Executive Summary
City of Los Angeles Wastewater Program
Best Practices Study
Phase II Report

Background

On May 10, 1999, the City of Los Angeles contracted with Black & Veatch Corporation to perform a Best Practices Study of its wastewater program. The study was to be a forward-looking, practice-based evaluation with the effort equally divided among core functions, support functions and capital programs, and was to consist of three phases. The Phase I report was submitted on September 10, 1999. This is the Phase II report.

Scope of the Study

The scope of the study covered nearly every organizational entity involved in the provision of wastewater services. Areas that are completely outside the control of the Program management were excluded. The study involved site visits, interviews with employees, and reviews of operating records and related documents. The study also included an extensive communication program consisting of "open mike" sessions, an intranet web site, a telephone "hot line", and interviews with stakeholders.

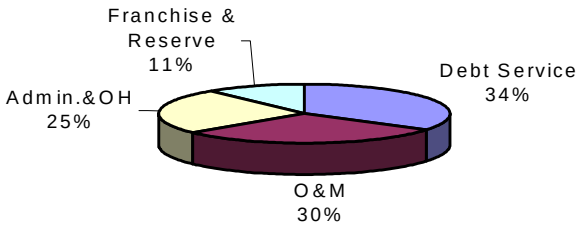
Contents of This Report

This report is primarily a Best Practices "relative health" report comparing how well the various entities contributing to the wastewater program operate relative to a set of Best Practices. The Phase III report which will follow this Phase II document will identify the costs and benefits of implementing best practices throughout the wastewater program.

Information Important to Understanding This Report

To place the Best Practices Report in the proper perspective, the reader needs to understand a number of facts and concepts, which are briefly described below:

Which Costs Are Controllable? The rate dollar for FY 1999-2000 is allocated as follows:



Only about half of the current rate dollar is under the near term control of the Program management.

Which Conditions Are Unique to Los Angeles? There are a number of conditions unique to Los Angeles that place limitations on the extent to which the wastewater program can implement best practices or perform like a best practice organization. Among these conditions are the following:

- Regulatory climate – compared with other wastewater agencies, Los Angeles has higher strength influent and tighter effluent discharge limits. Local regulators and the environmental community place more importance on additional treatment than on cost-benefit considerations.
- Labor environment – although Los Angeles enjoys excellent cooperation between labor and management, some changes will be required for Los Angeles to achieve best practice status. High performance wastewater organizations rely on workforce flexibility and reduced labor classifications to achieve efficiency. California's high cost of living makes it difficult for the Wastewater Program to compare favorably to out of state agencies when comparing salaries.
- Provision of support services – the Program receives many support services provided by other City agencies. These agencies are organized to satisfy governmental standards of service delivery, which are not always the same as standards required of competitive "businesslike" operations of government.
- Mandated staffing levels – The Hyperion Treatment Plant is operating under a Consent Decree that requires the plant to maintain minimum staffing levels based on 1986 operating conditions.

What Constitutes Best Practice? The concept of "best practices" originates in the private sector where it denotes the practices utilized by companies that are dominant in their market, are most profitable, and/or command high customer satisfaction and loyalty. There is no direct analog to these criteria in the public sector. As a result, we have drawn our best practices from a variety of sources:

- Practices utilized by contract operators.
- Practices identified as best practices in Water Environment Research Foundation studies, the Multi-Agency Benchmarking Study, and others.
- Private sector practices.

The Relationship Between Practices and Benchmarking There is a link between practices (methods, operating procedures, and the like) and performance (results). Although this study was intended to focus on practices, judicious analysis of metrics can identify areas where practices could be improved. This study makes selective use of benchmarking to augment the best practice analysis.

Overall Assessment of the Los Angeles Wastewater Program

The City's wastewater operations have improved during the past three years, moving the system into the top half of its peer group. This was accomplished during a period when most other systems in this group were also improving their operations. However, since the system has only partially implemented best practices throughout its organization, it is capable of continued improvement relative to its peers in the future. The two following comparisons demonstrate Los Angeles' current position:

- Los Angeles was compared with the 19 other agencies serving populations of 1,000,000 or more. The comparison was made using a composite rating that included operating cost, staffing levels, and the average bill. From 1995 to 1998, LA went from 15th to 9th during a period when most of its large agency peers were also improving.
- When compared to other wastewater agencies in the Multi-Agency Benchmarking Study (an important comparison because all agencies utilize comparable costing systems), Los Angeles placed in the middle of the group even though it treats the highest strength influent and has the most stringent discharge standards.

High performance elements of the Wastewater Program include:

- Wastewater program management for the strategic planning process, a successful labor-management program, and the use of metrics and benchmarking.
- Wastewater collection for the high level of planned (preventive and predictive) maintenance, the development of an asset condition program, and generally good operating results.
- A Regulatory Group with excellent tracking of regulatory activities which enables the Program Management to be proactive with respect to future regulations.

Some Divisions in the Wastewater Program are in a state of transition and generally moving towards implementing best practices:

- Some of the treatment plants have implemented best practices and the remainder are either investigating best practices or planning to implement them.
- Industrial waste management has improved during the past three years but needs to implement planned automation to achieve best practice status.
- Needed improvements are planned for both Environmental Monitoring and Information Control Systems.

The organizations carrying out the Capital Delivery Program have implemented some of the following best practices in an effort to achieve best practices status; equipment uniformity, shortening the capital timeline, and improving the integration of operations into the process. There are opportunities for improvement in the areas of capital improvement program planning and management.

Support services were compared with other wastewater systems and were found to be more labor intensive and costly on a unit basis. A number of areas require improvement:

- The existing procurement system needs improvement in a number of areas. The planned new procurement system, scheduled to be implemented in two years, should provide some of these improvements.
- The current human resources services are provided by three different City agencies. Total cost associated with these services is high relative to other wastewater systems and can be improved in the areas of training readiness and accountability.
- The accounting and financial management are also high in cost relative to other wastewater agencies and are also served by multiple City agencies. Areas in need of improvement include capital project tracking, payroll and timekeeping.

The following tables summarize the relative health of selected elements of the wastewater program. The relative health score is indicated by + for best or near best practice, ~~o~~ for average practice, and x for areas in need of improvement.

Core Services - Management

Best Practice	Explanation of Best Practice	Relative Health
Strategic Planning	Develop and follow a plan, which includes vision, mission, and action plans.	+
Performance Measurements and Benchmarking	Measuring performance, comparisons to others, improvement over time.	+
Organization	Efficient management to promote accountability and to minimize management layers and overlap	~~o~~
Labor-Management Cooperation	Working cooperatively with labor to improve performance.	+
Communication	Fast, effective communication, both vertically and laterally.	~~o~~

Core Services - Treatment

Best Practice	Explanation of Best Practice	Relative Health
Total Productive Operations (TPO)	TPO is the effective integration of operations and maintenance functions, where operators are familiar with maintenance and maintenance staff is familiar with operations.	~~o~~ Hyperion ~~o~~ LAG & DCT ~~o~~ TITP

Best Practice	Explanation of Best Practice	Relative Health
Program Driven Maintenance	An effective maintenance program consists of only 20-25% reactive maintenance (percent of reactive work orders vs. total work orders).	ɵ Hyperion + LAG & DCT ɵ TITP
Optimally Attended Operations	By utilizing control and monitoring technologies, an organization can limit attended operations and reduce off-shift staffing.	x Hyperion + LAG & DCT x TITP
Work Force Flexibility	A flexible work force can reduce downtime caused by employees of different trades waiting for one another.	x Hyperion ɵ LAG & DCT ɵ TITP
Technology as Strategy	Using technology as a strategy can yield substantial savings of labor, energy, and chemical supplies.	ɵ Hyperion + LAG & DCT + TITP
Organization as Strategy	An organization that eliminates rigid, bureaucratic structures that are resistant to change is better able to respond to customer needs and to adapt to changes.	ɵ Hyperion ɵ LAG & DCT ɵ TITP

Core Services - Wastewater Collection

Best Practice	Explanation of Best Practice	Relative Health
Program Driven Maintenance	An effective maintenance program performs only 20-25% reactive maintenance (percentage of reactive work orders vs. total work orders).	+
Asset Condition Management	An effective condition assessment program is vital to the operation, maintenance and CIP planning.	+
Work Force Flexibility	A flexible work force can reduce downtime caused by employees of different trades waiting for one another.	+
Technology as Strategy	Using technology as a strategy can yield substantial savings of labor, energy, and chemical supplies.	+
Organization as Strategy	An organization that eliminates rigid, bureaucratic structures resistant to change is better able to respond to customer needs and to adapt to changes.	+

Core Services - Environmental Monitoring Division (EMD)

Best Practice	Explanation of Best Practice	Relative Health
Automation	Laboratory automation can improve accuracy, precision and productivity.	+
Maximize Staff Skills	A laboratory staff that can be assigned from an area with less work to areas with peak workload provides greater flexibility.	+
Predictable, Stable Workload	A close working relationship with customers enables a laboratory to schedule work accordingly to maintain a predictable, stable workload. An established policy giving the laboratory the right of first refusal also helps to maintain a steady workload.	+
Minimize Complexity of Tests	Identifying nonessential tests and minimizing the complexity of these tests enables a laboratory to increase productivity and reduce cost.	~~o~~
Minimize Diversity of Tests	A laboratory's productivity is proportional to batch size. As such, optimizing batch size helps to increase the efficiency of a laboratory.	x
Centralize Operations	A centralized testing facility helps to reduce transportation and maintenance time, eliminate redundant staffing and instrumentation.	~~o~~
Communicate with Clients	Increased client communications enables a laboratory to prioritize testing needs, and allows clients to hear each other's perspectives and to recognize conflicting interests.	~~o~~

Core Services - Industrial Waste Management Division (IWMD)

Best Practice	Explanation of Best Practice	Relative Health
Reduction of Heavy Metals	A source control program that reduces the influent concentration of heavy metals helps to reduce the operating cost of wastewater plants.	+
Trust of Industries	Firm and consistent enforcement of permit requirements helps to reduce the number of violations over time.	+
Minimal Duplication of Effort	Inspection and testing costs can be reduced by minimizing the use of two-person teams and sharing the responsibility of compliance monitoring and surcharge sampling with industries.	+
Minimize non-core functions	A functionally integrated data management system combined with the optimal use of employee self-directed teamwork contributes to reducing non-core activities.	~~o~~
Automation	The use of un-staffed septage receiving stations and GIS maps of collection systems increase the efficiency of a source control program.	x
Regulatory Environment	Regulatory factors are beyond the control of a source control program, but they need to be considered when evaluating potential improvements in management practices.	~~o~~

Core Services - Capital Program Delivery

The capital program delivery organization is undergoing conversion from delivering a small number of high-cost projects to delivering numerous low-cost projects and changing from concentration on treatment plant improvements to collection system improvements. Three bureaus and numerous divisions are now involved in capital program delivery. The following is a very high-level best practice summary.

Best Practice	Explanation of Best Practice	Relative Health
Vision/Mission Statements for Service Delivery	Involved organizations have published vision and mission statements, which recognize responsibilities to internal customers and the public.	+

Best Practice	Explanation of Best Practice	Relative Health
Well Defined and Managed Oversight and Control Procedures	Well defined procedures and responsibilities. Clearly defined and functional quality assurance and control procedures. Field inspection staff instructed regarding technical functions and work procedures.	+
Community/Customer Relations	Organizations proactively publicize CIP projects and the benefit to the community.	+
Project Design Standardized, designed for lowest total cost involving operators where appropriate	Attempts are being made to improve standardization and operator input, and to minimize facility life cycle cost.	o
CIP Management Close coordination of multiple projects, flexible procurement and contracting, high (90%) budget to actual performance	Low budget to actual performance due to one-year encumbrance authorization, excessive political and public input slows process, limited deviations from standard contracting approach regardless of size of project.	x
CIP Planning Based on needs and cost benefits analysis, coordinated with other utilities and agencies with equipment procurement, installation and commissioning being staged for just in time delivery	LA CIP is reactive, driven by court directives. Project priorities frequently change throughout the CIP process. There appears to be little CIP coordination among utilities.	x

Organization Culture and Balanced Scorecard

A corporate culture survey was administered to both management and line personnel to determine their views on the Bureau's current operating environment and the desired direction and magnitude of change for the next three years. The surveys indicate that management and staff are in agreement as to the direction the Bureau should take to become a high performance utility. In addition, the survey identified a number of areas which management should address to facilitate continued improvement.

A balanced scorecard developed for wastewater organizations known as SCORE was performed for the wastewater program. Los Angeles' preliminary SCORE was 82 (92 is the highest SCORE achieved by any utility) placing Los Angeles well within the top

quarter of all utilities. SCORE, an acronym for **S**ervice level, **C**ompetitiveness, **O**ptimized system, **R**egional development, and **E**fficiency

Recommendations and Potential Cost Savings

In Phase III of Best Practices Study of the City of Los Angeles Wastewater Program, potential cost savings associated with implementing the recommendations made in this Phase II Report will be addressed. The potential cost savings will quantify both hard and soft dollar savings and payback calculations. The type of changes required to implement each of the recommendations, such as policy, legislative, organizational, or procedural will also be identified.