works Director would supervise the Parks and Trees Supervisor, Streets Supervisor, and a Fleet and Facilities Supervisor. This third Deputy Public Works Director would be physically based at the corporation yard, unlike the other Deputy Public Works Director. The Fleet and facilities Supervisor represents a consolidation of two existing supervisory positions: the Facilities Maintenance Supervisor and the Fleet Services Supervisor. **This change should occur through attrition.** To compensate for the combination of these two supervisory positions, a lead Heavy Equipment Mechanic position should be created, as an upgrade of an existing Heavy Equipment Mechanic position, and a lead Building Maintenance Technician position should be created, as an upgrade of an existing Building Maintenance Technician position.

The estimated annual cost impact of these recommendations in salary and fringe benefits is presented in the table below.

Recommendation	Annual Cost Increase	Recommendation	Annual Cost Decrease
Authorize a Fleet and Facilities Supervisor position	\$99,100	Eliminate the Facilities Maintenance Supervisor position	\$99,100
Upgrade an existing Heavy Equipment Mechanic to Lead Heavy Equipment Mechanic	\$11,400	Eliminate the Fleet Services Supervisor position	\$99,100
Upgrade an existing Building Maintenance Technician to Lead Building Maintenance Technician.	\$11,400		
TOTAL	\$121,900	TOTAL	\$198,200

Recommendation #252: In the long-term, all of the engineering services would be consolidated under the Deputy Public Works Director / City Engineer. This should include the Supervising Civil Engineer for Capital Projects Design, the Supervising Civil Engineer for Engineering Development Review, the Engineering Construction Manager, and the City Traffic Engineer.

Recommendation #253: In the long-term, City Traffic Engineer should assume responsibility for the supervision of the Principal Transportation Planner (as

recommended previously in Chapter 10), the Transit Manager, and the Parking Services Manager. This would result in a span of control of five (5) full-time staff – an Engineer II, a contract Engineer, the Principal Transportation Planner, the Transit Manager, and the Parking Services Manager.

Recommendation #254: In the long-term, the Facilities Maintenance Supervisor position and the Fleet Services Supervisor position should be eliminated.

Recommendation #255: In the long-term, a Fleet and Facilities Supervisor position should be authorized.

Recommendation #256: In the long-term, an existing Heavy Equipment Mechanic should be upgraded to Lead Heavy Equipment Mechanic.

Recommendation #257: In the long-term, an existing Building Maintenance Technician should be upgraded to Lead Building Maintenance Technician.

4. ANALYSIS OF STAFFING

This section provides an analysis of the workload and staffing levels of the Administrative Division including the potential of alternative service delivery, if any.

(1) The Temporary Support Staff Assigned To Engineering Services Should Be Converted To Permanent Full-Time.

The Administration Division allocates a temporary support position for the Capital Projects Design Division and the Construction Management Division. This support staff is temporary, but works the same 40-hour work schedule as other City employees. This temporary staff has worked for the Public Works Department for several years.

This temporary staff provides a number of critical services for the Capital Projects Design Division and the Construction Management Division that begin with the award of the construction contract by the City Council such as those tasks noted below.

- Advertising the construction contract and setting up the project in the Encroachment database.

- Processing construction contract documents required to award the contract including the bonds and insurance.
- Tracking the award of construction contracts to disadvantaged business enterprises in a Microsoft Excel spreadsheet.
- Issuing the notice to proceed to the construction contract including defining the start date for the construction contract and the date for completion.
- Setting up the pre-construction meeting.
- Preparing the filing of the notice of completion upon completion of construction.
- Maintaining electronic files for construction projects.

These tasks comprise a full-time job given the current volume of capital projects that are being handled by the Capital Projects Design Division and the Construction Management Division. Some employee has to perform these tasks. It is cheaper and more effective to assign this responsibility to clerical support staff and not professional, paraprofessional engineers, or engineering inspectors.

Recommendation #258: The temporary support staff for the Capital Projects Design Division and the Construction Management Division should be converted to permanent full-time.

(2) The Administrative Assistant Staffing Levels Within the Administrative Division Should Be Maintained, and Not Increased or Decreased.

The role of secretaries and administrative assistants has evolved over the past twenty (20) years with the advent of personal computers and word processing software. While increasing office automation and organizational restructuring will continue to make secretaries and administrative assistants more productive in coming years, the use of automated equipment also is changing the distribution of work in many offices. In some cases, such traditional secretarial duties as keyboarding, filing, photocopying, and bookkeeping are being assigned to workers in other units or

departments. Professionals and managers increasingly do their own word processing and data entry and handle much of their own correspondence rather than submit the work to secretaries and other support staff.

As a consequence, the staffing levels for secretaries and administrative assistants in terms of the ratios to the professional and paraprofessional staff that they support have evolved as well as these roles have changed.

The Administrative Division is authorized three (3) full-time support positions and a little more than one (1.2) full-time equivalent temporary positions. The roles and responsibilities of these positions, as described within the corrected profile provided by the Public Works Department, are presented below.

- The administrative support services provide all administrative and paraprofessional support to the Department including some support to Parking Services.
- The Supervising Administrative Assistant, reporting directly to the Director of Public Works, provides supervisory oversight over one (1) full-time regular employee, one (1) full-time contract temporary employee and two (2) part-time temporary clerical positions. The Supervising Administrative Assistant also serves as the Department's Public Information Officer providing media coordination, composing press releases, communicating internally with other departments, and leading the preparation of the Department's first Annual Report.
- The administrative support services provides back up support to the Administrative Analyst as fiscal officer and prepares and tracks personnel documents for Department.
- One (1) Administrative Assistant III is assigned to the Corporation Yard, providing clerical assistance to both the public works and utilities departmental staff; answering phones and dispatches; inputting work order information; processing payment vouchers; assisting in the Community Service worker program; supporting the Tree Committee and the Public Works Maintenance Supervisor; and performs other duties as assigned.
- One (1) temporary contract employee provides Administrative Assistant II-level duties. This position provides 40-hr per week "specialized" duties assisting CIP

Construction and Engineering through legal processes and ensuring compliance. This position performs very little, if any, “clerical” work. This position provides assistance to Engineering Capital Projects Design and Construction Management, helping with capital improvement program administrative paperwork, project folder maintenance, etc. Additionally, the position performs department mail runs and other duties as assigned

- One (1) Public Works Temporary Worker works 16 hours per week (0.4 FTE) providing support and coverage for the Administrative Assistant III position at the Corporation Yard including support for the public works and utilities departments. Additionally, the position provides payment processing for Department invoices, time sheet processing every other week, reviewing documents for accuracy, etc.
- One (1) Public Works Temporary Worker works 24 hours per week (0.6 FTE) providing clerical support at the Department’s main office; answering phones; providing photocopying; supporting the Supervising Administrative Assistant and the temporary contract employee assisting in records retention; processing project-related insurance requirements; and performs other duties, as assigned.

Overall, this represents the equivalent of a little more than four (4.2) full-time equivalent support staff in the Administrative Division. The staff provides support to approximately thirty (30) staff excluding the Parking Services Division and staff at the Corporation Yard including the Utilities Department. This represents a ratio of one (1) support position for every seven (7) positions. This is not an unreasonable ratio. This ratio, however, needs to recognize that the Supervising Administrative Assistant allocates a significant proportion of her time to public and media relations.

Recommendation #259: The number of authorized administrative assistant positions within the Administrative Division should be maintained.

5. ANALYSIS OF OPERATIONS AND MANAGEMENT

This section provides the consulting team’s analysis of the opportunities for improvement in the operations and management systems for the Administrative Division.

In conducting this analysis, the project team utilized best practices found in other cities and its own experience in analyzing administrative practices in cities for over thirty (30) years, the best practices cities by other management consultants, and the practices of other cities with well managed administrative programs. The consulting team could discern few applicable best management practices in the *American Public Works Association's Public Works Management Practices Manual*.

(1) The Public Works Department Should Develop A Clearly Written Five-Year Strategic Plan.

The *American Public Works Association's Public Works Management Practices Manual* is a tool that public works departments can use to develop or improve existing practices, enhance performance, increase productivity. Management Practice 1.6 states "the agency has developed and implemented a strategic plan." The strategic plan should include levels of service, planning goals and objectives, plan monitoring, plan documentation, goals and objectives, etc.¹³⁶

Why develop a strategic plan?

Public sector managers are often so preoccupied with immediate issues that they lose sight of their ultimate goals. That's why a strategic plan is a virtual necessity. for the Public Works Department. The best practices regarding development of a strategic plan that should be utilized by the Public Works Department are presented in the table below:

The department has a multi-year strategic plan with annual goals and measurable objectives based on identified needs, projected workload, and expenditures and revenues.
The department maintains and publishes a clearly written, multi-year (five years at a minimum) strategic plan to provide vision and direction for the department. The plan links citywide and department goals.

¹³⁶ American Public Works Association, Management Practices Manual, 2004.

In developing the strategic plan, the department: • Identifies and formally adopts a limited number (5 to 10) of departmental priorities to guide the department's strategies and major financial and program decisions; • Considers the impacts of the city's financial condition, current expenditures by the department, and opportunities to reallocate staff and other resources to enhance performance; and • Instructs departmental management on how these priorities should be considered in making program and budget decisions.
The strategic plan clearly delineates the department goals, and objectives and strategies for achieving them. In developing these strategies, the department considers alternative service delivery systems such as outsourcing.
The plan also delineates the priorities the City Council and City Manager assign to its goals, objectives, and strategies.
The objectives in the strategic plan are measurable, and the department has set annual objectives for each goal for at least five years into the future.
The department's goals, objectives, and performance measures are based on past performance, identified needs, projected workload, and expenditures and revenues.
The plan delineates the managers responsible for implementing the strategies in the plan and the time frames for implementation.
The department head annually assesses the progress the department has made toward achieving the goals and objectives in the plan.

A summarized description of the development of a strategic plan is presented in the exhibit following this page.

In developing the strategic plan for the department, the Department should (1) identify its strengths, weaknesses, threats (e.g., slowdown in growth of City revenues), and opportunities (e.g., use of EnerGov); (2) develop a vision and mission statement for the Department; (3) define the goals, objectives and strategies the Department will utilize to achieve those goals, objectives and strategies; and (4) define the managerial responsibilities for accomplishing those goals, objectives and strategies.

Recommendation #260: The Public Works Department should develop a clearly written, five-year minimum, Strategic Plan.

Recommendation #261: The Public Works Director should direct staff, as appropriate, to develop and implement the Department's strategic plan.

(2) Each Division Within The Public Works Department Should Develop Goals, Objectives, And Performance Measures.

The Governmental Finance Officers Association (GFOA) recommends a number of best practices regarding the development of goals, objectives, and performance measures. GFOA “encourages all governments to utilize performance measures as an integral part of the budget process. Over time, performance measures should be used to report on the outputs and outcomes of each program and should be related to the mission, goals and objectives of each department. Governments in the early stages of incorporating performance measures into their budget process should strive to:

- Develop a mission statement for government and its service delivery units by evaluating the needs of the community;
- Develop its service delivery units in terms of programs;
- Identify goals, short- and long-term, that contribute to the attainment of the mission;
- Identify program goals and objectives that are specific in timeframe and measurable to accomplish goals;
- Identify and track performance measures for a manageable number of services within programs;
- Identify program inputs in the budgeting process that address the amount of resources allocated to each program;
- Identify program outputs in the budgeting process that address the amount of service units produced;
- Identify program efficiencies in the budgeting process that address the cost of providing a unit of service;
- Identify program outcomes in the budgeting process that address the extent to which the goals of the program have been accomplished;
- Take steps to ensure that the entire organization is receptive to evaluation of

performance;

- Integrate performance measurements into the budget that at a minimum contains by program the goals and input, output, efficiency and outcome measures; and
- Calculate costs and document changes that occur as a direct result of the performance management program in order to review the effectiveness it."¹³⁷

The City's budget document does not contain an overarching goal for each program. It merely contains a description or descriptions of the program. While the programs do contain what are described as objectives, the objectives are not, in fact, objective per se.

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.¹³⁸¹³⁹¹⁴⁰ Objectives should be specific, measurable, achievable, realistic, and time-based. In addition, the performance measures used within the budget are largely workload measures, not output measures.

Each Division head should be held accountable for developing goals, objectives, and performance measures and presenting them to the Deputy Directors each year as part of their budget proposal.

The development of goals, objectives and performance measures at the Division level by the Department should consider the guidelines presented below.

¹³⁷ Government Finance Officers Association, Best Practice - Performance Management: Using Performance Measurement for Decision Making, 2007.

¹³⁸ Fairfax County, Virginia, A Manual for Performance Measurement, 2005.

¹³⁹ National State Auditors Association, Best Practices in Performance Measurement – Developing Performance Measures, 2004.

¹⁴⁰ National Performance Management Advisory Commission, A Performance Management Framework for State and Local Government – From Measurement and Reporting to Management and Improving, 2010.

- **Goals could be developed for each Division.** These goals could give specific direction on how the sections will contribute to the mission and goals of the Department. These goals could be not quantifiable. These goals could span multiple years.
- **Objectives could be developed for each Division.** Objectives are outcome-based statements of what specifically will be achieved within the fiscal year. Each Division could have 7 to 9 objectives. The objectives could clearly demonstrate progress toward the goal of the Division. These objectives could be written to allow measurement of progress, and be quantifiable.
- **Performance measures could be developed for each objective.** Performance measures could convey the extent to which an objective has been met. These measures could include a range of indicators including input, output, efficiency, service quality and outcome. For example, an input measure would be the value of the resources used to produce output such as the dollars spent on contract seal coating of streets or the staff hours used to remove and replace street surface failures. An output measure is the quantity or number of units produced such as the curb miles that were swept. An efficiency measure is the inputs used per unit of output such as the cost per preventive maintenance of each traffic signal cabinet. A service quality measure is the degree to which customers are satisfied with a program or how accurately or timely a service is provided such as the frequency that all of the water distribution valves are exercised. An outcome measure is the qualitative consequences associated with a program or service – the ultimate benefit to a customer. An example would be the amount of claims paid by the City for tripping over sidewalks.
- **The Department could develop reliable and accurate data to measure performance using EnerGov.** Each performance measure needs a consistent reliable data source. The Department should use EnerGov to generate this data. Departmental management and staff could work closely together to define the method and frequency of data collection.
- **The Department should communicate and use performance measurement data for decision-making and accountability reporting.** Top management of the Department should communicate their commitment to the value and use of goals, objectives, and performance measures to all Departmental supervisors. Management could involve supervisors in the development and reporting of goals, objectives, and performance measures. The Departmental managers could communicate the results of these goals, objectives, and performance measures internally to its staff.

Each Division head should report quarterly to their Deputy Director regarding their progress in achieving their goals and objectives using the performance measures as a measure of progress.

Concurrently, the Public Works Director should direct staff, as appropriate, to provide training and technical assistance to supervisors regarding how to collect the data needed to track their activities against established goals, objectives, and performance measures. The Public Works Director should direct staff, as appropriate, to compile data gathered by these supervisors on a regular basis, and generate a report quarterly for the supervisors and top management of the Department.

A sample quarterly report – for the Fleet Services Division – is presented in the exhibit following this page.

Recommendation #262: The Department should develop goals, objectives, and performance measures.

Recommendation #263: The Public Works Director should direct staff, as appropriate, to provide training and technical assistance to the Department's supervisors in the development of goals, objectives, and performance measures.

Recommendation #264: The Public Works Director should direct staff, as appropriate, to provide the necessary training and technical assistance to the Department's supervisors required for collecting performance data.

Recommendation #265: The deployment of EnerGov in the Public Works Department should integrate the development of goals, objectives, and performance measures.

Recommendation #266: The Public Works Department should develop a quarterly report that documents the accomplishment of each Division within the Department in terms of performance measures.

Exhibit 17

**Sample Quarterly Performance Report
For the Fleet Services Division**

Performance Measure	This Quarter	Last Quarter	This Year To Date	Last Year to Date
% of PM work completed within 10% of due date				
Operating and Maintenance Costs Per Mile Per Class of Vehicle				
Customer Satisfaction (Based Upon Point of Sale Surveys using Survey Monkey)				
% of Mechanic Available Work Hours Charged to Work Orders				
% of work orders completed within one Work Day, one to two workdays, and greater than two workdays				
Average Fleet Age By class of vehicle				
Fully burdened labor rate per hour				
% of work orders that are scheduled, % of work orders that are preventive maintenance, and % of work orders that are corrective repairs				
% io work orders that are repeat work				

(3) Policies And Procedures For The Public Works Department Should Be Updated.

The *American Public Works Association's Public Works Management Practices Manual* is a tool that public works departments can use to develop or improve existing practices, enhance performance, increase productivity. Management Practice 1.4 states "the organizations policies, practices, and procedures are periodically reviewed and / or updated to reflect actual practices."¹⁴¹

The Public Works Department has written policies and procedures, but these policies and procedures are fifteen (15) to twenty (20) years old.

The Public Works Department should update the policies and procedures manual to guide its supervisors and staff and assure uniformity in the critical processes of the Department. In developing policies and procedures for the Department, the following approach should be utilized.

- Minimize. The policies and procedures should be kept to a minimum.
- 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.
- Short is better than long. It is not the quantity, but the quality of information that is the essential problem of the information age.
- The policies should be available on the Department's intranet site. This should facilitate easy updating.

¹⁴¹ American Public Works Association, Management Practices Manual, 2004.

The Public Works Director should direct staff, as appropriate, to update the policies and procedures manual including working with top management and supervisors of the Department to determine the priorities for the updating of the policies and procedures, and what policies and procedures are relevant.

Recommendation #267: The Public Works Department should update its departmental policies and procedures.

Recommendation #268: The Public Works Department should establish a policies and procedures committee, consisting of five to seven staff, that includes a representation of supervisors from all sections.

Recommendation #269: The Public Works Director should direct staff, as appropriate, to update the policies and procedures manual working with the policies and procedures committee.

(4) A Formal Safety Management Program Should Be Established And Implemented For The Public Works Department.

Why should an employer care about effective employee safety programs?

Besides the intrinsic value of investing in the care and development of employees, it also makes business sense. For example, the public and private sector agencies that have implemented the Occupational Safety and Health Administration Voluntary Protection Program (VPP) have experienced a Days Away Restricted or Transferred (DART) case rate of 52% below the average for its industry.¹⁴² These sites typically do not start out with such low rates. Reductions in injuries and illnesses begin when the site commits to the VPP approach to safety and health management and the challenging VPP application process. The less days that employees experience as Days Away Restricted or Transferred result in the more days spent working for their employer.

¹⁴² Occupational Safety and Health Administration, Office of Partnership and Recognition, based upon the injury and illness data submitted every year by the VPP participants.

The Public Works Department, in its response to the first draft of the Management and Performance Audit of the Public Works Department, asked “why does the department need a safety program separate from the City’s.”¹⁴³

A safe work place for employees in the Public Works Department requires a partnership between the Human Resources Department and the Public Works Department. For example, a safe work place requires the assignment of responsibility for safety to managers, supervisors, and employees of the Public Works Department based upon a citywide policy developed by the Human Resources Department. For example, a safe work place requires that the Public Works Department conduct workplace inspections for hazards and the elimination of those hazards based upon checklists and training provided to the Public Works Department by the Human Resources Department. For example, a safe work place requires that the Public Works Department orient and train its employees in safe work practices based upon instructional material and “train the trainers” training provided by the Human Resources Department. Achieving a safe work place requires the full and willing participation of the Public Works Department.

The Public Works Department does not have a comprehensive employee safety program in comparison, for example, to the practices established by the Occupational Safety and Health Administration Voluntary Protection Program (VPP).¹⁴⁴ There are a number of elements, essential to effective employee safety program that are absent.

¹⁴³ Public Works Department, a list of errors and comments about the report, separated by section, February 13, 2011.

¹⁴⁴ Occupational Safety and Health Administration Voluntary Protection Program Application Instructions

- The Department has not established goals, objectives, and performance measures for its employee safety program
- The City has not clarified the safety responsibilities of departmental managers, supervisors and employees.
- The City does not provide a “core” safety training program for its employees that requires employee attendance.
- The Public Works Department does not have a designated Safety Coordinator.
- The Department does not have an active safety committee.
- An employee safety handbook has not been developed.
- The Department has not developed any tailgate safety training modules for delivery by supervisors.

There are clearly a number of opportunities for the Public Works Department to improve its employee safety program. These should include the measures noted below.

- **The Public Works Department should establish goals, objectives, and performance measures for its employee safety program.** These could, for example, such goals as those noted below.
 - To reduce the number of employee absences due to work related injury or illness.
 - To identify and reduce preventable injuries and illnesses.
 - To provide ongoing training to employees of the Department in accordance with Human Resource Department policies and procedures including “tailgate” training.
 - To increase productivity and reduce costs to the Department.
 - To ensure compliance with all OSHA laws and regulations
 - To provide a positive and easy transition for injured or ill employees to return to work.

The Department should establish goals for safety in its workplace that goals and objectives that can be measured to ensure that (a) achieves its overall

goals and objectives; (b) improves performance and productivity; (c) reduces costs; (d) holds managers, supervisors, and employees accountable for complying with safety policies and procedures; and (e) links budget to safety program outcomes.

Recommendation #270: The Public Works Department should establish goals, objectives, and performance measures for its employee safety program.

- **The Human Resources Department should clarify, in a written policy and procedure, the roles and responsibilities of departmental managers, supervisors, and employees in detail.** The roles and responsibilities for managers and supervisors, for example, should include the following:
 - Implement an effective safety and health program, consistent with the requirements of the City's Illness and Injury Prevention Program and the needs of their department or work unit.
 - Ensure that employees comply with safe and healthy work practices.
 - Train employees in safe work practices to be followed in daily work assignments.
 - Train employees regarding the proper personal protective equipment required for daily work assignments and ensure that the appropriate protective equipment is available for employees.
 - Review medical, fire, and earthquake emergency response plans specific to the department and/or project.
 - Inform and train employees in job safety and health practices involving hazardous substances used in the workplace.
 - Investigate every accident or employee report of incident to determine cause, mitigation, and prevention.
 - Perform periodic hazard inspections of the department or work area.
 - Hold periodic safety meetings with employees to present job-specific safety information and answer questions from employees regarding accident prevention.
 - Maintain records of hazard inspection and correction, communication of safe and healthy work practices, discipline for a failure to follow safe work guidelines, and training.

- Do everything else necessary to maintain a safe and healthful work environment.

Recommendation #271: The Human Resources Department should clarify, in detail, in a written policy and procedure the responsibilities of managers, supervisors, and employees for safety in the workplace.

- **The Public Works Department should work with the Human Resources Department to establish “core” safety training requirements for each classification in the Department.** Cal / OSHA and Federal OSHA both require workplaces to train employees on all occupational hazards to which they are exposed. This could potentially include dozens of topics, but most commonly includes 5 to 10 safety topics per employee. It is the responsibility of the City and the Department to determine which safety hazards are present in the workplace, and to eliminate the hazard and / or train employees about the hazard. The Public Works Department is responsible for training its employees in the hazards and prevention of injuries unique to the department. This training should be performed when an employee is first assigned to the Department, whenever an employee changes a position or is assigned a new task or piece of equipment to operate; and, in some cases, annually. Training should consist of formal training supported by audio visual aids and speakers, or informal, operational instruction or “tailgate” training that identifies the proper work practices, necessary personal protective equipment, and operational hazards should the employee fail to follow the safe work practices.

Recommendation #272: The Public Works Department should work with the Human Resources Department to identify the “core” safety training courses for Department employees. All Department employees should be required to attend this training.

Recommendation #273: The Public Works Department should work with the Human Resources Department to develop standard “tailgate” safety training modules for delivery by supervisors. Supervisors should be required to deliver these tailgate safety modules not less than once a month and report the names of the employees that attended to the Supervising Administrative Assistant.

- **The Public Works Department should establish a department-wide safety committee.** Safety Committees serve as sounding boards for multiple viewpoints and interests of employees on matters relating to the department's occupational safety and health program. Their purpose should be to assist departmental management in identifying, defining, and assessing occupational safety and health problem areas, and by recommending corrective measures. Actions can then be initiated to first, improve the effectiveness of the department's occupational safety and health program, and second, to meet specific needs of the units within the department.

Employee safety and health committees have three basic functions:

- Create and maintain an active interest in employee safety and health;
- Serve as a means of communications regarding employee safety and health; and
- Provide assistance to managers and supervisors in enhancing the effectiveness of departmental employee safety and health programs, including proposing policy and program objectives.

The Public Works Department should establish a safety and health committee to foster employee involvement in the development of a safe work place. The Human Resources Department should audit the effectiveness of the committee, and recommend improvements as necessary.

Recommendation #274: The Public Works Department should establish a departmental safety and health committee to foster employee involvement in the development of a safe work place.

Recommendation #275: The Human Resources Department should audit the effectiveness of the safety and health committee, and recommend improvements as necessary.

- **The Public Works Director should designate a departmental safety coordinator.** The overall role of this departmental safety coordinator should be to be the department's safety representative, organizing, and maintaining safety programs within the department. This should include such specific duties as disseminating health and safety information throughout the department i.e., Material Safety Data Sheets; coordinating facility workplace hazard inspections, gather data, and, if applicable, transmitting results to the department's safety committee; assisting in the review of the effectiveness of the department's safety program; assuring the effective implementation of the City's Injury and Illness Prevention Program within the department; and acting as a liaison between the Human Resources Department and the department as it pertains to the safety and health program in the department and also with the department's safety committee.

Recommendation #276: The Public Works Department should designate an employee as the Safety Coordinator for the Department with this responsibility to be a related duty, and not a primary duty.

- **The Public Works Department should develop an employee safety handbook.** This employee safety handbook should describe the responsibilities of the department's managers, supervisors and employees for safety in the

workplace, the City's Injury and Illness Prevention Program, the department's workplace safety practices, disaster preparedness, emergency action plan, first aid, and how to report and investigate accidents.

Recommendation # 277: The Public Works Department should develop an employee safety handbook.

(5) The Public Works Department Should Develop A Training Plan For Its Employees Including A Needs Assessment.

The *American Public Works Association's Public Works Management Practices Manual* is a tool that public works departments can use to develop or improve existing practices, enhance performance, increase productivity. Management Practice 2.12 states that "training goals should be consistent with the agency's mission, vision, and value statements. These goals provide the basis for developing all training programs, choosing training methods, and evaluating performance." Management Practice 2.13 states "a training program is established which includes a description of the training functions and list of training activities." Management Practice 2.16 states that "an individualized training report identifies training programs and classes and documents dates, programs, and classes that are attended by each employee in the agency."

The American Society of Training and Development reported in their *2010 ASTD State of the Industry*. that the average annual learning expenditure per employee for all companies surveyed grew from \$1,068 in 2008 to \$1,081 in 2009. The amount of learning expenditure as a percentage of payroll decreased slightly from 2.24% in 2008 to 2.14% in 2009.¹⁴⁵

The extent of training for departmental employees in the Public Works Department has been significantly reduced with the budget reductions that have occurred over the past several years. Overall, education and training was budgeted at

¹⁴⁵ American Society of Training and Development, 2010 ASTD State of the Industry Report, 2011.

0.57% of budgeted salaries in the fiscal year 2010-11 budget in the Public Works Department.¹⁴⁶ The Department has budgeted \$553 for education and training per employee.¹⁴⁷

The Department should develop a formal, written training program and plan to address this challenge. Development and execution of a well-conceived training program and plan is the cornerstone upon which a successful training program rests.

A training plan exists on at least two levels:

- Department-wide - encompassing the entire department and covering a relatively elastic time period of several years (this is a reflection of a strategic plan or overall set of goals)
- Division-specific - describing sections within the department and covering a discrete fiscal or calendar time frame (this is a reflection of concrete, measurable goals and objectives)

In developing a training plan, the Department is linking the skill development of its employees to its own strategic plan and an assessment of its strengths and weaknesses. The Department should strive to achieve the best practices presented below in developing this training plan.

The department provides a comprehensive staff development program to achieve and maintain high levels of productivity and employee performance.

The department:

- | |
|--|
| <ul style="list-style-type: none">• Conducts orientation programs for all new employees, and includes information on departmental procedures, performance expectations and evaluations, training and career opportunities, and personnel policies regarding such issues as absences, leave approval and tardiness; and• Has a department-wide training program and maintains training records on each staff member. |
|--|

The department has solicited and used input from supervisors and employees hired within the last three years to establish, revise, or affirm its new employee orientation programs, including content and approach.

The department has mentoring programs, as appropriate, for new employees.

The department plans training programs based on department-wide needs assessment that includes

¹⁴⁶ This is based upon adopted 2010-11 line item budgets provided by the Public Works Department to the consulting team on February 25, 2011.

¹⁴⁷ This is based upon the number of full-time equivalent employees shown as authorized for the Public Works Department in the fiscal year 2009-11 final budget on page H-21, less the employees allocated to GIS.

input from employees and their supervisors at least every other year.
The department establishes and implements formal staff development plans to provide on-going training for employees. The responsibility for training classes for employees may be delegated to a Division within the department (i.e., Fleet Management employees may be trained by the Fleet Supervisor), but that unit provides the Supervising Administrative Assistant with copies of training schedules and attendance rosters.
The department has procedures to evaluate individual in-service training activities, including employee feedback, and to evaluate the extent to which annual training efforts have met identified long-term training objectives.
The department provides a comprehensive staff development program for managers and supervisors.
All managers and supervisors have completed (or anticipate completing within the current fiscal year) management and supervisory training programs.
The department has a process for identifying employees with the potential for employment in managerial and/or supervisory positions, and for providing training to them prior to appointment to a managerial and/or supervisory position.
The training program for new managers includes a mentoring component.

The Public Works Director should direct staff, as appropriate, to develop a formal written training program and plan. This should include the development of a Departmental policy and procedure regarding professional development and training. This policy should clarify responsibility for ensuring that employees receive training and development, the responsibility for requesting funding for training and development, and the responsibility for the preparation of a formal, written professional development and training program that identifies the appropriate levels of training for each classification, including mandatory new employee and new supervisor training; mandatory safety training; and other training to enhance employees' skills and improve performance in their current position.

Recommendation #278: The Public Works Department should develop a training program and plan for its employees based upon a training needs assessment.

Recommendation #279: The Public Works Department should develop a policy and procedure regarding professional development and training.

(6) The Public Works Department Should Develop a Succession Plan.

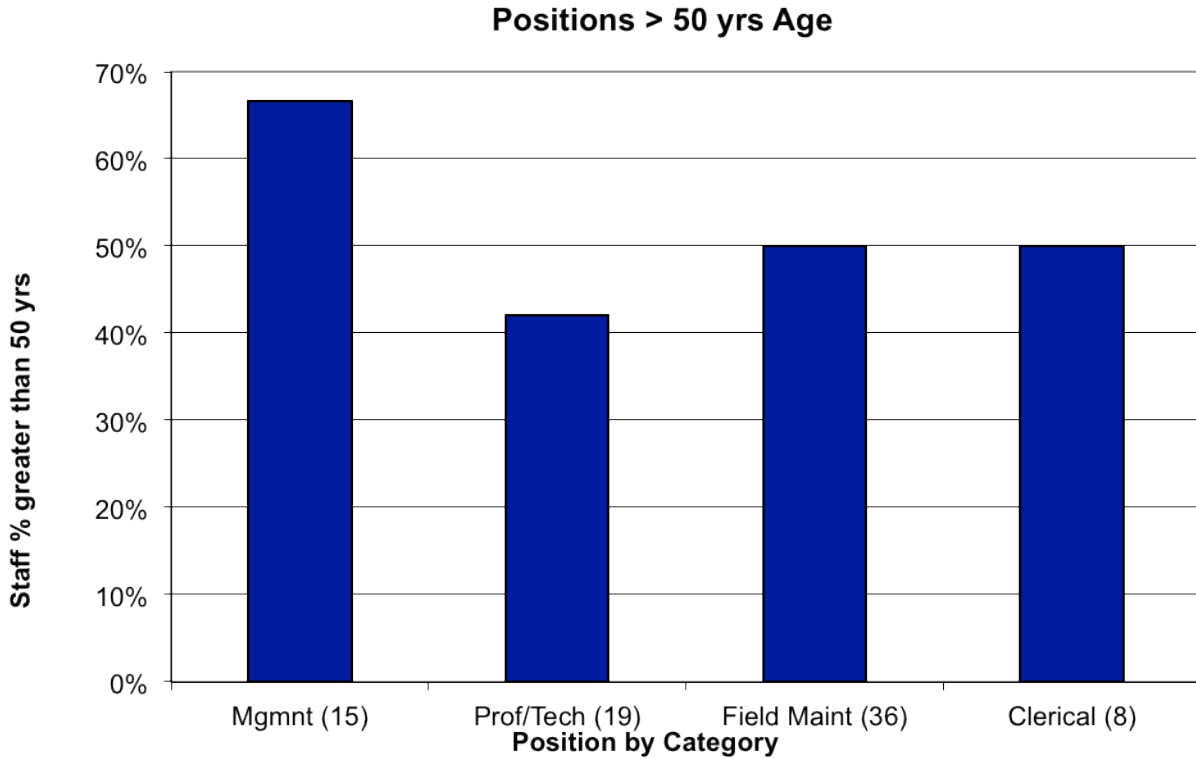
The Public Works Department has not developed a succession plan.

The Government Finance Officers Association recommends the development of a succession plan.¹⁴⁸ The Government Finance Officers Association recommends that governments address the following key issues and develop strategies concerning succession planning:

- Develop an integrated approach to succession management placing a high priority on planning for a smooth change that includes workforce planning, succession planning, knowledge management practices, and recruitment and retention practices;
- Provide a formal, written succession plan as a framework for succession initiatives;
- Develop written policies and procedures to facilitate knowledge transfer;
- Develop leadership skills as a key component of any succession planning initiative;
- Encourage personal professional development activities as a part of the succession planning effort;
- Design better recruitment and retention practices to aid in the succession process by improving orientation, career advancement, etc.; and
- Consider non-traditional hiring strategies such as part-time jobs, job sharing, flexible schedules to meet the needs of employees and the organization.

Why should the Public Works Department develop a succession plan? The chart below presents a summary of those employees in the Department that are older than 50 years of age by type of employee i.e., management, professional / technical, etc.

¹⁴⁸ Government Finance Officers Association, Key Issues In Succession Planning, 2011.



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

- 67% of the management and supervisory employees in the Public Works Department are older than 50 years of age;
- 42% of the professional and technical employees in the Public Works Department are older than 50 years of age;
- 50% of the field maintenance employees in the Public Works Department are older than 50 years of age; and
- 50% of the clerical employees are older than 50 years of age.

Clearly, the number of employees within the Public Works Department that are eligible to retire within the next five years is significant, and the Department needs to begin to plan now for the transition.

Succession planning recognizes that some jobs are the lifeblood of the organization. A succession plan should be prepared for those positions, and **not** all of the positions that could possibly turnover in the next five to ten years. These are

typically hard-to-fill positions are critical knowledge-based positions.

A possible template that the Department could utilize in developing an effective succession plan within the Public Works Department is presented below.

- **Overview.** An Overview is not needed if Workforce plan is part of the agency's strategic plan. It is needed if the Workforce Plan is a stand-alone document).
 - State the Department's mission, vision, and values.
 - Describe the Department's core responsibilities/programs.

Assessment of Current Needs

- Develop and provide data on demographic workforce indicators for the Department (i.e. turnover, years of service, educational levels, age, race and sex, vacancy rates, and turnover rates).
 - Compare Department data with state data or other benchmark(s).
 - Identify hard to fill positions and critical knowledge-based positions in the Department.
 - Analyze the Department's workforce data for staffing issues, projected attrition, replacement needs, and availability of skill sets required.
 - Determine if the Department is currently structured organizationally appropriately.
 - Determine the Department's current training needs.
- **Assessment of Future Needs**
 - Discuss anticipation of new federal or state legislation that may impact the Department's workforce or operations.
 - Discuss plans to de-emphasis or outsource Departmental activities / programs that may affect the Department's workforce.
 - Determine how future strategies will impact Departmental capital and financial plans.
 - Identify key positions i.e., hard to fill, and discuss Departmental succession planning efforts.

- Address employees that fill key positions that are near retirement and how the retirement will affect Departmental operations / programs.
- Discuss new skills sets needed to meet strategic goals. Are the skill sets available in the Department? What specific training and development requirements will be needed?
- **Gap Analysis and Succession Plan**
 - Discuss how the anticipated demand for Department services will impact the size, skills and competencies of the current workforce.
 - Evaluate if future labor market indicate the appropriate availability of talent for which the Department is competitive.
 - Discuss how the Department will compensate for projected skills and competency deficiencies. Some strategies to consider include rotational assignments, individual development planning, on-line learning, tuition reimbursement, mentoring, and career counseling.
 - Discuss how the changing skill requirements and the impact on current and future work of the Department.
 - Identify and plan for short and long-term competencies that will be necessary to meet future objectives and distinguish unique gaps.
 - Discuss recruitment strategies for key positions i.e., hard to fill, that will need to be implemented in order to meet the strategic goals and to ensure a supply of highly competent, trained workers.
 - Discuss retention strategies the Department will need to implement in order to keep a high performing and highly skilled workforce.
 - Determine who will be responsible for implementation of each task.
 - Establish timelines and milestones.
 - Discuss communication plan (provide feedback to all levels of the organization).
- **On-Going Review**
 - Establish a periodic review of the Succession Plan (at least once a year).
 - Determine if major milestones were completed.

- Determine if the Department made the appropriate investments in education and training to help its employees build the competencies needed to achieve the Department's plan.
- Review succession-planning efforts and determine effectiveness.
- Determine if skill requirements were eliminated.

Not all positions are alike in the Public Works Department. Some positions are more critical to the Department's mission, and some positions are more difficult to fill. It is these types of positions that the Succession Plan should be designed to address. This is not to suggest that the Succession Plan should only address managerial positions or knowledge positions that require a degree i.e., Engineer. Equipment mechanics, for example, are becoming increasingly hard-to-fill. The development of the Succession Plan should include an evaluation of all of the classifications in the Department, and discuss with the Human Resources Department those classifications that are difficult to recruit qualified applicants.

Recommendation #280: The Public Works Department should develop a succession plan for those classifications in the Department that contain a significant proportion of employees older than 50 years of age and that are hard to fill with qualified applicants.

(7) The Public Works Department Should Enhance Its Customer Service Policies, Procedures, and Practices.

The American Customer satisfaction Index (ACSI) was established in 1994 by the University of Michigan School of Business to provide an economic indicator tracking the quality of products and services from the perspective of the customer. The ACSI is the only measure of the quality of economic output nationwide. Research is showing the ACSI to be a leading economic indicator, and a predictor of financial performance at the firm level. ACSI reports scores on a 0 to 100 scale at the national

level, and produces indexes for 10 economic sectors, 45 industries (including e-commerce and e-business), more than 225 companies, and over 200 federal or local government services. ACSI surveys customers of companies and users of government services randomly via telephone and e-mail. The ACSI score for each company is based on a sample of 250 customer interviews, with more than 70,000 interviews conducted annually.¹⁴⁹

In its most recent ACSI, local government in the United States did not score well. Overall, the ACSI score was 68.3 out of 100. Local government scored higher than four industries and lower than forty-two others. It scored somewhat higher than the federal government (68.3 out of 100 versus 65.4), but lower than the U.S. Postal Service, hotels, department and discount stores, supermarkets, banks, etc. The University of Michigan School of Business found that customer satisfaction is a leading indicator of company financial performance. Stocks of companies with high ACSI scores tend to do better than those of companies with low scores. Quality plays a more important role in satisfying customers than price in almost all ACSI-measured industries. Companies that focus on quality improvements tend to fare better over time in ACSI than companies that focus on price. Manufactured goods tend to score higher on ACSI than services. Typically, the more service required, the lower the satisfaction.

Clearly, local governments have a challenge in meeting and satisfying their customers. The Public Works Department is no exception. The citizen satisfaction survey conducted for the City in 2010 found that the Public Works Department had a 49% very or somewhat favorable rating, but that represented a decrease from 57% in

¹⁴⁹ The American Customer Satisfaction Index, The American Customer Satisfaction Index web site.

2005.¹⁵⁰

The Public Works Department states that it values its customer's by "responding to requests for service in a friendly, fast and efficient manner, and by soliciting their feedback in order to provide effective service and better understand their needs."¹⁵¹

These results and others noted in the report suggest that the Public Works Department should enhance its customer services for its internal customers and external customers.

Previously, the consulting team recommended the development of service level agreements with internal customers for its Fleet Services, Facilities Maintenance Services, and Engineering Services. The service level agreement stipulates the level of service expected and commits these three Sections to the delivery of that standard. These agreements spell out the type and level of service required, and any performance-related penalties or incentives. A clear understanding of what is expected helps ensure that both the customers of these three Sections and the supervisors of these Sections are satisfied, and the customers are well served.

However, the Public Works Department should also take steps to address customer service for external customers as well. These steps are defined below.

- **The Public Works Department should develop customer service metrics for the services that it provides.** Examples of possible standards are presented below.
 - We will answer your written inquiry within 5 working days. If we need more time to research and answer, we will contact you within those 5

¹⁵⁰ San Luis Obispo Citizen Satisfaction Measure Y Survey, Fairbank, Maslin, Maullin, Metz and Associates, 2010

¹⁵¹ Public Works Department, Public Works Department 2010 Annual Report.

working days to tell you when to expect our response and who the contact person is.

- If you telephone us, you will speak to a knowledgeable person who will answer your question, or refer it properly. You will receive no more than two referrals for each call.
- We will answer phone calls promptly and courteously, within four rings, and return all voice mail messages within one workday after receipt.
- If you have a personal appointment with a departmental employee, you will be helped within 5 minutes.
- You will not have to wait more than 15 minutes if you do not have an appointment.
- We will respond to written complaints within five workdays.
- If you telephone us with a complaint, we will advise you on the telephone or refer your complaint to the proper source.

Recommendation #281: The Public Works Department should develop customer service metrics for each of its core services.

Recommendation #282: The Public Works Department should publish these customer service metrics to its web site.

- **The Public Works Department should expand who the customer can contact if things go wrong in the delivery of service by the Department.** The Department has already published to its web site a web page that asks “How Are We Doing.” The web page asks the customer “what are we doing that you like? What improvements to our services should we be making? You can share your comments with us in a number of ways.” The customer can leave comments with the City Manager, with a Directory of City Officials, or with an on-line survey. The Department should expand the alternatives that a customer can exercise should something go wrong in the delivery of service by the Department. Possible alternatives could include:
 - Speak or write to the supervisor in charge, providing the e-mail addresses and names of the supervisors on-line at the web page that asks “How Are We Doing”;
 - Send an e-mail message to the Public Works Director, providing the e-mail address and the name of the Public Works Director on-line at the web page that asks “How Are We Doing”; or

- Setting up an appointment with the Public Works Director to discuss the situation in more detail.

Recommendation #283: The Public Works Department should revise its web page – How Are We Doing” – to expand who the customer can contact if things go wrong in the delivery of service by the Department.

- **The feedback from the customer should be made a basic part of manager's and supervisor's work experience.** Information regarding customer satisfaction must be available and understood by managers, supervisors and all the employees of the Department. The Department has a web page “How Are We Doing”. On that web page, customers have the opportunity to complete a survey that asks such questions as “were you able to successfully conclude your call of visit”, “was our service timely and efficient”, etc. This information should be summarized not less than once a year on that web page so that customers can monitor how well other customers perceive the quality and responsiveness of the services provided by the Public Works Department.

In addition, managers and supervisors should make random telephone contacts with customers – internal or external - not less than twice a month. The purpose of these contacts should be to elicit feedback from these customers regarding the quality and timeliness of the service provided by their Division. The results of these contacts should be summarized in a simple e-mail to the Public Works Director to provide constant feedback. For example, the Supervising Civil Engineer for the Engineering Development Review Division could ask such questions as the overall perspective regarding the service provided by the Division, whether the Division's staff keep the applicant informed regarding the process and timelines of their project, whether Division staff provided the applicant complete and consistent answers regarding their project, whether Division staff responded to the applicant in a timely manner, etc.

Recommendation #284: The customer satisfaction results collected from the Public Works Department web page regarding the “How Are We Doing” survey should be summarized not less than once a year on that web page so that customers can monitor how well other customers perceive the quality and responsiveness of the services provided by the Public Works Department.

Recommendation #285: The managers and supervisors of the Public Works Department should make random telephone contacts with customers – internal or external - not less than twice a month. The purpose of these contacts should be to elicit feedback from these customers regarding the quality and timeliness of the service provided by their Division. The results of these contacts should be summarized in a simple e-mail to the Public Works Director to provide constant feedback.

- **The Public Works Department should proactively seek feedback from customers, internal and external, not less than once a year.** Under the present system, the customer has to find the “How Are We Doing” web page on the Public Works Department web site to provide feedback to the Department. Most dissatisfied customers never complain directly, instead they simply stop buying a company’s product or, worse yet, tell others [agency executives and city council members] about their bad experiences.¹⁵² Encouraging customer feedback can help the Department understand their customers’ expectations and address problems quickly.

Rather than use a complaint system that waits for the customer to complain, the Public Works Department should proactively solicit feedback from customers – internal and external – by sending a link to an on-line survey. This should be done not less than once annually – for internal and external customers. Surveying customers should be a routine, ongoing activity. The results from each survey represent a snapshot of how customers perceive the Department’s performance at a given moment in time. The true power of survey results lies in the trends that develop over time. These surveys should encompass aspects of customer service that include reliability, responsiveness, courtesy, communications, competence, understanding the customer, etc.

The *American Statistical Association* published a brochure series titled “What is a survey” that can assist the Department in the development of the survey [<http://www.amstat.org/sections/srms/whatsurvey.html>]. Survey Monkey [<http://www.surveymonkey.com/%5D>] is one of several tools available for conducting more surveys on the Internet.

Recommendation #286: The Public Works Department should be proactive in seeking feedback from customers – internal and external – by sending a link to an on-line survey. This should be done not less than once annually – for internal and external customers.

Recommendation #287: The Public Works Department should publish the results of the proactive customer satisfaction survey to their web site.

- **The Public Works Department should analyze the results of the proactive customer survey once a year and identify measures that the Department is taking to improve customer service.** Information is critical to addressing the underlying cause of a customer complaint. In order to prevent future customers from suffering from the same issue, the Public Works Department must analyze the results of customer complaints. The Department should analyze the data and develop solutions that address the causes of complaints. The compiled results of the survey can also help the Department prioritize their customer service improvement efforts and communicate ongoing service

¹⁵² Janelle Barlow and Claus Moller, *A Complaint Is A Gift*, 1996.

problems throughout the Department. Lastly, complaint data can be used to identify training needs, thereby improving employee skills.

Recommendation #288: The Public Works Department should analyze the results of the proactive customer survey once a year and identify measures that the Department is taking to improve customer service.

- **The Public Works Department should develop and adopt a customer service policy and procedure.** The policy and procedure should set standards for how staff of the Department interacts with customers, internal and external. The policy and procedure should set a policy that the Department will provide excellent customer service to its customers. The policy and procedure should establish service guidelines and procedures i.e., all Internet inquiries and phone messages received by the Department will be responded to within one workday of receipt of the message.

Recommendation #289: The Public Works Department should develop and adopt a customer service policy and procedure.

- **The Public Works Department should provide an orientation to all employees for the Department regarding the customer service policy and metrics of the Department.** The *American Public Works Association* has developed a *Public Works Management Practices Manual* that presents recommended practices identified by “nationally recognized experts in the field of public works.”¹⁵³ Practice 2.13 states “orientation and training is provided to all employees on the agency philosophy of customer service.” Once the Department develops the customer service policy and procedure, the Department should brief its employees and provide an orientation to all of its employees regarding that policy and procedure.

Recommendation #290: The Public Works Department should provide an orientation to all employees for the Department regarding the customer service policy and metrics of the Department.

- (8) The Public Works Department Should Attain Accreditation From the American Public Works Association.**

There is a growing trend in the United States for various occupation groups to develop programs to enhance their operations and ensure compliance with recommended or recognized best practices of their professions (American Public Works Association, 2004). These improvement programs most often take the form of

¹⁵³ American Public Works Association, *Public Works Management Practices Manual*, 2004.

accreditation. Some occupation groups have long standing histories of accreditation, such as physicians, lawyers and higher educational institutions (Commission on Colleges of the Southern Association of Colleges and Schools, 2008). Through the use of an accreditation process, these occupations have elevated the quality and effectiveness of the programs and services they provide and improved their organizational professionalism.

Public Works executives are finding it increasingly more difficult to obtain sustainable funding and budgets, without being able to document direct improvements or enhancements to the delivery of services to the community. In today's economy, all of the expenditures must be justified. A system that establishes benchmarks and a means of measuring capabilities is needed to assist Public Works executives in evaluating their community's public works service needs.

The American Public Works Association has developed a program to enhance the effectiveness of agencies and their competencies in the public works field. This voluntary, multi-faceted program is designed to provide guidance and technical resources to agency managers as they seek to evaluate and upgrade the performance of their agencies. This program has as its foundation the Public Works Management Practices Manual. Public Works Management Practices is a manual of more than 500 procedures necessary to perform as a public works agency. The manual provides the framework for an objective evaluation of an agency. Many public works agencies in the United States and Canada have used the manual to conduct self-assessments of their operations.

Accreditation would require the San Luis Obispo Public Works Department to document its policies, procedures and practices. The amount of effort required to do this will depend on what the Public Works Department already has in place and how committed the Department is to the process. The program requires that existing policies, procedures and practices be well documented and communicated to the managers, supervisors, and employees that should know about them. The self-assessment process provides the systematic framework to gauge how well the Department has documented its policies, procedures and practices, and how effective it is at getting the job done. The San Luis Obispo Public Works Department must provide proof that it does comply with each practice that is applicable.

Experienced public works professional are recruited and trained to serve as evaluators for the accreditation. Wherever possible, these volunteers will be assigned to evaluate agencies of similar size and type as the agencies they serve. Accreditation fees for a medium size municipal agency should approximate \$10,000 to \$15,000, over the two- to three-year process, not including the agency's staff expenses.

Recommendation	One-Time Cost Impact
The Public Works Department should attain accreditation from the American Public Works Association	\$15,000

Recommendation #291: The Public Works Department should attain accreditation from the American Public Works Association.

(9) The Public Works Department Should Enhance Its Media and Public Relations Practices.

There are a number of positive aspects to the Public Works Department's media and public relations practices. Examples of these positive aspects are presented below.

- The Supervising Administrative Assistant is responsible for media and public relations for the Department i.e., Measure Y press releases, functioning as the point of contact for news stations and the print media, writing press releases, coordinating special events hosted by the Department, etc.
- The Supervising Administrative Assistant is responsible for the maintenance of the Department's web site and pages i.e., weekly construction projects updating
- The Supervising Administrative Assistant is responsible for managing the community relations aspects of crisis management on behalf of the Department i.e., Diablo Canyon nuclear power plant emergency drills.
- The Supervising Administrative Assistant prepares the Department's annual report and published the report to the Department's web site.

These are examples of the positive aspects. There are also opportunities to enhance the effectiveness of media and public relations by the Public Works Department. These opportunities are enumerated below.

- **The Public Works Department should develop a formal written communications plan.** The purpose of the communication plan is to assist the Department in developing a strong, effective and consistent communication strategy that integrates print, broadcast, and interactive media – that serves to drive communication efforts by the Department. The plan recommends strategies to enhance outreach, increase exposure, enhance the awareness by the public of the services provided by the Public Works Department, and provide direction to outreach efforts. The plan should develop recommendations based upon an assessment of existing communication methods with a goal of better integrating, expanding, and targeting communications **within the scope of the Department's existing resources.** The plan should:
 - Identify the key audiences the Department wishes to reach (i.e., San Luis Obispo residents, City and departmental employees, San Luis Obispo City Council, news media, California Polytechnic State University-San Luis Obispo, homeowner associations, etc.),
 - The key messages that the Department wishes to convey to those audiences i.e., preserving the environment, managing the maintenance and repair of the City's assets, investing in the community, etc., with these key messages serving as basic building blocks for speeches, news releases, and publications,

- How communication will be coordinated within the Department,
- The communication tools and channels that will be utilized by the Department such as utility bill inserts, cable television municipal channel, editorial board briefings, etc., the frequency that these tools will be utilized, and the key target audience(s) for each tool,
- The “identity” that the Department wishes to convey to those audiences i.e., “who we are”,
- The strategic communication recommendations,
- An internal calendar for Departmental communication events, news releases, and publications.

The consulting team estimates that the development of this communications plan should require approximately forty (40) staff hours to develop this communication plan.

Recommendation #292: The Public Works Department should develop a formal written communications plan.

Recommendation #293: The Public Works Department should update the communications plan not less than once every three years.

- **The Public Works Department should develop a proactive team to communicate the key messages of the Public Works Department.** The Department should form a team of its managers and supervisors to make presentations to civic organizations, service clubs, neighborhood associations, etc., that convey the key messages of the Department. This should occur not less than once every other month.

The consulting team estimates that the communication of key messages to civic organizations, service clubs, neighborhood associations, etc. should require approximately two (2) staff hours for each event.

Recommendation #294: The Public Works Department should develop a proactive team to communicate the key messages of the Public Works Department, and make presentations to civic organizations, service clubs, neighborhood associations, etc., that convey the key messages of the Department not less than once every other month.

- **The Public Works Department should publish an electronic newsletter once every two or three months.** This newsletter should be designed to communicate the services provided by the Department, important events, how to prepare for a crisis, etc. Other public works departments publish such

newsletters. For example, the public works department of Glendale, California published newsletters in June, July, August, September, and December 2010. The newsletter covered such events and services as Public Works week festivities, a specific capital project – the city hall remodel, urban forestry services, the dial-a-ride program, and the pavement management program. These newsletters were one (1) to three (3) pages in length, and typically involved only one article. The Ventura County Public Works Department also publishes a departmental newsletter, once every one or two months (the department just began publishing the newsletter in November 2010). Newsletters are not just published by large public works departments. The Mt. Shasta Public Works – Utilities Department also publishes a newsletter, and that city has a population of 3,600.

Residents and businesses should be able to subscribe, electronically, to the newsletter and receive the newsletter electronically. The newsletter should also be distributed to employees.

The consulting team estimates that the publishing of this newsletter should require approximately eight (8) staff hours for each newsletter.

Recommendation #295: The Public Works Department should publish an electronic newsletter once every two or three months.

Recommendation #296: The Public Works Department should enable residents and businesses to subscribe, electronically, to the newsletter and receive the newsletter electronically.

Recommendation #297: The Public Works Department should provide a copy of the electronic newsletter to each of its employees.

- **The Public Works Department should publish an internal electronic newsletter for employees once every two weeks.** This newsletter should be focused on those issues that employees need to be aware of. These issues could be an introduction to new hires by the department, significant capital projects that the department is executing, the city's financial plan and challenges, new regulations, a portrait of individual staff (i.e., a short biography), letters of appreciation received from the public, etc. The newsletter does not need to be long, but should publish relevant issues to keep departmental employees informed.

The consulting team estimates that the development of this communications plan should require approximately two (2) staff hours to develop each newsletter.

Recommendation #298: The Public Works Department should publish an internal electronic newsletter for employees once every two weeks.

- **The Public Works Department should use “social media” to communicate with the residents and businesses of San Luis Obispo.** "Social media" refers to the various applications for discussion and information sharing, including social networking sites, blogs, video-sharing sites, podcasts, wikis, message boards, and online forums. Examples include Facebook, Twitter and YouTube. Social networking is the practice of expanding the number of an individual or organization's contacts by making connections through these web-based social media applications. The use of social media will be an important tool in moving towards a more informed and engaged community. The use of social media will not take the place of pre-existing communication efforts. It is simply one more tool for the City to utilize in its communications with our citizens. The Transit Division is already using Twitter and Facebook. Other public works departments have already done this such as Encinitas with Facebook. The San Luis Obispo County Planning and Building Department uses both Facebook and Twitter.

The consulting team estimates that the use of “social media” should require approximately two (2) staff hours on a weekly basis to support.

Recommendation #299: The Public Works Department should use “social media” to communicate with the residents and businesses of San Luis Obispo.

- (10) There Are No Opportunities for Cost Reductions Within the Administration Division Without Reductions In the Level of Service and There Are Not Any Observable Redundancies in Service Delivery.**

The City has been in a cost reduction mode for six of the past eight fiscal years.

The Administrative Division has not been exempt from these reductions. There are no observable opportunities to reduce costs within Administrative Division without reducing levels of service. There are no observed redundancies in the Administrative Division. That is, the Administrative Division is not consistently delivering services that are also delivered by other Sections in the Public Works Department.

(11) The Administrative Division Utilizes Appropriate Equipment and Technology.

The Administrative Division is appropriately equipped to conduct its work. It utilizes the same type of equipment that other cities utilize, and that enable its efficient delivery of services.

15. PLAN OF ORGANIZATION

This chapter presents an analysis of the opportunities, if any, to consolidate the Public Works Department and the Utilities Department. Previous chapters – chapters 4 through 14 - presented an analysis of the existing organizational structure of the Public Works Department itself, and presented recommendations to streamline and enhance the organizational structure of the Department.

One of the four “drivers” in the costs of an organization is organizational structure. The drivers of high costs in an organization are multiple layers and narrow spans of control, fragmented functions and / or shadow staff with duplicate activities across the organization. The drivers of a low cost environment in an organization include delayering the management structure and broadening of spans of control, and the consolidation of shared services activities.¹⁵⁴

Public sector organizations have long grappled with management layers and spans of control.

For example, the Los Angeles County Metropolitan Transportation Authority in 2007, for example, identified a number of structural issues and their unfortunate outcomes: fragmentation and duplication of key business processes; the formation of dominant silos; and a lack of collaboration at top management levels. The Authority tackled these challenges with a new organizational design that streamlined departments, and moved units among departments to combine like activities, which

¹⁵⁴ Financial Executive, Matt Ericksen, Elizabeth Powers, and Frank Ribeiro, Booz, Allen and Hamilton, July / August 2007.

reduced fragmentation and duplication.¹⁵⁵

As another example, in 2010, the City of Brea moved the Engineering Division from the Development Services Department and merged with Maintenance Services Department to create a Public Works Department. The Development Services Department was eliminated; the Maintenance Services Department was eliminated. The Public Works Department in Brea is now comprised of: Streets and Sanitation, Water Operations, Equipment / Vehicle Maintenance, Parks, Facilities, and Engineering.

1. IN EVALUATING THE PLAN OF ORGANIZATION, A NUMBER OF PRINCIPLES SHOULD BE CONSIDERED.

In evaluating the potential to consolidate the Public Works Department and the Utilities Department, the Matrix Consulting Group utilized a number of principles for organizational structure. These principles are presented in the paragraphs below.

- **Organization and Structure** was evaluated on whether there were clearer lines of accountability, spans of control were more flat or allocated better under one alternative and if like processes were grouped together more efficiently and effectively (functional cohesion);
- **Communication and Coordination** - The criteria for this dimension includes the number of handoffs/ exchanges required, physical/ virtual proximity importance, shared knowledge/ understanding within divisions and departments and channel clarity (are there clear and consistent lines of communication);
- **Resource Utilization** - The criteria for this dimension includes total headcount comparison, administrative overhead, workload management distribution, process efficiency/ standardization and resource sharing capacity;
- **Service Quality and Responsiveness** - The criteria for this dimension includes cycle times, stakeholder input/ user friendliness, performance management, quality control/ number of checks and balances and consistency of policy/ procedure application;

¹⁵⁵ Passenger Transport, Roger Snoble, Chief Executive Officer, Los Angeles County Metropolitan Transportation Authority, February 2007.

- **Agility and Flexibility** - The criteria for this dimension includes the scalability to manage peaks and valleys and adaptability to offer cross-functional capabilities; and
- **Human Capital** - The criteria for this dimension includes enhanced career development opportunities, training occurrences and recruiting and retaining capabilities.

The lack of an overall vision of organizational principles created many of the inefficiencies that exist in local governments today. Reorganization efforts that ignore these broader principles could create new, unintended consequences for the future.

2. THESE PRINCIPLES FOCUSED THE ANALYSIS OF ALTERNATIVES TO THE ORGANIZATION STRUCTURE FOR THE PUBLIC WORKS DEPARTMENT AND THE UTILITIES DEPARTMENT.

These principles were then converted into a matrix to enable the project team to evaluate each alternative. The primary purpose of the matrix was to focus the project team on the alternatives and to evaluate the each of those alternatives using each of these criteria.

ORGANIZATIONAL EVALUATION CRITERIA	
Organization and Structure	
•	Clear lines of accountability
•	Spans of control/number of management layers
•	Functional cohesion
Communication and cohesion	
•	Hand-offs/exchanges (internal / external)
•	Physical/virtual proximity
•	Shared knowledge/understanding
Resource Utilization (Cost)	
•	Administrative overhead
•	Workload management (even distribution)
•	Process efficiency/standardization
•	Resource sharing
Human Capital	
•	Career development

ORGANIZATIONAL EVALUATION CRITERIA	
•	Training
•	Recruitment and retention
Agility and Flexibility of the Organization	
•	Scalability (ability to manage peaks and valleys)
•	Adaptability (cross functional capability)
Service Quality and Responsiveness	
•	Customer service
•	Performance management
•	Quality control checks and balances
•	Consistency of policy/procedure application

From the analysis of each 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.

3. THE CONSULTING TEAM DEVELOPED TWO ALTERNATIVE STRUCTURES FOR ORGANIZING THE PUBLIC WORKS DEPARTMENT AND THE UTILITIES DEPARTMENT.

The purpose of this section of the chapter is to explain and illustrate the use of the structural alternatives. In order to focus the consulting team on the outcomes that could be achieved with a structural redesign, the consulting team developed two viable structural alternatives. One alternative – Scenario “A” – left the two departments – the Public Works Department and the Utilities Department – as separate departments. The other alternative – Scenario “B” – resulted in the consolidation of the two departments.

The evaluation of these two alternatives focused on exploring how synergies could and would benefit the City as a whole. The potential synergies amongst the two different structural alternatives were evaluated taking into consideration factors such as:

- Changes in reporting responsibility;

- Functions/processes grouped together to enhance efficiency;
- Reduction of hand-offs and exchanges;
- Better management and distribution of workload;
- Standardization of processes;
- Reduction in cycle time taking into consideration quality of product/service offered;
- Greater resource sharing;
- Superior flexibility in managing peaks and valleys;
- Cross-functional training capability; and
- Enhanced training and career development opportunities.

This process ultimately led the team to conclusions regarding the comparative strengths and weaknesses of each structural alternative. The following section describes the structural alternatives used in the evaluation process. Each alternative includes a brief description and structural diagram.

(1) Scenario A – “As Is” Plan of Organization

Scenario A is the current state or “As-Is” structure of Public Works and Utilities. The functions are split into two separate departments. Charts depicting the plan of organization of these two departments are presented in the first exhibit presented at the end of this chapter (Exhibit 17).

(2) Evaluation of Scenario “A” - the “As Is” Plan of Organization

This section includes organizational and operational findings and observations for the current “As-Is” state, Scenario A. The findings and observations in this section are categorized within the six (6) evaluative dimensions, mentioned previously.

The evaluation of the “As Is” plan of organization is presented in the second exhibit at the end of this chapter (Exhibit 18). A summary of the evaluation of the “As Is” Plan of organization – the existence of two separate departments in the Public Works Department and the Utilities Department – is presented below.

- **Organization and Structure.** The advantages to the existence of the two departments as it pertains to organization and structure are that neither department is excessively hierarchical, and the City will face the inevitable resistance to change should it try to consolidate the two departments.

However, the disadvantages of the existence of the two departments are the duplication of responsibilities between the two departments (stormwater, building and custodial maintenance, solid waste collection, capital project engineering, engineering construction management, engineering development review, asset maintenance, repair, and management), and the management and supervisory spans of control in the two departments, in some instances, can be broadened.

- **Communication and Coordination.** The advantages of the separation of these programs into two separate departments as it pertains to coordination and communication are that it enables each department to effectively manage the specialized knowledge workers in each department, and there is a minimum of handoffs / exchanges of customers between the two departments.

However, the disadvantages of the existence of the two departments are that the two departments are utilizing (and will continue to utilize) two different automated work order systems (EnerGov versus Infor), the City’s development related permit application processes involve both of these departments (among others) that can result in handoffs / exchanges of customers, both departments have capital project engineering responsibilities which can complicate effective project management, and the City’s NPDES Phase II permit indicates that both departments will be involved in the implementation of BMPs in the public information and outreach, public participation, illicit discharge detection and elimination and pollution prevention/good housekeeping of municipal operations sections, which can complicate compliance management.

- **Resource Utilization.** The advantages of the separation of these programs into two separate departments as it pertains to resource utilization are that it better enables each department to maintain specialized skills, and that it facilitates allocation of the costs since the two departments do not share administrative overhead between the general fund and the enterprise funds.

However, the disadvantages of the existence of the two departments are the lost opportunities to share utilization of light and medium equipment, the duplicative administrative staff and the costs associated with the duplicative administrative staff, the difficulty in shifting staff resources as workload demands shift among the two departments, and the difficulty in standardizing administrative practices, processes and procedures between two departments.

- **Service Quality and Responsiveness.** The advantages of the separation of these programs into two separate departments as it pertains to service quality and responsiveness are that certain issues may take longer to resolve in a consolidated department, and an appropriate starting place may not be as clear to external customers.

However, the disadvantages of the existence of the two departments are the lack of clarity and consistency in the City's asset management approaches between the two departments, performance measures for asset management, responses to service, and accountability for service quality and responsiveness.

- **Agility and Flexibility.** The advantages of the separation of these programs into two separate departments as it pertains to agility and flexibility are that decision-making can be slower in larger, more layered and hierarchical organizations, and, over time, larger organizations can develop an inertia regarding change.

However, the disadvantages of the existence of the two departments are the difficulties of rapid cross-unit resource shifting and workload balancing, and the growing or shrinking the organization in response to workload or customer demands.

- **People.** The advantages of the separation of these programs into two separate departments as it pertains to people are that consolidation of two historically separate entities can engender significant change resistance, fear, uncertainty and resistance, and the executive level skills required to lead a large and diverse department are substantial and scarce.

However, the disadvantages of the existence of the two departments are the complications of creating and sustaining a consistent organizational culture and operational philosophy, the ability to provide multi-disciplinary training opportunities and cross-utilize staff, and career advancement and professional development potential is obstructed.

The current scenario of two separate departments – a Public Works Department and a Utilities Department - has many advantages, but much more in the way of disadvantages.

(3) Scenario B – the Consolidated Public Works and Utilities Department

Scenario B is the consolidated department of Public Works and Utilities. The functions are consolidated into one (1) department. A chart depicting the possible plan of organization of the consolidated department is presented in the third exhibit presented at the end of this chapter (Exhibit 19).

(4) Evaluation of Scenario “B” - the “Consolidated Public Works and Utilities Department

This section includes organizational and operational findings and observations for the consolidated Public Works and Utilities Department, Scenario B. The findings and observations in this section are categorized within the six (6) evaluative dimensions, mentioned previously.

The evaluation of consolidated Public Works and Utilities Department plan of organization is presented in the fourth exhibit at the end of this chapter (Exhibit 20). A summary of the evaluation of the “consolidated Public Works and Utilities Department plan of organization is presented below.

- **Organization and Structure.** The advantages of consolidating the Public Works Department and the Utilities Department as it pertains to organization and structure include the facilitation of cooperation among different programs and work groups, concentration of core competencies i.e., asset management, enhanced accountability, improved ability to coordinate the totality of the City’s CIP, the emphasis of the “unity of command” principal, and the broadening of management and supervisory spans of control.

The disadvantage of consolidating the two departments are that the consolidated department could be come excessively hierarchical, the large diversity of functions within the consolidated department will require active management, leadership, and oversight, and intangible transition costs associated with the consolidation of the two departments.

- **Communication and Coordination.** The advantages of consolidating the Public Works Department and the Utilities Department as it pertains to communication and coordination include fewer handoffs will occur, the ability to

communicate and coordinate functions will be enhanced, the functions of capital improvement programming, development coordination and project delivery functions will be more closely aligned, the potential of “message mixing” will be reduced, peer-to-peer communication will be enhanced, the responsibility for who does what can be more easily communicated, and cross-functional knowledge sharing will be easier.

The disadvantage of consolidating the two departments include the difficulty in managing knowledge effectively due to the diversity of skills within the department, and the potential for stifling differing views.

- **Resource Utilization.** The advantages of consolidating the Public Works Department and the Utilities Department as it pertains to resource utilization include an opportunity for significant administrative cost / overhead reduction, sharing of scarce or specialized resources, improved ability to re-allocate resources to meet shifting workload demands, and standardization of common administrative practices. The consulting team estimates that the City could reduce administrative costs / overhead, based upon the possible plan of organization presented in the third exhibit at the end of this chapter (Exhibit 19), of approximately \$364,000. This estimate is based upon the elimination, through attrition, of a Deputy Director position, a Supervising Administrative Assistant position, and a Utilities Project Manager position. The breakdown of the cost savings is presented in the table below. These cost savings represent the positions at top step (since all positions are filled at the present time) and includes fringe benefits.

Position	Salary at Top Step	Fringe Benefits at 31% of Salary	Total
Deputy Director - Public Works	\$122,122	\$37,858	\$159,980
Utilities Project Manager	\$97,266	\$30,152	\$127,418
Supervising Administrative Assistant	\$58,656	\$18,183	\$76,839
Total	\$278,044	\$86,193	\$364,237

It is possible, with further analysis by the City, that additional cost savings could be generated with the consolidation of these two departments. For example, the City of Brea has consolidated the responsibility for supervising street maintenance and wastewater collection maintenance under one supervisor. San Luis Obispo allocates two supervisors in two different departments (Public Works and Utilities) to supervision of streets and wastewater collection. If these two functions were consolidated in San Luis Obispo, an additional \$115,600 in annual cost savings would be generated.

The disadvantage of consolidating the two departments include that care will have to be taken that, as the knowledge base is broadened, specialized skills are not lost.

- **Service Quality and Responsiveness.** The advantages of consolidating the Public Works Department and the Utilities Department as it pertains to service quality and responsiveness include the potential to create a single organizational point of contact for the City's public works and utilities issues and inquiries, the opportunity to create opportunities comprehensive measures of performance for closely related functions, opportunities to avoid conflicting and / or incompatible responses to service issues, and the creation to develop a single department that is accountable for asset service quality and responsiveness.

The disadvantage of consolidating the two departments include that certain issues may take longer to resolve, as an appropriate starting place will not be as clear to external customers.

- **Agility and Flexibility.** The advantages of consolidating the Public Works Department and the Utilities Department as it pertains to agility and flexibility include scalability or the ability to grow and / or shrink in response to workload / customer demands, and the ability to provide rapid cross-unit resource shifting and workload balancing.

The disadvantage of consolidating the two departments include decision-making tends to be slower in larger, more layered and hierarchical departments, and, over time, larger organizations tend to develop an "inertia" regarding change.

- **People.** The advantages of consolidating the Public Works Department and the Utilities Department as it pertains to people include the enhanced opportunity to create and sustain a consistent organizational culture and philosophy regarding asset management, increased multi-disciplinary training, and increased career advancement and professional development.

The disadvantage of consolidating the two departments include engendering significant resistance to change, and that the executive level skills required to lead a large and diverse department are substantial and scarce.

The right organizational structure today may well be the wrong organizational structure tomorrow. Indeed, in the particular case of the Scenario A and Scenario B, each of the alternatives evaluated as a part of this assessment have been tried over the city's history. Each has worked. A multitude of situational variables, circumstances

and operating realities impact the organizational design decision at any given point in time. Some of these variables include:

- The city's current fiscal condition and financial outlook;
- City Council established strategy and priorities;
- Executive management operating philosophies;
- Customer / stakeholder requirements and expectations; and
- Capabilities, experience and interests of departmental leadership and staff.

The consulting team recommends that the City consider the implementation of Scenario "B". By consolidating the two separate departments, a significant reduction in overhead costs can be achieved. In our judgment, this consolidation can be accomplished with little to no degradation of service levels over the long-term. However, it is a large-scale reorganization and can be expected to result in some short-term disruptions in service quality and responsiveness in the immediate to short term. Therefore, the City should conduct further analysis to develop methodologies to mitigate these disruptions.

Adoption of this option will require a focused effort on planning for the organizational change and deliberate and focused communication to all impacted stakeholders, both internal and external. This option also creates a very large department with a diverse and complex set of responsibilities including a dispersed workforce. However, with effective executive leadership, this structure could capture many of the benefits postulated for other structural approaches and could prove to be a very advantageous solution over the long term.

There are a number of other cities that have already consolidated their public works functions and some or all of their water and wastewater functions. These include such cities as Antioch, Burbank, Burlingame, Davis, Santa Cruz, and Tracy. This organizational alternative is not revolutionary in the municipal market place.

Recommendation #300: The City should evaluate the consolidation of the Public Works Department and the Utilities Department during fiscal year 2011-12.

Exhibit 17 (1)

**Existing Plan of Organization of the
Public Works Department and Utilities Department**

Existing Plan of Organization of the Public Works Department

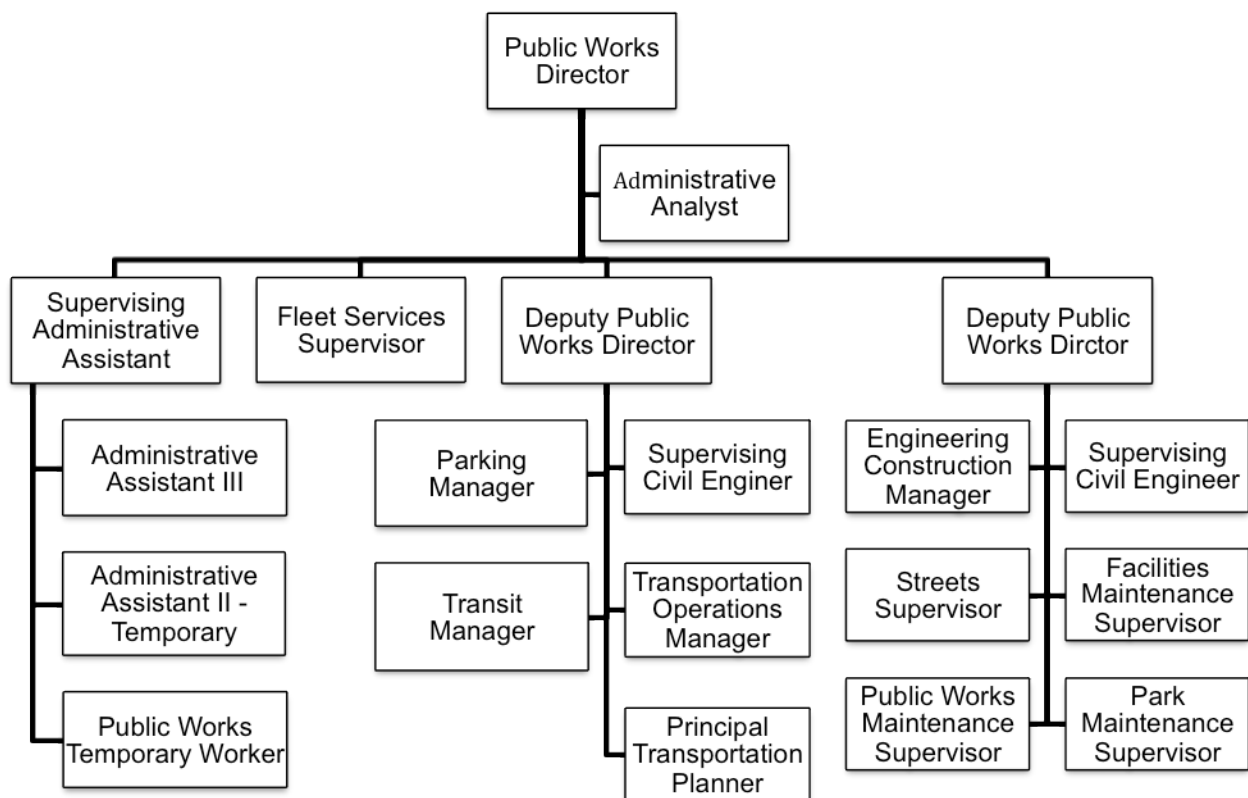


Exhibit 17 (2)

Existing Plan of Organization of the Utilities Department

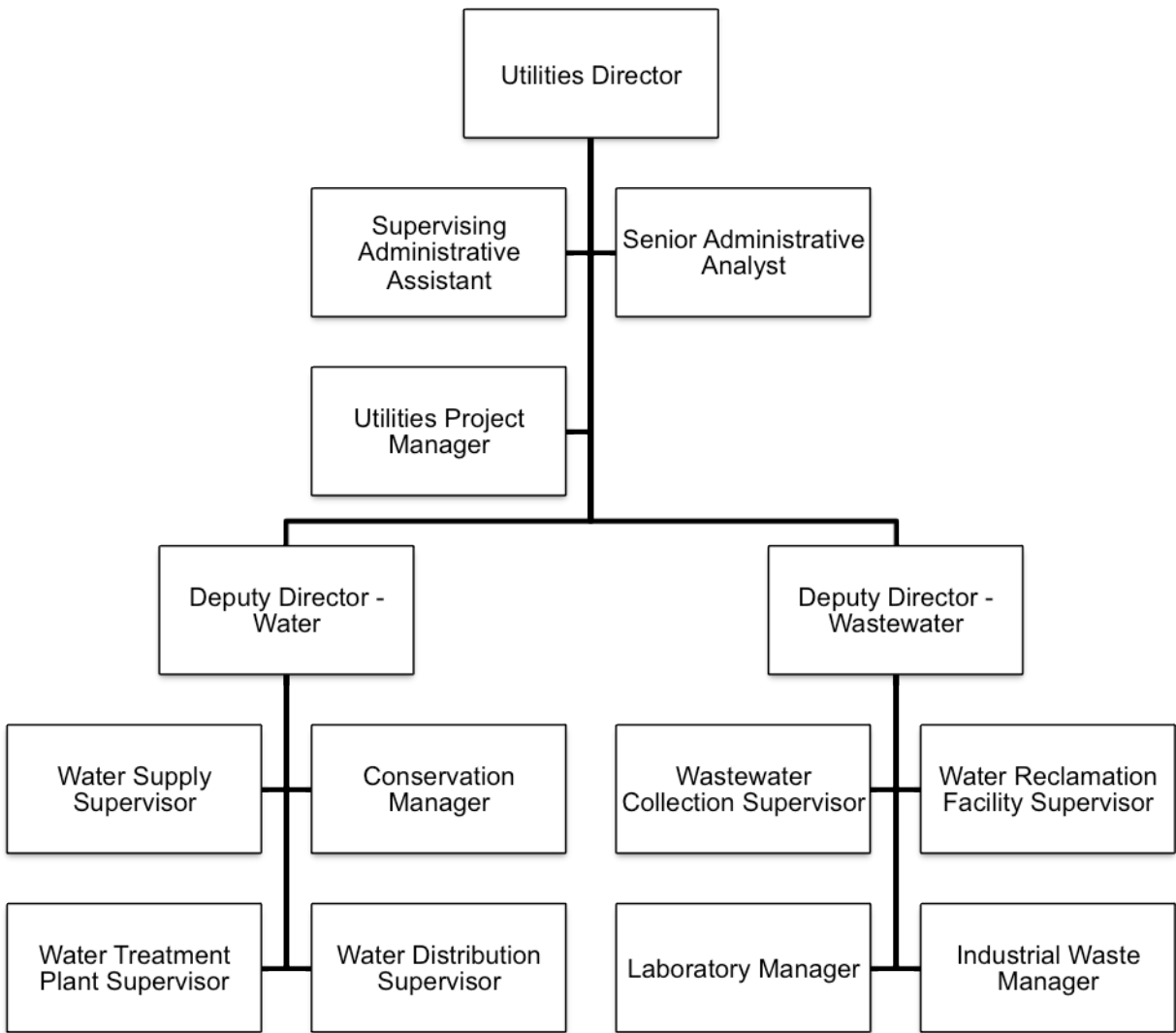


Exhibit 18 (1)

**Advantages and Disadvantages of the
 “As Is” Plan of Organization**

Evaluative Dimensions	Arguments For	Arguments Against
Organization & Structure	▪ The organization is not excessively hierarchical or difficult to effectively control with the present plan of organization ▪ Intangible “transition costs” in the form of resistance to change, organizational adaptation, short-term productivity losses can be expected with consolidation of the two departments	▪ Both departments are responsible for the maintenance of the stormwater collection system ▪ Both departments are responsible for building and custodial maintenance (the Utilities Department is responsible for the maintenance of their own facilities) ▪ Both departments have solid waste collection responsibilities – Utilities for the solid waste and recycling program and Public Works for the street sweeping program. ▪ Both departments have capital project engineering responsibilities – Utilities for determining capital improvement needs, providing preliminary design on capital improvement projects, etc. Public Works for CIP design and construction management / inspection. ▪ The Utilities Project Manager and the Supervising Civil Engineer and Engineering Construction Manager in the Public Works Department require interaction, but the current organizational structure – two different departments – impedes that interaction. ▪ Management and supervisory spans of control in the two departments can be broadened ▪ Both departments have maintenance operations
Communication & Coordination	▪ The departments can effectively manage knowledge in each department given the similarity of skills within each department ▪ There is a minimum of handoffs / exchanges with the exception of capital projects engineering and engineering development review	▪ The two departments are utilizing and will continue to utilize different work order systems (Fox Pro versus Infor - currently and EnerGov and Infor - planned) ▪ The City’s development-related permit application processes involve both departments which can result in

Evaluative Dimensions	Arguments For	Arguments Against
		handoffs of one applicant from one department to the other

Exhibit 18 (2)

Evaluative Dimensions	Arguments For	Arguments Against
Communication & Coordination (Cont'd)		- Both departments have capital project engineering responsibilities, which can result in handoffs / exchanges of information and complications in project management - The City's NPDES Phase II permit indicates that both departments will be responsible for the implementation of BMPs in the public information and outreach, public participation, illicit discharge detection and elimination and pollution prevention/good housekeeping of municipal operations sections
Resource Utilization	- The separation of these staff into two separate departments enables maintenance of specialized skills - The separation of these programs into facilitates allocation of costs since administrative overhead in the two departments is not shared between the general fund and the enterprise funds	- There are opportunities to share utilization of specialized equipment between the two departments - There are duplicative administrative staff and costs shared by the two departments - It is difficult to shift staff resources as workload demands shift given the existence of two separate departments - It is difficult to standardize the City's administrative practices, processes and procedures with these two separate departments
Service Quality & Responsiveness	Certain issues may take longer to resolve, as an appropriate starting place may not be as clear to external customers	- There is a lack of clarity in the approach for the city's asset management issues and inquiries since two departments are responsible for the management of significant City's assets - The development of consistent performance measures for asset management functions is hindered - The ability to eliminate conflicting and / or incompatible responses to service issues is complicated i.e., stormwater - The ability to develop a single accountability for a larger number of service quality and responsiveness

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Evaluative Dimensions	Arguments For	Arguments Against
		issues is not possible

Exhibit 18 (3)

Evaluative Dimensions	Arguments For	Arguments Against
Agility & Flexibility	▪ Decision making tends to be slower in larger, more layered and hierarchical organizations ▪ Over time, larger organizations tend to develop an “inertia” that makes the future introduction of change more difficult than in smaller organizations.	▪ Scalability (the ability to grow and/or shrink in response to workload / customer demands) is complicated. For example, if 1,000 hours of workload is eliminated for each of two departments, it is comparatively more difficult to eliminate a position. Loss of the same 2,000 hours in one department allows an easier reallocation of work and makes the elimination of a single position easier ▪ Rapid cross-unit resource shifting and workload balancing is complicated.
People	▪ Consolidation of two historically separate entities can engender significant change resistance, fear, uncertainty and resistance. These issues will require explicit identification, acknowledgement and planning ▪ Executive level skills required to lead a large and diverse department are substantial and scarce	▪ The opportunity to create and sustain a consistent organizational culture and operational philosophy, congruent with those of the executive leadership and policy makers, is complicated ▪ The ability to provide multi-disciplinary training opportunities and cross-utilize staff is hindered ▪ Career advancement and professional development potential is obstructed

Exhibit 19

**Possible Plan of Organization of a
Consolidated Public Works and
Utilities Department**

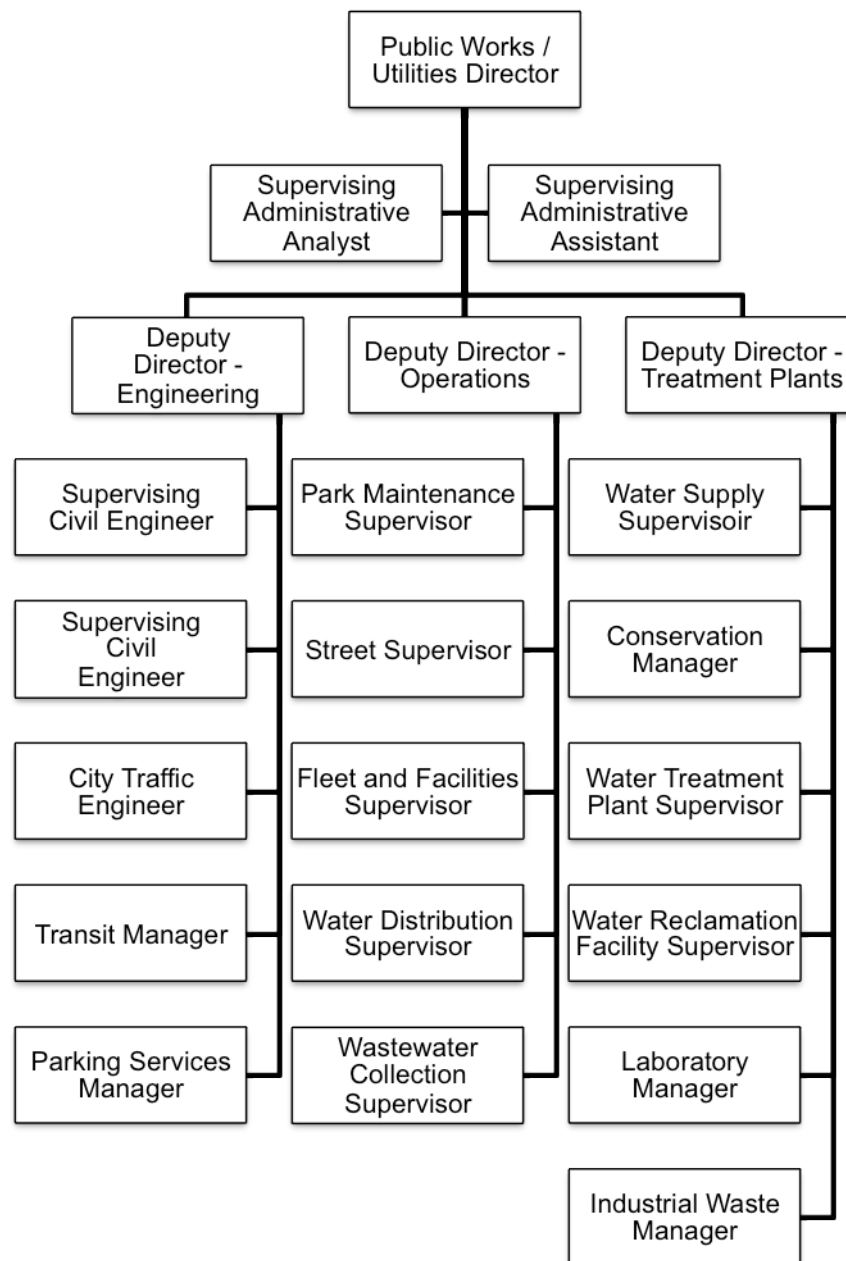


Exhibit 20 (1)

**Advantages and Disadvantages of the
Plan of Organization for a Consolidated
Public Works and Utilities Department**

Evaluative Dimensions	Arguments For	Arguments Against
Organization & Structure	▪ Combining functions into single work groups will facilitate cooperation, reduce “finger pointing” and creates shared ownership of results. ▪ Concentration of core competencies and strong organizational cohesion of highly related functions. Personnel performing similar and highly interdependent functions will be grouped together. ▪ Accountability will be increased as items can “fall between the cracks” of the organization. ▪ Improved ability to coordinate the totality of the City’s CIP including Utilities. ▪ “Unity of command” principal is emphasized, with a single accountable leader responsible for the City’s day-to-day public works and utility activities. • Management and supervisory spans of control are broadened.	▪ The organization could become excessively hierarchical and difficult to effectively control. ▪ The large diversity of functionally distinct (though related) units requires very active management and leadership oversight. ▪ Intangible “transition costs” in the form of resistance to change, organizational adaptation, short-term productivity losses can be expected.
Communication & Coordination	▪ Fewer handoffs will occur between departments, with like functions being together. Enhanced ability to create, share and use knowledge. ▪ Ability to communicate and coordinate closely related, common functions is enhanced as contrasted to the current organization. ▪ With all public works and utilities related personnel linked within the same organization, capital improvement programming, development coordination and project delivery functions will be more closely aligned. ▪ Opportunities for “message mixing”	▪ Difficulty in managing knowledge effectively due to the diversity of skills within the department. ▪ Potential for stifling differing views, dissent, debate, etc. in an effort to conform to the accepted departmental “doctrine.”

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Evaluative Dimensions	Arguments For	Arguments Against
	through the communications channel are minimized as contrasted to a multi-department scenario. - Same-level or peer-to-peer communication and coordination is enhanced by removal of departmental boundaries. - Assigning responsibility for who does what should be more easily communicated. - Cross-functional knowledge sharing is easier within a single departmental structure.	
Resource Utilization	- Significant administrative cost / overhead reductions can be expected. - Sharing of scarce or specialized resources, including people and equipment, is more easily accommodated within the context of a single set of priorities in one department. - Improved ability to re-allocate resources to meet shifting workload demands. - Standardization of common administrative practices, processes and procedures is facilitated.	Care will have to be taken that as the knowledge base is broadened, specialized skills are not lost.
Service Quality & Responsiveness	- The potential to create a single organizational point of contact for the majority of the City's public works and utilities issues and inquiries. - The development of comprehensive measures of performance for closely related functions could be enhanced. - Opportunities to avoid conflicting and / or incompatible responses to service issues are enhanced. - Single department accountability for a larger number of service quality and responsiveness issues.	Certain issues may take longer to resolve, as an appropriate starting place will not be as clear to external customers.
Agility & Flexibility	Scalability (the ability to grow and/or shrink in response to workload / customer demands) is improved. For example, if 1,000 hours of workload is eliminated for each of two departments, it is comparatively more difficult to	- Decision making tends to be slower in larger, more layered and hierarchical organizations - Over time, larger organizations tend to develop an "inertia" that makes the future introduction of change more difficult than in

Evaluative Dimensions	Arguments For	Arguments Against
	eliminate a position. Loss of the same 2,000 hours in one department allows an easier reallocation of work and makes the elimination of a single position easier. ▪ Rapid cross-unit resource shifting and workload balancing is made easier.	smaller organizations. As a general rule, smaller departments are inherently more agile than larger ones
People	▪ Enhanced opportunity to create and sustain a consistent organizational culture and operational philosophy, congruent with those of the executive leadership and policy makers, is enhanced. ▪ Increased multi-disciplinary training opportunities exist within the unified public works structure. ▪ Increased career advancement and professional development potential within the Public Works structure.	▪ Consolidation of two separate entities can engender significant change resistance, fear, uncertainty and resistance. These issues will require explicit identification, acknowledgement and planning. ▪ Executive level skills required to lead a large and diverse department are substantial and scarce.

16. PUBLIC WORKS TRENDS

The Request for Proposal issued by the Public Works Department required a trend analysis for what the future holds for municipal organizations for the next twenty-five (25) years, and how these changes will likely affect the department.

However, it is important to recognize the limitations of prognostications. In the largest and best-known test of the accuracy of expert predictions, a study reported in *Expert Political Judgment: How Good Is It? How Can We Know?*, the average expert was found to be sorely wanting.¹⁵⁶ The study examined 27,451 forecasts by 284 academics, pundits and other prognosticators. The study concluded that the experts bombed. The most generous conclusion the study could draw was that some experts were less awful than others. In fact, the study concluded that these so called experts were barely able to eke out a tie with dart-throwing chimpanzees.

1. THE CITY AND THE PUBLIC WORKS DEPARTMENT WILL FACE A NUMBER OF NUMBER OF CHALLENGES OVER THE NEXT TWENTY-FIVE YEARS.

In developing these trends, the consulting team referenced a number of other professional associations and documents. The most obvious trend is change. The *IBM Global Business Services Strategy and Change* noted that “in our past three global CEO studies, CEO’s consistently said that coping with and managing change was their most pressing challenge. In 2010, we identified a new primary challenge: complexity. CEO’s told us they operate in a world that is increasingly volatile, uncertain, multi-faceted, and structurally different. Many shared their view that

¹⁵⁶ Expert Political Judgment, How Good Is It? How Can We Know?, Philip E. Tetlock, 2006

incremental changes are no longer sufficient.” This CEO study included 1,541 chief executive officers, general managers, and senior public sector leaders. Approximately 21% of the participants were senior public sector leaders.¹⁵⁷

The development of trends is an important exercise only if the Public Works Department uses these trends in the development of its strategic plan, and only if the Public Works Director and his management team are held accountable for effectively anticipating and responding to these trends.

The primary trends identified by the consulting team are presented in the sections below.

(1) Aging Infrastructure In Need Of More Intensive Asset Management Attention And In Need Of Intensive Repair And Replacement Efforts.

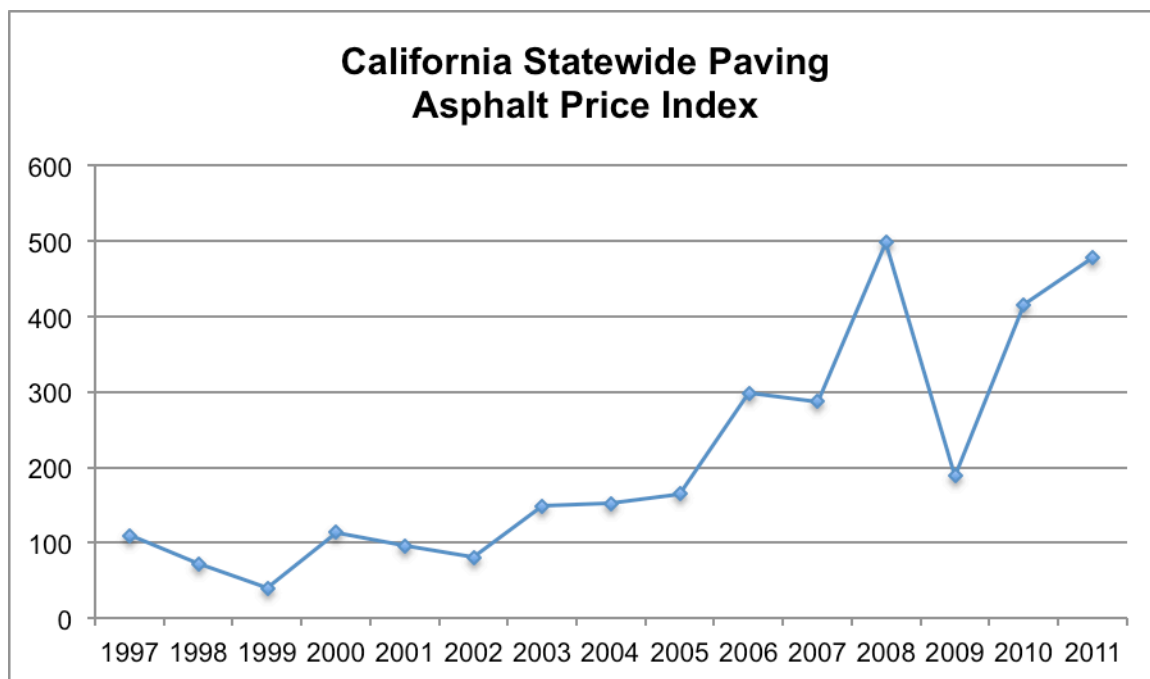
The San Luis Obispo Public Works Department has the fortune of Measure Y, which funds, in part, neighborhood street paving and pothole repair. However, even with this additional infusion of funds, the City and the Public Works Department face the challenge of rising material costs noted previously. That will impede its ability to fund the replacement of aging infrastructure.

(2) Rising Materials Costs (Concrete, Steel, Chemicals, Fuel, Etc.) That Are Significantly Affecting Ongoing Operational Expenses And, More Importantly, Capital Expenses Associated With New And Replacement Infrastructure Projects.

This will make it increasingly costly for the San Luis Obispo Public Works Department to preventively maintain and rehabilitate the infrastructure entrusted to its care i.e., streets, parks, stormwater collection system, etc. It will also make it increasingly expensive for the San Luis Obispo Public Works Department to provide

¹⁵⁷ International Business Machines, Capitalizing on Complexity; Insights from the Global Chief Executive Officer Study, 2010.

services given the price increases in fuel i.e., transit services. This is clearly indicated by the chart below, which depicts the California Statewide Paving Asphalt Price Index.¹⁵⁸ This index indicates in general what has occurred with the price of asphalt in the State; it has increased five fold in the past fifteen years.



(3) Regulatory Challenges.

Regulations, such as the regulations regarding the National Pollutant Discharge Elimination System, have and will continue to impact the Department. This will result in increased overhead costs as the Department demonstrates, in writing, its compliance with these regulations, increase the operating costs for the Department in ways that residents and business do not appreciate and little understand, and potentially increase service levels for some services (i.e., creek cleaning, street sweeping, and drainage inlet cleaning), and force others to be reduced given the

¹⁵⁸ California Department of Transportation, California Paving Asphalt Price Index, 2011.

funding limitations the Department faces. It can also potentially result in new types of capital expenditures that are unplanned such as treatment of stormwater before the stormwater is allowed to drain into creeks.

(4) Identifying And Meeting Security And Emergency / Hazard Preparedness Needs.

There has been a combination of tragedies in the past ten years, such as 9 / 11 and the recent earthquake in Japan, that have heightened the awareness of public works managers to increase the security of their facilities, including their technology, and to anticipate and prepare for worst case scenarios in emergency / hazard preparedness. Increasingly, public facilities face potential challenges from terrorism, to pandemics and natural disasters. The nature of these threats is changing and the potential consequences of inadequate mitigation, preparation and response demand attention are significant.¹⁵⁹ The Public Works Department will need to evaluate the security needs of its facilities. Given the proximity of Diablo Canyon nuclear power plant, and the recent tragedy at the Fukushima nuclear power plant, the Public Works Department may need to alter its emergency / hazard preparedness planning and preparation.

(5) Cuts In State And Federal Funding And Uncertainty Of Future State And Federal Funding.

The federal deficit has increased by 182% since 2008, and amounts to almost \$1.3 trillion. The Director of the Congressional Budget Office indicated in the Director's Blog in March 2011 that (1) if current policies are continued, the gap between spending and revenues will remain very large even after we return to normal economic

¹⁵⁹ International Business Machines, IBM Institute for Business Value, Government 2020 and the Perpetual Collaboration Mandate, 2008.

conditions; (2) fiscal policy cannot be put on a sustainable path just by eliminating waste and inefficiency, and the policy changes that are needed will significantly affect popular programs or people's tax payments or both; (3) policymakers face difficult tradeoffs in deciding how quickly to implement policy changes that would reduce future budget deficits; and (4) there is more focus in Washington on federal budget problems today than there has been since the late 1990s, and that focus has led to a range of proposals for tackling the problems.¹⁶⁰ The federal government faces a significant fiscal challenge: the deficit posted in 2009 was the highest in nearly 65 years in terms of the % of GDP. The deficit in 2011 will almost match that proportion. These deficits are unsustainable in the long-term, and will likely impact the revenue provided to local government by the federal government. This has already happened and is continuing to happen at the state level. These pressures at the federal and state level could continue to affect funding available to the Public Works Department to provide services such as Transit or to fund capital improvements through grants and other sources such as the Intermodal Surface Transportation Efficiency Act (ISTEA) and Community Development Block Grants (CDBG).

(6) Workforce Complexities, Including Retirements, And Difficulties Recruiting And Retaining Qualified Staff.

As noted previously, a significant proportion of the Public Works Department exceeds the age of 50; it was recommended that the Department prepare a succession plan for "hard to fill" positions. In addition, while the job market at the present time is a "buyers" market, in the previous ten years public works departments have faced significant difficulty in attracting and retaining professional engineers. This

¹⁶⁰ Congressional Budget Office Director's Blog, Four Observations About the Federal Budget, March 2011.

suggests that the Department needs to address career development, enhance the training of its employees, and focus attention on their quality of life and work / life balance such as flexible work hours. In addition, the Department will likely need to use employment strategies, such as job sharing and temporary employment, to retain an aging workforce that has the option of retirement. The other and significant challenge that the Department will face is knowledge transfer. The Department should develop plans to enable the transfer of knowledge from its more experienced employees so that job-related knowledge is transferred effectively to the next generation of managers and supervisors through techniques such as management and supervisory training, mentoring and coaching. In fact, the Department may wish to bring retired workers in key positions back solely to facilitate the transfer of knowledge to their successor. This strategy is based upon an Association for the Advancement of Retired Persons survey that reported that fully 80% of retiring Baby Boomers plan to work in retirement.

(7) A Growth In Population In San Luis Obispo Does Not Appear As If It Will Be A Relevant Or Significant Trend.

Since 2000, the total population of the City has grown by 1.2% from 44,179 in 2000 to an estimated 44,948 in 2010. The City's long-term population growth rate has reflected slow, steady growth of one percent or less per year.¹⁶¹ For the City, the San Luis Obispo Council of Government (SLOCOG) projects a continuation of the relatively slow growth rates experienced between 2000 and 2008, with a 0.49% annual growth rate to 2030.¹⁶² The total population of the City of San Luis Obispo is

¹⁶¹ City of San Luis Obispo, Housing Element, 2010.

¹⁶² City of San Luis Obispo, Housing Element, 2010.

projected by SLOCOG at 48,200.¹⁶³ This is only 7.2% than the 2010 population, and only an increase of 3,252 in population.

(8) The Methods That Residents Use To Commute To Work, School, Or Play Will Continue To Evolve, But Alternative Forms Of Transportation Will Likely Increase Faster Than Vehicle Miles Of Travel.

SLOCOG completed a *Transportation System Performance Measurement Report* in 2010. That report noted that “over the past twenty years the surface transportation system has only moderately been expanded while low-density land development patterns, population, growth and changing socio-demographic conditions has resulted in increasing traffic levels and congestion. For most of the past twenty years Vehicle Miles of Travel (VMT) has increased at a faster rate than the population. At the same time, as a result of many years of effort to expand the availability, efficiency and practicality of public transit services, there has been a significant increase in transit ridership. Additionally, as a result of expanded public outreach about the value of alternative modes of travel, and an expansion in alternative transportation improvements the number of people bicycling and walking to work has almost doubled over prior years.”¹⁶⁴ Given the increasing price of gasoline, the Public Works Department should expect increasing ridership in the City’s transit system and increased interest in alternative transportation. The increased use of alternative transportation will continue to require capital projects to develop bike paths and bicycle storage facilities.

(9) An Aging Population.

¹⁶³ City of San Luis Obispo, Housing Element, 2010.

¹⁶⁴ San Luis Obispo Council of Governments, Transportation System Performance Measures Report, 2010.

The United States is in the midst of a huge demographic change. People are living longer, and national fertility rates are declining, and local governments will be faced with serving a growing group of retired citizens. The public sector will feel this change particularly acutely, as an aging society places intense demands upon healthcare, housing, social care and other services. In fact, by the year 2050, the % of retired population to working population in the United States is expected to reach almost 40% (versus less than 20% in 1950). The number of older persons in the US will nearly double from 2008, to reach 77 million in 2030, according to the Institute of Medicine's 2008 report, *Retooling for an Aging America: Building the Health Care Workforce*. This could put increasing pressures on all levels of government to reallocate funding to healthcare, housing, social care away from asset management, maintenance and repair. It could also increase demand for door-to-door shuttles by the Transit Division. Overall, responding to these looming demographic shifts will require careful consideration and planning.

(10) Global Warming Or Climate Change.

While the concept of global warming or climate change is controversial in some circles, the temperatures that the world has experienced have increased over the past several years. The National Aeronautics and Space Administration reports temperature changes, and the data indicate an increase in global temperatures (using only meteorological station data) since the mid-1960's.¹⁶⁵ This will challenge public works departments to become responsible environmental stewards through such practices as "green" fleet maintenance operations that incorporate energy

¹⁶⁵ National Aeronautics and Space Administration, GISS Surface Temperature Analysis, <http://data.giss.nasa.gov/gistemp/graphs/>, 2011.

conservation technologies, materials recycling programs, operations and maintenance procedures to comply with both emissions standards and stormwater regulations, procedures supporting efficient driver behavior, paperless technologies, environmentally-friendly procurement policies, efficient routing, and remote diagnostic. As an example of a Public Works Department that is a leader in dealing with global warming and environmental stewardship, the Fleet and Facilities Business Unit in the Ventura Public Works Department has developed performance measures for their “green” community such as reducing fleet fuel consumption, reducing City greenhouse gas emissions, decreasing City electrical energy consumption, etc. Since 2007, the Public Works Department in Ventura has been able to reduce citywide fleet fuel consumption by 10% (versus 207), reduced CO² emissions by 211 metric tons, and reduced City energy use by 5% (versus 2007).

(11) An increase in information at the fingertips of customers will increase customer service expectations.

The world has become and will increasingly become massively interconnected. This will exponentially increase customer options and customer expectations of local government. However, it is also an opportunity to develop deep customer insights in terms of what matters to customers. This will require that the Public Works Department get closer to customers, citizens, and stakeholders, and explore new and different channels to reach citizens to increase confidence of these customers in the Department, to engage these citizens in setting the direction and vision for the Department, and to provide a voice for these citizens.

(12) The Increased Use Of Technology By Residents And Businesses Will Increase Expectations That Business Transactions Will Be Conducted Over The Internet.

San Luis Obispo has a high proportion of residents with college degrees and access to personal computers or wireless devices such as the iPhone. These citizens have access to many public services, forms, and information from city, state, and federal agencies over the Internet at any time, and increasingly are conducting transactions that way. The Public Works Department will need to continue to move transactions to the Internet to meet this demand.¹⁶⁶ At the same time, governments will face the problem of protecting the security and privacy of information including the information of their customers, while relying more on the use of such data to provide services, calling for a delicate balancing act.

(13) Technologies Will Continue To Change The Way The Public Works Department Does Its Business.

There are multiple examples such as advanced intelligent transportation system (ITS) information technology built into the infrastructure to increase capacity and safety, wireless mobile data terminals to enable the wireless transmittals of service requests to crews in the field, etc. This will require dexterity on the part of the Public Works Department and the requisite funding to acquire the technology.

(14) Leadership Styles Will Need To Adapt To A New Generation.

The millennial have significant expectations from the workplace.¹⁶⁷ Studies predict that Generation Y will switch jobs frequently, far more than Generation X due to their expectations. To better understand this mindset, many large firms are currently studying this conflict and are trying to devise new programs to help older employees understand Generation Y, while at the same time making Generation Y more

¹⁶⁶ International Business Machines, IBM Institute for Business Value, Government 2020 and the Perpetual Collaboration Mandate, 2008.

¹⁶⁷ Wall Street Journal, The Trophy Kids Go To Work, Ron Alsop, 2008.

comfortable. For example, Goldman Sachs conducts training programs that use actors to portray Generation Y who assertively seek more feedback, responsibility, and involvement in decision-making. After the performance, employees discuss and debate the generational differences they have seen played out.¹⁶⁸ The increase of Generation Y in the workforce will require a different leadership, management, and supervisory style by the Public Works Department.

(15) Information Will Need To Be Generated To Enable Leadership To Respond To Change With More Dexterity And Flexibility.

Many public sector leaders are grappling with the pressures of expanded and expanding missions amid growing budget constraints, and are increasingly feeling the need for greater speed and flexibility.¹⁶⁹ This increased need for dexterity and flexibility increases the need to provide managers and supervisors with meaningful performance measurement data on an ongoing basis to enable these managers to analyze and integrate the right information, gain insights, and make quick, yet informed decisions, and make course corrections. Overall, the consulting team found little in the way of meaningful ongoing performance measurement data generated for the managers and supervisors of the San Luis Obispo Public Works Department.

(16) Public Works Departments Will Increasingly Embrace Asset Management Practices.

This is becoming increasingly necessary given constrained funding and citizen expectations that tax dollars will be spent intelligently and efficiently. Asset management requires an integrated set of processes to minimize the life-cycle costs

¹⁶⁸ Wall Street Journal, The Trophy Kids Go To Work, Ron Alsop, 2008.

¹⁶⁹ International Business Machines, Capitalizing on Complexity; Insights from the Global Chief Executive Officer Study, 2010.

of owning, operating, and maintaining assets, at an acceptable level of risk, while continuously delivering established levels of service. Effective asset management requires the development of an asset management vision, mission and strategies, asset management capability forward planning (i.e., the existing state of assets, levels of service to maintain those assets, replacement life-cycle development, funding strategies, etc.), asset management portfolio management (i.e., asset management plans, asset management tools such as pavement management software, and maintenance management software, optimized business processes to assure the assets are preventively maintained, effective work management processes to assure work is formally planned and scheduled and a history of the work performed to maintain / repair each asset is recorded in an automated system, the development of an organizational capacity to manage assets based upon their life-cycles, etc.), and the implementation of asset management practices and policies. With the exception of the pavement management system, there is little in place in the Public Works Department that resemble comprehensive asset management practices. Indeed, one of the cost cutting measures employed by the Department has been the reduction or elimination of minor capital outlay funding, which reduces the ability of the Department to achieve optimum life-cycles for assets.

(17) Cost Cutting.

All local governments in California have been forced to cut costs in the past several years, and San Luis Obispo is no exception. This requires the development of long-range financial plans, such as those developed by San Luis Obispo, that show how the service cuts and layoffs will get the finances of the local government into a

stable situation, so the organization is sustainable over time. Part of this cost cutting should involve the development of new program delivery mechanisms including increased outsourcing of both core and routine functions and managed competition. Organizational reconfiguration is another cost cutting alternative that involves increasing spans of control and fewer managers and supervisors. Local governments are being asked to do more, do it better, and do it with the same or less revenue. This will continually challenge the Public Works Department - how to deliver the services that resident's and businesses expect, how to maintain assets cost effectively preventing or reversing asset degradation, and accomplish this with the same or less revenue (or develop new revenue sources).

(18) Increased Accountability.

Residents and businesses are increasingly expecting public sector services to be comparable to the best in private sector. Governments are facing increasing public and media scrutiny of decision-making, spending, and performance. This will require that the Public Works Department utilize data and performance measures more effectively to demonstrate the return on investment that residents and businesses make in the services delivered by the Department. The effective use of EnerGov by the Department could provide that capacity. Greater use of performance measurement data – relevant and meaningful data – is the foundation for productivity improvement.

(19) Long-Term Planning.

Public sector organizations must always respond to short-term priorities. However, public works departments also face a range of important long-term issues, such as asset management, and require these departments to engage in systematic

and long-term planning. The City has recently initiated a five-year capital improvement program. The Public Works Department has developed and implemented a pavement management plan that provides a long-term asset management plan for the maintenance of streets, sidewalks, signage, and street trees. The Departments Fleet Services Division has developed a fleet replacement policy (Fleet Use Target Guidelines Before Replacement). However, other aspects of public works functions – such as parks and facilities - lack such long-term asset management plans. The Department lacks a strategic plan. The Department lacks an information technology plan to guide the deployment of technology in the Department. Long-term planning is increasingly becoming an integral part of decision-making processes in leading organizations.

* * * * *

Altogether, public works departments are facing a dynamic environment. The trends enumerated in this chapter should be used by the Public Works Department in the development of its strategic plan, particularly in the assessment of its strengths, weaknesses, opportunities and threats. The Public Works Department can expect to operate in a context of ongoing and accelerating change that will require strong people-oriented leadership by its management team, and clear and persuasive communication.

Recommendation #301: The trends enumerated in this chapter should be used by the Public Works Department in the development of its strategic plan, particularly in the assessment of its strengths, weaknesses, opportunities and threats.

APPENDIX - EMPLOYEE SURVEY

As part of the Management and Performance Audit of the Public Works Department, the Matrix Consulting Group conducted a confidential employee survey to obtain the perceptions of the employees of the Department regarding staffing, operations, management, leadership and organizational performance.

1. THE SURVEY WAS DISTRIBUTED TO ALL OF THE EMPLOYEES OF THE PUBLIC WORKS DEPARTMENT.

After distributing the employee survey to all the employees of the Public Works Department, 86 employees provided a response. This represents a response rate of 71% (based on the number of filled positions within the Department). The number of respondents in each Division is presented in the table below.

Current Assignment	Number of Respondents	% of Total
Administration	8	9%
Capital Projects Design	8	9%
Facilities Maintenance	7	8%
Urban Forestry	6	7%
Parks Maintenance	12	14%
Street Maintenance	15	17%
Construction Management	6	7%
Development Review	5	6%
Transportation Operations	5	6%
Fleet Services	4	5%
Parking Services	8	9%
Transit Services	2	2%
Total	86	100%

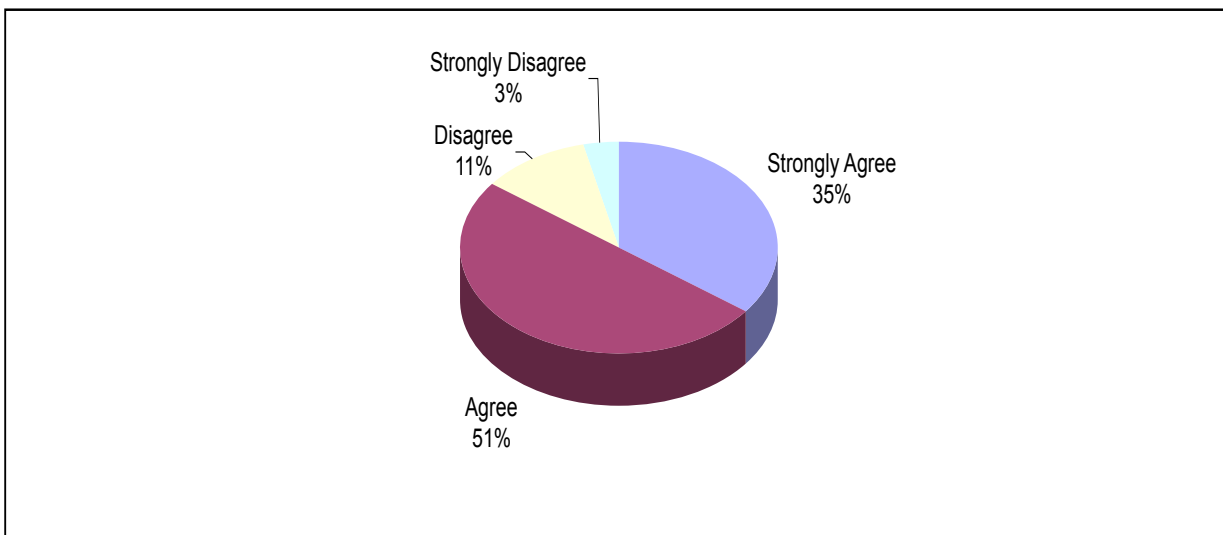
The survey was prepared by the Matrix Consulting Group, and administered online using Survey Monkey. The survey contained 45 multiple-choice questions. Employees were asked to respond to each statement by selecting “neither agree nor

disagree”, “strongly agree,” “agree,” “disagree,” and “strongly disagree.” Results were analyzed by topic area, by division, and department wide.

2. OVERALL, EMPLOYEES CITED A HIGH NUMBER OF POSITIVE ASPECTS OF THE PUBLIC WORKS DEPARTMENT.

In reviewing the responses to the employee questionnaire, it is important to look at the pattern of responses for the entire group versus individual responses.

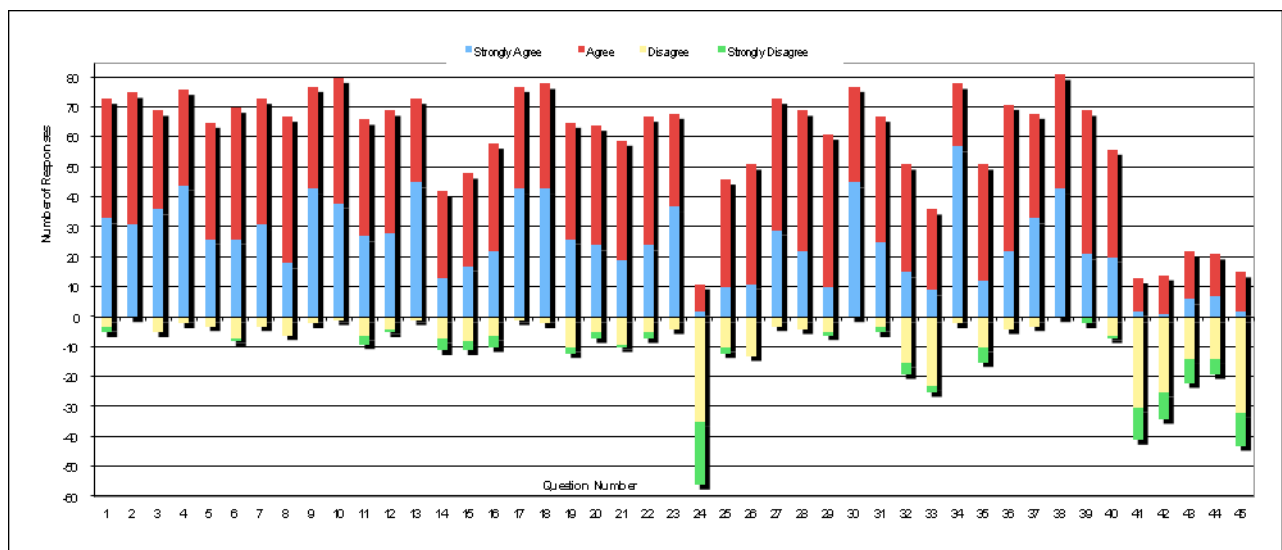
The chart below summarizes the overall distribution of responses to statements contained in the employee survey. It should be noted that the chart does not include responses in which the employees selected “neither agree nor disagree” or did not make a selection.



The response pattern for all statements in the employee survey indicates employees had relatively high levels of agreement with the various survey statements. Approximately, 86% of responses were positive (either “strongly agree” or “agree”), 14% were negative (either “strongly disagree” or “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 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 exhibit presents the positive and negative responses for each statement provided in 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 charts below provide an overall visual representation of the response to each statement.



As the chart indicates, most statements received strong positive responses by the employees of the Public Works Department. Those statements that received a preponderance of positive responses (more than 70 respondents agreed with the statement) are presented below.

- Question #1 – I receive recognition from my immediate supervisor when I do a good job.
- Question #2 – Safety hazards are quickly corrected once brought to the attention of supervisors in my work unit.

- Question #4 – My immediate supervisor is accessible when I need him / her.
- Question #6 – My work unit has effective decision-making processes (no undue delays).
- Question #7 – My work with the Department gives me a feeling of personal accomplishment.
- Question #9 – My immediate supervisor is open and honest with me.
- Question #13 – The safety of employees in my work unit is a priority to the supervisors and managers.
- Question #17 – I am proud to work for the Department.
- Question #18 – A high level of performance is expected of employees of the Department.
- Question #27 – I am encouraged to use my own initiative and judgment when carrying out my job in my work unit.
- Question #30 – Customer service is a top priority in my work unit.
- Question #34 – My work unit provides a high level of service to the residents of San Luis Obispo.
- Question #36 – I have the tools and equipment I need to efficiently perform my job.
- Question #38 – The employees in my work unit are dedicated to meeting customer expectations.

At the same time, some statements received a significant proportion of disagreements with the statements (those statements in which the number of respondents disagreeing with the statement exceeded 21 – a disagreement rate of 25% or greater). These statements are presented below.

- Question #24 – We have enough employees in my work unit to handle the workload.
- Question #33 – My work unit is frequently in a crisis mode due to workload that exceeds staff resources.

- Question #41 – The Department has sufficient staff resources to properly maintain existing infrastructure assets.
- Question #42 – The City has effectively addressed increased asset maintenance requirements within our Department's budget.
- Question #43 – I have seen an overall deterioration in our infrastructure assets over the course of my career.
- Question #45 – The Department is positioned well to handle increased infrastructure assets and increased regulations without significant service level impact.

An analysis of the questions – by topic – are presented in the Divisions that follows.

3. MOST RESPONDING EMPLOYEES NOTED THAT SAFETY CONCERNS WERE ADEQUATELY ADDRESSED BY THE PUBLIC WORKS DEPARTMENT.

There were four 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.	0 0%	0 0%	9 11%	44 52%	31 37%
5. The Public Works Department periodically inspects and corrects safety hazards and unsafe work conditions.	0 0%	3 4%	16 19%	39 46%	26 31%
13. The safety of employees in my work unit is a priority to the supervisors and managers.	0 0%	1 1%	11 13%	28 33%	45 53%
40. Safety training is a part of the ongoing staff development and training in my work unit.	1 1%	6 7%	22 26%	36 42%	20 24%

Important points to note regarding these responses are presented below.

- 89% of employees agreed with the statement in question #2 that said "Safety hazards are quickly corrected once brought to the attention of supervisors in my work unit." The remaining 11% neither agreed nor disagreed.

- 77% agreed with the statement in question #5 that said “The Public Works Department periodically inspects and corrects safety hazards and unsafe work conditions.” Only 4% disagreed, while 19% neither agreed nor disagreed.
- 86% agreed with the statement in question #13 that said “The safety of employees in my work unit is a priority to the supervisors and managers.” Only 1% disagreed and 13% neither agreed nor disagreed.
- 66% agreed with the statement in question #40 that said “Safety training is a part of the ongoing staff development and training in my work unit.” About 8% disagreed and 26% neither agreed nor disagreed.

The majority of respondents believe that the safety of employees is a high priority not only within their work unit, but also within the Public Works Department as a whole. This is evidenced by the number of respondents who both agree and strongly agree that periodic inspections and corrections of safety hazards are quickly corrected and that safety training is a part of on-going staff development.

4. MOST RESPONDING EMPLOYEES WERE SATISFIED WITH THE LEVEL OF CAREER DEVELOPMENT, SKILL BUILDING, AND TRAINING OFFERED THROUGH THE PUBLIC WORKS DEPARTMENT.

There were three 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.	3 4%	6 7%	10 12%	39 46%	27 32%
21. I receive the training I need to do an effective job in my work unit.	1 1%	9 11%	15 18%	40 48%	19 23%
22. My immediate supervisor does an effective job of coaching and mentoring me.	2 2%	5 6%	11 13%	43 51%	24 28%

Important points to note regarding these responses are presented below.

- 78% of the respondents agreed with the statement in question #11 that said “I have been given a real opportunity to improve my skills in my work unit.” About 11% disagreed and 12% neither agreed nor disagreed.
- 70% of the respondents agreed with the statement in question #21 that said “I receive the training I need to do an effective job in my work unit.” About 12% disagreed and 18% neither agreed nor disagreed.
- 79% of the respondents agreed with the statement in question #22 that said “My immediate supervisor does an effective job of coaching and mentoring me.” Only 8% disagreed and 13% neither agreed nor disagreed.

Most respondents were satisfied with the extent of training and skill development opportunities available in their work unit, and believe their immediate supervisor does an effective job of coaching and mentoring them.

5. MOST RESPONDING EMPLOYEES INDICATED THAT THEY HAD THE TOOLS AND EQUIPMENT THEY NEED TO DO THEIR JOB.

There were two questions in the employee questionnaire regarding the quality of Public Works Department 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.	0 0%	4 5%	10 12%	49 58%	22 26%
37. The vehicles assigned to my work unit are in good condition.	0 0%	3 4%	13 15%	35 42%	33 39%

Important points to note regarding these responses are presented below.

- 84% of the respondents agreed with the statement in question #36 that said “I have the tools and equipment I need to efficiently perform my job.” Only 5% disagreed and 12% neither agreed nor disagreed.
- 81% of the respondents agreed with the statement in question #37 that said “The vehicles assigned to my work unit are in good condition.” Only 4% disagreed and 15% neither agreed nor disagreed.

The majority of respondents believe they have the tools and equipment, including vehicle, to efficiently perform their jobs.

6. MOST RESPONDING EMPLOYEES THINK THAT THE PUBLIC WORKS DEPARTMENT IS A GOOD PLACE TO WORK.

There were two questions in the employee questionnaire regarding organizational culture and morale within the Public Works Department. 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 Department gives me a feeling of personal accomplishment.	0 0%	3 4%	9 11%	42 49%	31 36%
17. I am proud to work for the Department.	0 0%	1 1%	7 8%	34 40%	43 51%

Important points to note regarding these responses are presented below.

- 86% of the respondents agreed with the statement in question #7 that said “My work with the Department gives me a feeling of personal accomplishment.” Only 4% disagreed and 11% neither agreed nor disagreed.
- 91% of the respondents agreed with the statement in question #17 that said “I am proud to work for the Department.” Only 1% disagreed and 8% neither agreed nor disagreed.

Most respondents believed that the Public Works Department is a good place to work, and are proud to work for the Department.

7. MOST RESPONDING EMPLOYEES WERE SATISFIED WITH THE LEVEL OF TEAMWORK AND WORKLOAD BALANCE WITHIN THEIR WORK UNIT.

There were three questions in the employee satisfaction questionnaire regarding teamwork within the Public Works Department. 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.

CITY OF SAN LUIS OBISPO, CALIFORNIA
Management and Performance Audit of the Public Works Department

Question	Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree
23. The employees in my work unit help each other out when someone falls behind or gets in a tight spot	0 0%	4 5%	13 15%	31 36%	37 44%
35. Workload is evenly balanced among the employees in my work unit.	5 6%	10 12%	19 22%	39 46%	12 14%
39. The working relationships between the different work units in the Department are generally good.	2 2%	0 0%	14 16%	48 56%	21 25%

Important points to note regarding these responses are presented below.

- 80% of the respondents agreed with the statement in question #23 that said “The employees in my work unit help each other out when someone falls behind or gets in a tight spot.” Only 5% disagreed and 15% neither agreed nor disagreed.
- 60% of the respondents agreed with the statement in question #35 that said “Workload is evenly balanced among the employees in my work unit.” About 18% disagreed and 22% neither agreed nor disagreed.
- 81% of the respondents agreed with the statement in question #39 that said “The working relationships between the different work units in the Department are generally good.” Only 2% disagreed and 16% neither agreed nor disagreed.

Overall, a significant majority of respondents believed that there was good teamwork in their unit, and that working relationships across divisions were good. While a majority of respondents believed workloads are evenly balanced among employees in their work unit, some respondents disagreed.

8. MOST RESPONDING EMPLOYEES WERE SATISFIED WITH THE LEVEL OF AUTHORITY THEY HAD WITHIN THEIR DIVISION AND WERE MOST CONCERNED WITH THEIR PARTICIPATION IN DEPARTMENT DECISION-MAKING.

There were two questions in the employee questionnaire regarding decision-making within the Public Works Department. 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.

CITY OF SAN LUIS OBISPO, CALIFORNIA
Management and Performance Audit of the Public Works Department

Question	Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree
15. I am satisfied with my participation in Department decisions.	3 4%	8 9%	26 31%	31 36%	17 20%
19. I have the authority I need in my work unit to do my job efficiently.	2 2%	10 12%	8 9%	39 46%	26 31%

Important points to note regarding these responses are presented below.

- 56% of the respondents agreed with the statement in question #15 that said “I am satisfied with my participation in Department decisions.” About 13% disagreed and 38% neither agreed nor disagreed.
- 76% of the respondents agreed with the statement in question #19 that said “I have the authority I need in my work unit to do my job efficiently.” About 14% disagreed and 9% neither agreed nor disagreed.

Most respondents were satisfied with their level of authority in their work unit, and with their participation in Department decision-making.

9. MOST RESPONDING EMPLOYEES WERE SATISFIED WITH MANAGEMENT WITHIN THEIR OWN DIVISION AND WITH THE OVERALL LEADERSHIP AND DIRECTION OF THE DEPARTMENT.

There were nine questions in the employee questionnaire regarding the leadership and management of the Public Works Department. These nine 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.	2 2%	3 4%	7 8%	40 47%	33 39%
4. My immediate supervisor is accessible when I need him / her.	0 0%	2 2%	7 8%	32 38%	44 52%
9. My immediate supervisor is open and honest with me.	0 0%	2 2%	6 7%	34 40%	43 51%
14. Executive management of the Department takes action on employee ideas to improve the operation of the Department.	4 5%	7 8%	32 38%	29 34%	13 15%

CITY OF SAN LUIS OBISPO, CALIFORNIA
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Question	Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree
16. The management of the Department takes a genuine interest in the employees of the Department.	4 5%	6 7%	16 19%	36 43%	22 26%
20. Management of the Department encourages reporting important information up-the-chain-of- command, even if it is bad news.	2 2%	5 6%	14 16%	40 47%	24 28%
25. Management of the Department provides a clear picture for me of where the Department is headed.	2 2%	10 12%	27 32%	36 42%	10 12%
26. I am kept well informed of what is happening in the Department.	0 0%	13 15%	21 25%	40 47%	11 13%
29. My work unit has clear, well-written policies and procedures to guide my day-to-day work.	1 1%	5 6%	18 21%	51 60%	10 12%

Important points to note regarding these responses are presented below.

- 86% of respondents agreed with the statement in question #1 that said “I receive recognition from my immediate supervisor when I do a good job.” Only 6% disagreed and 8% neither agreed nor disagreed.
- 89% of respondents agreed with the statement in question #4 that said “My immediate supervisor is accessible when I need him / her.” Only 2% of respondents disagreed and 8% neither agreed nor disagreed.
- 91% of respondents agreed with the statement in question #9 that said “My immediate supervisor is open and honest with me.” Only 2% of respondents disagreed and 7% neither agreed nor disagreed.
- 49% of respondents agreed with the statement in question #14 that said “Executive management of the Department takes action on employee ideas to improve the operation of the Department.” About 13% disagreed and 38% neither agreed nor disagreed.
- 69% of respondents agreed with the statement in question #16 that said “The management of the Department takes a genuine interest in the employees of the Department.” About 12% disagreed and 19% neither agreed nor disagreed.
- 75% of respondents agreed with the statement in question #20 that said “Management of the Department encourages reporting important information up-the-chain-of- command, even if it is bad news.” Only 8% disagreed and 16% neither agreed nor disagreed.
- 54% of respondents agreed with the statement in question #25 that said “Management of the Department provides a clear picture for me of where the

Department is headed.” About 14% disagreed and 32% neither agreed nor disagreed.

- 60% of respondents agreed with the statement in question #26 that said “I am kept well informed of what is happening in the Department.” About 15% disagreed and 25% neither agreed nor disagreed.
- 72% of respondents agreed with the statement in question #29 that said “My work unit has clear, well-written policies and procedures to guide my day-to-day work.” Only 7% disagreed and 21% neither agreed nor disagreed.

Most responding employees were satisfied with the management within their division and the supervision they receive from their immediate supervisor.

10. MOST RESPONDING EMPLOYEES WERE SATISFIED WITH THEIR DIVISION’S CUSTOMER SERVICE AND PERFORMANCE, BUT DID NOT BELIEVE THAT STAFFING LEVELS WERE ADEQUATE.

There were fifteen questions in the employee questionnaire regarding the management and performance of the Public Works Department. 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).	0 0%	5 6%	11 13%	33 39%	36 42%
6. My work unit has effective decision-making processes (no undue delays).	1 1%	7 8%	7 8%	44 52%	26 31%
8. In my work unit, the work is well organized (such as smooth work flow, etc.).	0 0%	6 7%	12 14%	49 58%	18 21%
10. I understand what is expected of me in my job in my work unit.	0 0%	1 1%	4 5%	42 49%	38 45%
12. I am encouraged to be innovative on my job in my work unit such as trying new ways of doing things.	1 1%	4 5%	11 13%	41 48%	28 33%
18. A high level of performance is expected of employees of the Department.	0 0%	2 2%	5 6%	35 41%	43 51%
24. We have enough employees in my work unit to handle the workload.	21 25%	35 41%	18 21%	9 11%	2 2%

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Question	Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree
27. I am encouraged to use my own initiative and judgment when carrying out my job in my work unit.	0 0%	3 4%	9 11%	44 52%	29 34%
28. I have a clear understanding of the mission and goals of the Department.	0 0%	4 5%	12 14%	47 55%	22 26%
30. Customer service is a top priority in my work unit.	0 0%	0 0%	8 9%	32 38%	45 53%
31. My work unit operates efficiently.	2 2%	3 4%	13 15%	42 49%	25 29%
32. My work unit has the clerical and secretarial support it needs to accomplish its goals and objectives efficiently and effectively.	4 5%	15 18%	15 18%	36 42%	15 18%
33. My work unit is frequently in a crisis mode due to workload that exceeds staff resources.	2 2%	23 27%	24 28%	27 32%	9 11%
34. My work unit provides a high level of service to the residents of San Luis Obispo.	0 0%	2 2%	5 6%	21 25%	57 67%
38. The employees in my work unit are dedicated to meeting customer expectations.	0 0%	0 0%	4 5%	38 45%	43 51%

Important points to note regarding these responses are presented below.

- 81% of the respondents agreed with the statement in question #3 that said “Employees in my work unit are willing to confront and solve problems (rather than sweep them under the rug).” Only 6% disagreed and 13% neither agreed nor disagreed.
- 82% of the respondents agreed with the statement in question #6 that said “My work unit has effective decision-making processes (no undue delays).” Only 9% disagreed and 8% neither agreed nor disagreed.
- 79% of the respondents agreed with the statement in question #8 that said “In my work unit, the work is well organized (such as smooth work flow, etc.).” Only 7% disagreed and 14% neither agreed nor disagreed.
- 94% of the respondents agreed with the statement in question #10 that said “I understand what is expected of me in my job in my work unit.” Only 1% disagreed and 5% neither agreed nor disagreed.
- 81% of the respondents agreed with the statement in question #12 that said “I am encouraged to be innovative on my job in my work unit such as trying new ways of doing things.” Only 6% disagreed and 13% neither agreed nor disagreed.

- 92% of the respondents agreed with the statement in question #18 that said “A high level of performance is expected of employees of the Department.” Only 2% disagreed and 6% neither agreed nor disagreed.
- 66% of respondents disagreed with the statement in question #24 that said “We have enough employees in my work unit to handle the workload.” Only 13% agreed and 21% neither agreed nor disagreed.
- 86% of respondents agreed with the statement in question #27 that said “I am encouraged to use my own initiative and judgment when carrying out my job in my work unit.” Only 4% disagreed and 11% neither agreed nor disagreed.
- 81% of respondents agreed with the statement in question #28 that said “I have a clear understanding of the mission and goals of the Department.” Only 5% disagreed and 14% neither agreed nor disagreed.
- 91% of respondents agreed with the statement in question #30 that said “Customer service is a top priority in my work unit.” The remaining 9% neither agreed nor disagreed.
- 79% of respondents agreed with the statement in question #31 that said “My work unit operates efficiently.” Only 6% disagreed and 15% neither agreed nor disagreed.
- 60% of respondents agreed with the statement in question #32 that said “My work unit has the clerical and secretarial support it needs to accomplish its goals and objectives efficiently and effectively.” About 22% disagreed and 18% neither agreed nor disagreed.
- 42% of respondents agreed with the statement in question #33 that said “My work unit is frequently in a crisis mode due to workload that exceeds staff resources.” 29% disagreed and 28% neither agreed nor disagreed.
- 92% of respondents agreed with the statement in question #34 that said “My work unit provides a high level of service to the residents of San Luis Obispo.” Only 2% disagreed and 6% neither agreed nor disagreed.
- 95% of respondents agreed with the statement in question #38 that said “The employees in my work unit are dedicated to meeting customer expectations.” The remaining 5% neither agreed nor disagreed.

Overall, responding employees were satisfied with the performance, problem solving and service provided to residents by their division. However, many

respondents expressed concerns regarding the level of staffing in relationship to their workload and overall management of workflow.

11. MOST RESPONDING EMPLOYEES INDICATED THAT THE CITY IS NOT EFFECTIVELY MAINTAINING ASSETS ENTRUSTED TO THE DEPARTMENT.

There were five questions in the employee questionnaire regarding the Public Works Department's maintenance and management of infrastructure assets. 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
41. The Department has sufficient staff resources to properly maintain existing infrastructure assets.	11 13%	30 36%	30 36%	11 13%	2 2%
42. The City has effectively addressed increased asset maintenance requirements within our Department's budget.	9 11%	25 30%	35 42%	13 16%	1 1%
43. I have seen an overall deterioration in our infrastructure assets over the course of my career.	8 10%	14 17%	40 48%	16 19%	6 7%
44. The City is effectively planning for the future and will be able to properly maintain infrastructure assets over time long term.	5 6%	14 16%	45 53%	14 16%	7 8%
45. The Department is positioned well to handle increased infrastructure assets and increased regulations without significant service level impact.	11 13%	32 38%	27 32%	13 15%	2 2%

Important points to note regarding these responses are presented below.

- 49% of the respondents disagreed with the statement in question #41 that said "The Department has sufficient staff resources to properly maintain existing infrastructure assets." 15% agreed and 36% neither agreed nor disagreed.
- 41% of the respondents disagreed with the statement in question #42 that said "The City has effectively addressed increased asset maintenance requirements within our Department's budget." About 17% agreed and 42% neither agreed nor disagreed.

- 48% of respondents neither agreed nor disagreed with the statement in question #43 that said “I have seen an overall deterioration in our infrastructure assets over the course of my career.” About 26% agreed and 26% disagreed.
- 53% of respondents neither agreed nor disagreed with the statement in question #44 that said “The City is effectively planning for the future and will be able to properly maintain infrastructure assets over time long term.” 25% agreed and 22% disagreed.
- 51% of respondents disagreed with the statement in question #45 that said “The Department is positioned well to handle increased infrastructure assets and increased regulations without significant service level impact.” 18% agreed and 32% neither agreed nor disagreed.

Overall, responding employees did not believe that the Department has sufficient staff resources to maintain existing infrastructure assets, or that the City has addressed increased asset maintenance requirements within the Department’s budget. Employees had mixed feelings regarding the overall deterioration of infrastructure assets and the City’s ability to effectively plan for the future in regards to properly maintaining infrastructure assets for the long term. Most importantly, employees do not feel that the Department is positioned well to handle increased infrastructure assets and increased regulations without significant service level impacts.