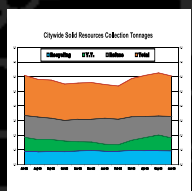
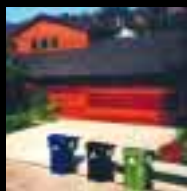
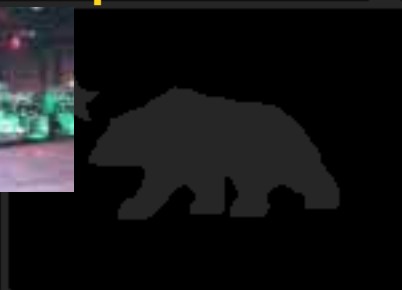


**City of Los Angeles
Department of Public Works
Bureau of Sanitation
Solid Resources Collection Division**



Best Practices Report 2000



FOUNDED

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**City of Los Angeles
Department of Public Works
Bureau of Sanitation
Solid Resources Collection Division**

**Best Practices
Report
2000**

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I. Executive Summary

Introduction

In 1994, the Bureau of Sanitation (“the Bureau”) implemented joint labor/management committees known as process action teams (PAT) to encourage management and labor to collaborate in finding new solutions to a variety of critical issues facing the Bureau. In 1998, the Director of the Bureau, Judith Wilson, charged the Benchmarking PAT with the responsibility for surveying the solid resources collection industry for innovative “best practices” that might help the Solid Resource Collection Division (SRCDD) improve its operating procedures and bottom line costs.

The Bureau staffed this PAT committee with district personnel, including a superintendent and a supervisor, the Union Representative for SEIU Local 347, and several truck operators. Drew Sones, Assistant Director of the Bureau, and a SRCDD senior engineer also served on the committee with all members having an equal voice and standing. Judith T. Pierce of the Seabrook Organization served as the PAT facilitator, conducted the research, and prepared the final report for committee review and approval.

The Committee circulated a comprehensive questionnaire, which focused on core industry functions and practices, to sixteen (16) municipal collection agencies around the country. Of the sixteen (16) agencies queried, fourteen (14) agencies actually participated in the survey and the Committee selected seven (7) agencies for on-site visits.

The Committee successfully completed its work in the fall of 2000. Not only did the Committee accomplish its objectives, but the PAT process afforded both labor and management an opportunity to work as partners to find ways to support the Bureau’s on-going initiatives for cost efficiencies while improving operations, customer service, and the work life of all its employees.

This report discusses the responses of the agencies that participated in the survey, highlights interviews with facility managers and the Committee’s observations during the site visits. In determining its recommendations of best practices for further review, the Committee evaluated the short and long-term operational affect, implementation cost, and the projected savings of each of the recommended initiatives.

Participating Agencies

New York, New York	Chicago, Illinois
Philadelphia, Pennsylvania	Houston, Texas
Phoenix, Arizona	San Diego, California
Torrance, California	San Antonio, Texas
Pasadena, California	Pomona, California
San Bernardino, California	Ontario, California
Charlotte, North Carolina	Long Beach, California

Sites Selected

Based upon information obtained from the surveys and input from industry members and literature, the Committee selected seven (7) solid waste facilities in the cities listed below for site visits:

- Seattle, Washington
- Kings County in Washington
(representing 37 cities in the metropolitan Seattle area)
- San Antonio, Texas
- Houston, Texas
- San Diego, California
- Ontario, California
- Long Beach, California

At each of the sites, the Committee interviewed managers and workers about existing policies and procedures and observed operations in the field and at transfer stations and landfills.

Recommendations

As more thoroughly explored in the report, the Committee recommends the following best practices, many of which are already under consideration or have been implemented at SRCD:

- Commence a study to determine the feasibility of implementing a full cost recovery fee system instead of relying upon the City of Los Angeles General Fund for its operating budget.
- Explore opportunities to collaborate with other public organizations to expand the Bureau's operational and financial options.
- Continue to team with its employees through labor/management initiatives to achieve and maintain the most cost effective customer service.
- Seek appropriate legislation through the municipal code for a Solid Waste and Litter Control Ordinance granting enforcement powers to the Bureau of Sanitation, Solid Resources Collection Division.
- Continue to work with General Services' management to improve daily fleet maintenance at each of the district yards.
- Open negotiations with the General Manager of General Services or his designee to establish a permanent mobile road truck for each district.
- Authorize the appropriate PAT committee to review current pre-trip inspection protocols in Los Angeles and at other properties.
- Explore the financial feasibility of acquiring other transfer stations for districts which have a substantial travel time to the landfills.
- Investigate whether it is operationally feasible to increase container size to 90-gallons for green waste collection.
- Expand community outreach to include the following services:
 - Equip a mobile trailer with educational materials about the City's recycling program for school children.
 - Provide community circulars or newspapers to advise the community of the Bureau's various solid resources programs.
 - Develop a drive-thru recycling center to serve as a community disposal site for used goods and hazardous waste and an educational facility for the community.
 - Introduce bulky item drop-off at all districts to reduce illegal dumping.
 - Increase community contact by instituting a regular customer survey for all non-collection service contacts.
 - Introduce a free mulching program for Los Angeles residents with classes for the public on composting.
 - Improve the operation of the 800-telephone complaint system to ensure timely and professional contact with the public and seamless service.
- Highlight the PAT process at public conferences and industry events.
- Implement more activities and programs for employees, such as breakfasts, picnics and family oriented events, to which division and executive management are invited.
- Explore the possibility of appointing a full-time labor relations ombudsperson to liaison between the Union and the Bureau of Management-Employee Services, Division management and Executive staff.
- Investigate the possibility of developing a pay-for-performance program that would provide employees with a one-time non-recurring cash bonus award for meeting specific measurable goals and objectives, which generate savings for the division or other safety initiatives.
- Investigate the feasibility of implementing programs to provide monetary and non-monetary incentives to employees for safety, absenteeism, and work performance.
- Evaluate the possibility of implementing a 4/10-work schedule and other alternative work schedules at appropriate districts.



II. Scope of the Study

Project Objectives

The Benchmarking/Best Practice Committee began its work in August 1998. Judith Wilson, Director of the Bureau of Sanitation, asked the Committee to identify and review “best practices” within the public and private sectors of the solid waste industry and to recommend appropriate practices for further study by the Bureau. The Committee’s primary objective was to identify best practices and procedures within the collection industry that might help SRCD reduce its operating costs and improve performance. During the course of this study, the Committee continually shared information with Bureau and division management about effective practices and procedures observed at the other agencies.

Major Accomplishments

The PAT benchmarking committee accomplished its major objectives:

- It identified current “best practices”, procedures, and programs used at diverse organizations and documented available trends within the industry.
- The Committee also benchmarked SRCD performance in the solid waste industry by comparing existing operating costs, program initiatives, and service options.
- The PAT committee structure provided a forum for management and labor to work together to solve common problems. Both worked together to provide vital information about the feasibility of selected practices within the Los Angeles operating environment. Overall, this effort was very positive in providing labor and management with the opportunity to collaboratively work on a winning project.

Committee Members

The following employees, staff and consultant have regularly attended the PAT meetings over the last two years. Carl Haase, staff engineer, also accompanied the Committee on a site visit to Seattle, Washington, to review city, county, and privately held transfer-facilities.

- Dirk Clark, Supervisor, West Valley
- Isaiah L. Lucas, Truck Operator, West LA
- Richard Myles, Superintendent, West Valley
- Genaro R. Perez, Truck Operator, North Central
- Marisela Reyes, Administration
- Drew Sones, Assistant Director, SRCD
- Jesse Taylor, Union Representative, SEIU Local 347
- Enrique C. Zaldivar, Senior Engineer, SRCD

Judith T. Pierce, President of the Seabrook Organization Inc., facilitated the committee, conducted the research at the participating sites, and prepared the final report.

Method of Operation

Since its inception, the Committee met approximately fifteen times. The scope of the Committee’s work included:

- Developing a strategic plan for the Committee’s operation.
- Identifying the major study areas, including core-operating functions.
- Developing a comprehensive questionnaire designed to obtain information about core functions and practices.
- Identifying the initial survey participants.
- Selecting and visiting seven municipal agencies and a number of related private organizations supporting the agencies.
- Reviewing industry literature.
- Interviewing survey participants.
- Analyzing survey results and observations.
- Reviewing the final report and recommending next steps.

Tasks Completed

To accomplish its work, the Committee developed and circulated a comprehensive questionnaire to various organizations around the country. On the Committee's behalf, the consultant made follow-up telephone calls to respondents to clarify issues, when appropriate. The Committee selected seven agencies for site visits to examine first hand, special techniques and innovations at those facilities. In addition, the Committee reviewed existing articles and summaries in relevant industry journals and trade magazines regarding innovative strategies used throughout the industry and discussed the information at the meetings.

Major Study Categories

Based upon the consultant's recommendations and an analysis of industry literature, the Committee selected the following study areas on which to focus its research and review:

1. Funding sources for collection and disposal services, including the advantages and disadvantages of using general or enterprise funds;
2. Organizational structure, including agency organization and inter-agency relationships;
3. Operating costs per household for services, if available;
4. Partnerships with other public and private organizations;
5. Short and long term disposal options and plans:
 - Landfill and transfer station operation and ownership;
 - Advantages and disadvantages of direct haul;
 - Rail haul; and
 - Recycling.
6. Special recycling programs, such as single-stream collection and green waste composting;
7. Fleet management:
 - External or In-house fleet maintenance;
 - Fleet Automation;
 - Vehicle replacement cycles;
 - Vehicle types;
 - Pre-trip vehicle inspection times and procedures;
 - Fleet spare ratio;
 - Vehicle breakdowns and programs to reduce the incidence of breakdowns; and
 - On-route maintenance practices.
8. Operating practices and procedures:
 - "Pay as you throw" or weight-based fee systems;
 - Morning dispatch procedures;
 - Route assignment procedures;
 - Work schedules, i.e. alternating start times and 4/10 schedules;
 - Practices & programs to manage undertime;
 - Use of extra list and inter-yard transfers;
 - Enforcement strategies;
 - Manual and electronic routing techniques; and
 - Supervisor/truck operator ratio.
9. Labor/Management Initiatives:
 - Work performance standards;
 - Employee incentive programs; and
 - Joint labor/management programs.
10. Programs to reduce overtime and workers compensations costs.
11. Customer service initiatives.
12. Innovative Technology Strategies.

Participating Agencies

Committee members developed and circulated to sixteen (16) municipal collection agencies a comprehensive questionnaire, which focused on core industry functions and practices. Fifteen agencies participated in the survey, including Los Angeles, as the host agency.

New York, New York	Chicago, Illinois
Philadelphia, Pennsylvania	Houston, Texas
Phoenix, Arizona	San Diego, California
Torrance, California	San Antonio, Texas
Pasadena, California	Pomona, California
San Bernardino, California	Ontario, California
Charlotte, North Carolina	Long Beach, California

The Committee analyzed the data received from these participants and selected sites to visit for more in-depth review. The Committee was particularly interested in practices that improved cost effectiveness, employee productivity, and customer service.

Selected Sites

The Committee made seven (7) site visits to the cities listed below:

1. Seattle, Washington
2. Kings County, Washington
(representing 37 cities in the surrounding Seattle metropolitan area)
3. San Antonio, Texas
4. Houston, Texas
5. San Diego, California
6. Ontario, California
7. Long Beach, California

[Note: The Committee did not originally choose Seattle as a survey participant because it outsources all collection functions. However, Seattle and Kings County have 12 transfer stations between them, of which two are owned by the private sector. Because Los Angeles Bureau of Sanitation will build a transfer station in the near future, the Committee added Seattle to gain insight on various alternatives in transfer station design and operation.]

Best Practices and Benchmarking: A Practical Definition

*Benchmarking is "...simply the systematic process of searching for best practices, innovative ideas, and highly effective operating procedures that lead to superior performance..."*¹.

The techniques used in this "benchmarking" study were somewhat different from those typically used when private sector companies compare their operating practices with the practices used by leading companies within their industry. In private industry, there are accepted standards by which companies within a given industry sector measure their performance. Top performers designate specific policies, practices, and procedures as "best practices" for that industry.

Since there is no formal model for "best practice" used within the solid waste collection industry, the Committee determined that a practice or procedure was a "best practice" based upon the following criteria:

- Agency management stated that there was definable benefit derived from the practice and the practice had improved the operating performance and financial health of the reporting agency i.e. reported cost savings or increased time on the route.
- General industry standards, as articulated in various studies and literature, have identified the practice as a "best practice." For example, where operationally appropriate, the Solid Waste Association of North America (SWANA) has certified vehicle automation as a best practice for the industry.

¹ Bogan, C. E.; English, M. J., *Benchmarking for Best Practices*. McGraw-Hill, Inc., 1994

**Best Practices
and Benchmarking:
A Practical
Definition**

(cont'd)

- Industry acceptance of the practice and/or procedure as a “best practice.”
- The collective wisdom of all members of the Committee.

There are three primary types of benchmarking:

- *Process benchmarking* focuses on discrete work processes and operating systems and seeks to identify the most effective operating practices from many companies that perform those similar work functions.
- *Performance benchmarking* enables managers to assess their competitive positions through cost, product, and service comparisons. Performance benchmarking can focus on cost, service features, or product quality.
- *Strategic benchmarking* typically crosses industry lines and seeks to identify winning strategies that have enabled high performing organizations to become leaders within their industries. In strategic benchmarking, organizations do not select practices or processes to examine, but rather conduct a broad-based inquiry to identify winning strategies.

The Committee focused on process and performance benchmarking. Unfortunately, the Committee was unable to gather information from other private pick-up/delivery type services such as the United Parcel Service (UPS) and Federal Express, which declined to participate in the benchmarking study because they considered the information requested “proprietary.” Thus, the Committee did not perform in-depth strategic benchmarking across industry lines to identify “winning strategies.”

**Benefits of
Benchmarking**

The advantages of benchmarking include the following:

- It helps an agency set and refine its strategy and goals as it moves through its growth and development.
- Current research documents that re-engineering operating practices without benchmarking is likely to produce a flat 5 to 10 percent in improvements, not the spectacular 50 to 75 percent performance improvements often seen with radical redesign.²
- While not every benchmarking effort will yield system breakthroughs, a good “best practice” study will usually provide some reliable information. In addition, the process of analyzing the data will generate incremental changes and improvements as members of the Committee transmit new information back to the workplace.
- Benchmarking sets the tone for continuous improvement of work processes and business systems. It encourages staff to engage in problem solving to resolve obstacles to major improvements.

² Bogan and English, supra pp. 10



III. Discussion: Survey Results and Site Visits

Introduction

This section of the report discusses the results of the survey and on-site observations. The Committee begins the discussion with a general overview of recent accomplishments within the Los Angeles Bureau of Sanitation, Solid Resources Collection Division. Over the last three years, SRCD has undergone major changes in its operation, which resulted in improved operations and financial performance. Until three years ago, the Division experienced:

- Overtime overruns;
- Reduced “on route time” due to delays in morning dispatch and vehicle breakdowns;
- Limited technology to support operations;
- Labor and management tension;
- Low employee morale; and
- A significant number of drivers who did not meet the previously agreed upon work standard for household refuse.

The most significant improvements in Division operation are as follows:

- Management reduced end of shift overtime by 36 percent since 1997.
- “On route time” increased to an 8-hour day.
- The implementation of technology programs to improve operations such as:
 - AutoCoach® will provide management with detailed information about work productivity including data collected by hour and route;
 - RouteSmart®, a GIS mapping program to improve routing;
 - Arc Logistics®, a mapping software program to schedule bulky item pick-ups;
 - An automated timekeeping and dispatching system to facilitate the control of absenteeism and better schedule vacations; and
 - Two-way radio systems.

While there is still work to be done, the Committee acknowledges the extraordinary accomplishments of both labor and management in the Agency’s effort to improve its operations and bottom line.

Los Angeles: Major Innovative Practices

This best practice study documents that Los Angeles remains an industry leader, having adopted a number of innovative practices:

1. *Use of Automated Trucks:* Los Angeles was one of the first agencies to use fully automated trucks in a significant part of its operation, which allowed it to significantly reduce its labor requirements and reduce operating cost.
2. *Segregate Commodities:* Los Angeles was one of the first agencies to segregate commodities and introduce single stream collection for recycled materials to improve service to customers.
3. *Green Waste Recycling:* The Van Norman and the Harbor districts are implementing programs to recycle green waste, including distributing mulch to the public.
4. *Transfer Stations:* Los Angeles, like other municipalities, is struggling with short and long term disposal issues. The City currently uses two transfer facilities and plans to add a new station. There is a growing interest industry-wide in operating transfer stations as a part of the collection process to manage operating costs and improve service. The City of Seattle uses many different transfer stations and hauls its waste by rail to larger landfills in east Oregon that gives the Agency financial flexibility in negotiating its tipping fees. Seattle was the only agency in our survey, using rail to haul refuse.
5. *Truck-to-Truck Transfers:* In addition, SRCD has begun to use truck-to-truck transfers to expand its disposal options and to reduce operating costs. The Committee found truck-to-truck transfers in Seattle only.

6. *Technology*: Los Angeles is implementing several new technology software programs to enhance management capability:

- AutoCoach® is an “on board” software program which provides detailed vehicle and driver productivity data throughout the collection process. No other agency indicated that it had acquired or intended to acquire AutoCoach® to help manage its operation. However, several agencies reported that they are exploring other management software to capture and use data to improve daily operations.
- Electronic Mapping Software: Los Angeles is implementing Arc Logistics® for bulky item pick-ups in the districts at this time with full implementation expected this year. A number of agencies report that they are using and/or evaluating RouteSmart®, including SRCD.
 - *SRCD* continues to develop its GIS capability to enhance its management and supervisory routing capability.
 - *San Diego and Charlotte* report good results in using GIS systems and RouteSmart® to improve mapping capability. In addition, San Diego reports that it is considering implementing a GPS system, which will identify the location of its fleet at all times.
 - *New York* reports that it is exploring RouteSmart® for use in some of the outer boroughs.
 - *Philadelphia* reported that it is using RouteSmart® but encountered major problems in implementing this system because of the operating environment.
 - *Houston* has abandoned efforts to acquire RouteSmart® and instead is buying Arc Logistics®.

7. *Labor/Management Initiatives*: While Houston and San Antonio evidenced good relationships with resident unions, no agency has developed a joint labor/management process similar to the Process Action Team concept in Los Angeles.

Cost Data

A detailed analysis of the funding structure of each participating agency is beyond the scope of this study. The initial survey did not capture financial data from the participating agencies because the Committee recognized that regional economic variations would not permit credible comparisons. Disposal costs, which vary regionally, significantly influence total costs. Some agency resources come primarily from their City’s general fund, while others rely only on enterprise funds. A diversity of public and private grants, which many cities rely on to manage specialized programs involving environmental issues, further complicates the financial landscape. Most importantly, there is no template, guaranteeing that the financial information from the agencies is collected and/or computed in the same manner to permit credible comparisons. Finally, some agencies submitted cost data based upon 1998 data, while in other cases, the agencies submitted information that is more current.

Nonetheless, the Committee has included some gross financial data to provide the reader with a general overview, set the background for the discussion of noteworthy practices and procedures and support its recommendations for selected best practices. However, the Committee was unable to verify the accuracy of the information submitted by the participating agencies.³ (See Figure One on next page).

In the future, the Bureau will work with SWANA and other industry agencies to develop a benchmarking template, which will provide accurate cost data to allow for competitive comparisons between agencies.

³ Of all the surveys the Committee examined, the Houston 1998 survey was the most comprehensive. However, there were variances in the information provided in that survey and the responses provided in the survey that the Committee circulated.

FIGURE ONE – AGENCIES RESPONDING TO THE SURVEY FY 1999-2000

City	Households Served	Annual Tons ⁴	Monthly HH Cost	Tip Fees per Ton ⁵	General/Enterprise	Cost to Residents
Los Angeles	721,476	1,522,536	\$9.50	\$17.86 @ Transfer station; \$18.73 landfill	General	Monthly equipment charge of \$6 for single family and \$4 for multi-family
Chicago	750,000	1,100,000	N/A	\$53/na ⁶	General	None
Phoenix ⁷	317,152	627,695 refuse & 85,615 recycled	\$12.40	\$21.25 refuse/\$18.25 green/\$34 recycled	Enterprise	\$16.50 for all 3 services for City collections
Houston ⁸	388,711	585,520	\$13.67	Total Cost \$18.31 ⁹ all commodities	General	None
San Diego	298,000	326,776	\$7.50	\$31	General ¹⁰	None
Charlotte	103,000	178,436	\$6.00	\$31.50	General	None ¹¹
Pasadena	25,500	55,955	N/A	\$27 solid waste & \$12.65 green waste	Enterprise ¹²	100 gallon \$23.73, 60 gallon \$15.15 & single \$9.14
Pomona	26,125	34,557	N/A	\$18.05 refuse, \$11 clean green	Enterprise	\$15.44
San Bernardino	32,917	78,471	\$17.60	\$28.50 refuse, \$21.40 green, \$11.66 recycled materials	Enterprise	Monthly cost \$17.60. Additionally containers @ \$7.15 (R), \$8.75 (G), \$10 (refuse)
NYC	3 million	4,109,000	\$25.58	Total \$50 million ¹³ \$187 refuse, \$262 recycled materials	General	None
Ontario	47,508	66,926	N/A	\$33 refuse	Enterprise	\$16.55 per month for HH refuse
Torrance	31,500	52,000	\$10.31	\$30	Enterprise	\$13.50 per month
Philadelphia	566,000	780,000	N/A	\$45	General	None
San Antonio	314,389	474,297	\$10.50	\$17.02 refuse	Enterprise	\$9.20 refuse & \$1.30 environmental
Seattle (City)	148,699	477,433	N/A	\$45.46 ¹⁴	Enterprise	Ranges from \$10.05 for 12 gal can to \$16.10 for 16 gal can
Kings County Washington ¹⁵	Est. 438,996	1.5 million ¹⁶	N/A	Cost to use landfill is \$82.50 ¹⁷	Enterprise	Average curbside rate is \$13.43 covering 37 cities in county system
Long Beach	117,000 7000 Com	200,000 ¹⁸ residential	\$20	\$31 for refuse, and green waste@SERRF	Enterprise	Single family \$16.44, duplex \$15.21, apt \$13.98 per unit, & commercial \$58.14 per bin, varies with discount

⁴ Household trash (HH), green waste, and recycled materials if reported by the agency only. Some Cities do not segregate waste streams so it is difficult to separate tonnage by commodity.

⁵ This column includes landfill, transfer station, and waste to energy (WTE) tipping fees, whichever is applicable.

⁶ Chicago owns a construction and demolition landfill.

⁷ Phoenix owns its transfer station and landfill. Tip fees represent fees charged to commercial contractors and agency cost.

⁸ Houston Solid Resources Division provided current statistics for all categories.

⁹ Cost for trash at \$19.84 per ton and heavy trash at \$16.58. Current transfer station fee is \$20.75, but did not use in 2000.

¹⁰ Household trash budget is funded from the general fund, green waste and recycling from separate enterprise funds.

¹¹ City charges residents annual fee to offset landfill maintenance and operating costs @ \$44 for single family & \$27 for multi-family.

¹² Agency transfers approximately \$1.1 to the City's general fund annually.

¹³ Covers 3000 tons per day exported to transfer stations, landfills and incinerators, 9000 tons per day disposed at Fresh Kill, a municipal owned landfill.

¹⁴ Seattle Public Utilities pays Waste Management for rail haul and disposal. This does not include cost for transfer station management.

¹⁵ Kings County does not provide curbside collection services, but collects funds from private collectors using county transfer stations and landfill.

¹⁶ Tonnage includes solid waste and recycled materials.

¹⁷ If the private hauler does not use the county transfer station, the \$82.50 is discounted to \$59.50

¹⁸ Includes green waste and household trash, which is disposed at the same facility.



IV. Significant Issues and Program Highlights

The Committee evaluated a number of issues and programs over the last sixteen (16) months. This section explores these issues and programs in detail. The Committee selected its recommended best practices from this list of program initiatives.

Outsourced Services

Many agencies participating in the survey report that they have outsourced commercial refuse collection, collection at multiple dwellings and the collection and sale of recyclable materials. Of the agencies that participated in the survey, only two agencies, New York City and Ontario, reported that they did not use private contractors in any capacity. The City of Seattle and Kings County, Washington, rely on private contractors almost exclusively.

Houston recently completed a survey of large cities, which validated that more cities are outsourcing their residential and commercial waste streams. Of the 30 top cities in the United States, nineteen (19) have privatized some portion of their residential collection operation; five (5) of those nineteen (19) have totally privatized their operation.

Some cities have outsourced the collection and sale of recycled materials. For example, San Antonio has also contracted with Vista Fibers, one of the largest independent recyclers in Texas to process and market all recycled materials collected by the City and its contractors. Vista Fibers material recovery facility handles paper, plastics, steel cans, aluminum, and glass.

However, outsourcing services is not always the most cost-effective option. Solid waste agencies are making an effort to become more competitive. Some cities report that they have successfully competed against commercial providers to regain control of all services. For example, the City of Charlotte divides its service area into four quadrants; one quadrant is contracted out until July 2001. However, the agency indicates that at the end of the contract, the City will resume responsibility for this quadrant as it successfully competed against the privates, in a sealed bid process, for the right to service this area.

Other agencies are looking for opportunities to return collection to internal staff. While Long Beach has contracted its recycling service to Waste Management, Long Beach aggressively competes for commercial business and wants to expand into the restaurant compactor system as a way to increase revenue for the agency.

Long Term Disposal Plans

Direct Haul

Many municipalities are beginning to reconsider their disposal options given the political climate and economic reality of landfill operation and ownership. Of the agencies that responded, only three reported that they still owned landfills. Most have relinquished landfill ownership to the private sector. San Diego operates Miramar under a special agreement with the Navy. Kings County in Washington owns and operates Cedar Hills Landfill and serves as a regional disposal center. New York still owns a landfill but has recently announced closure plans.

Some of the agencies responded that they own or operate a transfer station. Other agencies report that they are considering purchasing transfer stations so that they will have the option of transferring refuse to other locations using trucks and/or rail, which may reduce their tip fee costs.

Long Haul by Rail

The City of Seattle transports all of its waste by rail to either the Columbia Ridge landfill in Arlington, Oregon, located 140 miles east of Portland, or the Roosevelt Regional landfill in Klickitat County, Washington, at a cost of \$45.46 per ton for rail transport and disposal. The City charges commercial carriers \$63.95 per ton for rail transport and

Long Term Disposal Plans (cont'd)

disposal under its contracts. Currently, the County uses its own landfill. However, when this landfill closes in 2012, the County reports that it will probably transport the refuse by rail to eastern Oregon or central Washington as well.

South East Resource Recovery Facility (SERRF)

SERRF, which began commercial operation in July, 1988, is a publicly owned solid waste management facility that uses mass burn technology to reduce the volume of solid waste by about 80% while recovering electrical energy. The largest of three state facilities of this type, SERRF is owned by a joint powers authority and is operated by Montenay Pacific Power Corp with 60 employees with a \$2 million annual operating budget. This facility processes approximately 1380 tons of solid waste daily from the Long Beach area. Long Beach residents generate 900 of the 1380 tons. Maximum capacity is 2240 tons per day by permit. In addition to the Long Beach Solid Resource Collection Division, the facility accepts solid waste from private haulers and the Harbor District of the LA Bureau of Sanitation.

The tipping fee for Long Beach is now \$31.00 per ton as of July 1, 2000. The plant operates on weekdays only. Management only turns the furnaces off for repair and maintenance. Plant management reports that co-mingled green waste sometimes causes slow burning during the rainy season as the solid waste becomes very wet.

Besides tipping fees, SERRF produces revenue in a number of other ways. First, the plant generates electricity as a by-product of the combustion of refuse to operate the facility. The remainder is sold to the local power company. With a gross electrical generating capacity of 36 megawatts, SERRF produces enough electricity to furnish 35,000 homes with electrical power. The ash from the burn process is treated and used at landfills as road base material. In addition, an average of 825 tons of metal are recycled monthly. Local law enforcement, which also uses the facility to dispose of narcotics, pays \$12,000 annually for the approximate 17,000 pounds of narcotics, destroyed at the facility each month.

SERRF is also a good example of how beneficial and successful partnerships can be, especially among public entities. In order to build SERRF, the City of Long Beach and Los Angeles County Sanitation District formed a Joint Powers Authority to finance and build this facility. Together they have identified revenue streams that have benefited the public economically and environmentally, which is the real objective of successful partnerships.

Landfill/Transfer Station Operation and Ownership

Municipal use of transfer stations dramatically affects tipping fee cost and thus, the bottomline costs for collection services. Agencies rely on transfer stations because they can generate savings in operating costs by increasing on-route time and thus reducing overtime. The survey indicates that there is a definite trend among solid resource agencies to use private landfills and transfer stations. To manage operating costs efficiently, an agency with great distances to travel to a landfill, reports that it is operationally and financially expedient to acquire its own transfer station.

A recent survey reports that 35% of cities and 70% of counties own a transfer station. Many agencies report that they are reviewing their operation to re-consider transfer station ownership.

Long Term Disposal Plans
(cont'd)

Metropolitan Seattle, Washington

The Committee visited Seattle, Washington to tour the twelve (12) transfer stations owned, operated, and used by the City of Seattle, Seattle Public Utility (SPU), and the Kings County (Kings County) Department of Natural Resources, Solid Waste Division. Both Seattle and Kings County contract out all collection functions to the private sector. The money used to support Kings County’s solid waste programs and services comes from the disposal fees collected at the transfer stations and Cedar Hills Regional Landfill. Seattle’s revenue stream comes principally from tip fees from private haulers and customer payments for the service.

Kings County handles the disposal of some 940,000 tons of household refuse and 620,000 tons of recycled materials for 37 cities within the County surrounding the City of Seattle. Residents using the collection service pay an average monthly rate of \$13.43 for one 32-gallon can and weekly curbside service for household refuse and recycling. Franchisees take collected household waste to one of the eight County owned and operated transfer stations for \$82.50 per ton which includes disposal at County owned and operated Cedar Hills landfill, which is located 6 miles southeast of Renton. A limited number of private haulers do not use the County transfer station, but only the landfill for a tip fee of \$59.50. Although most of the waste comes through the franchisees, self-haulers also contribute a sizable portion as well. Tip fees for self-haulers are the same, \$82.50 per ton.

The City of Seattle outsources its solid waste collection function as well. It uses four transfer stations to dispose of its solid waste. Seattle owns two transfer stations and Waste Management (Eastmont) and Allied Waste Industries (Rabanco) each owns one transfer station. Seattle transports all solid waste from its transfer stations by Union Pacific to landfills in Central Oregon. They pay a tip fee of \$45.46 for rail transport and landfill use. However, by contract with the City, commercial contractors pay a rate of \$63.95 to transport refuse to Oregon using Union Pacific railroad. Some portion of the Seattle Public Utilities revenue comes from self-haulers use of transfer stations. Recycling and disposal station self-haul rates per ton are as follows:

	Trucks	Cars (per trip cost) ¹⁹
Refuse:	\$ 96.25	\$ 13.35
Yard waste:	\$ 70.60	\$ 11.05
Wood waste:	\$ 49.40	\$ 11.05

Recycling Programs

The Committee’s evaluation indicates that all municipal agencies have increased their effort to improve recycling services in the last few years. However, San Diego and Houston have notable innovative recycling programs.

San Diego: San Diego has developed specialized recycling programs, starting with its “Green” building, which houses offices for 200 employees and an operations complex. The City of San Diego renovated an old 73,000 square foot commercial building, using state of the art environmental technology to reduce energy consumption and pollution while providing a more productive workplace for employees. The construction materials were largely recycled items; builders re-used as much of the existing building materials in the renovation as possible. The building uses substantially less energy and the air is noticeably cleaner inside the building.

Houston: Houston has established at the West Park Recycling Center a combined drive-in recycling and hazardous waste center for the convenience of the public. Staffed with one full-time employee, the facility is supported by Court ordered community service participants assigned to the center to assist the operation by removing material from

¹⁹ Effective December 31, 1999, vans and pickup trucks must pay the per ton rate.

Recycling Programs (cont'd)

residents' automobiles. Residents do not have to get out their cars. The highlight of the center is a "recycled" room, which houses a library of used books and other discarded interesting collectibles for sale. The room doubles as an educational conference room for residents and school children to learn more about the environmental benefits of recycling.

Automated Single-Stream Collection (Recycling)

California solid waste managers indicate that improved recycling is essential to meet the state's mandate requiring all California cities to reduce the amount of refuse destined for the landfill by 50% by 2000. Automating and allowing residents to co-mingle recycled materials encourage residents to recycle more and reduce operating costs. Yet, not all solid resource agencies, even in California, use automated vehicles, segregate commodities, or do single stream collection of recycled materials. Los Angeles has been a leader in using segregated waste streams and automated recycling vehicles. The City of Ontario, California, recently announced its new program for automated collection of co-mingled recycled materials and segregated green waste. Ontario provides residents with one blue container for all recycled materials and one green container for yard waste. Collections will take place on the same day.

While there is a growing trend to segregate refuse, green waste, and recycled materials, some agencies do not segregate these waste streams. For example, Long Beach reports that they do not separate green waste from regular refuse; both are disposed of at South East Resource Recovery Facility (SERRF). A private company handles recycled goods. Phoenix mixes green waste with household refuse, but separates out recyclable material. Philadelphia and San Antonio report that they separate recycled materials only. Seattle now segregates recycled material, yard waste, and refuse.

Although many agencies like the idea of automation, due to operational constraints, some agencies have reported that they will not totally automate their fleet. New York, for example, states that it will not use automated vehicles in most of its operation, but has implemented a small pilot program in the outer boroughs to determine the feasibility of using automated vehicles in certain operating environments.

Green Waste Compost Programs

Driven by diversion goals, municipalities throughout the country have implemented curbside and drop-off green waste collection programs in an effort to make significant strides to reduce dependency on landfill disposal and boost their recycling rates. Agencies report that selling products produced from green waste-mulch and compost, has been a challenge, but they continue to develop practical programs for the successful marketing of this material. Cities closest to farming communities tend to have the least difficulty in finding viable markets.

The Committee found several cities that had taken the initiative to develop green waste programs. The following is a summary of the programs that the Committee observed during its site visits:

- **San Antonio:** San Antonio has developed an environmentally friendly program at its Bitters Road brush-shredding site that processes 100,000 tons of brush annually. This city facility accepts clean brush and leaves from residents. The brush is shredded, then ground into wood chips, and distributed to the public as mulch, free of charge. Residents have access to the facility 7 days a week and are encouraged to bring their own containers and tools to pick up the mulch. This facility also provides mulch to the Leon Creek Wastewater Treatment plant for compost and at four city-owned parks.
- **Seattle:** Immediately adjacent to the Cedar Hills landfill, owned and operated by Kings County near Seattle, Washington, is a privately owned composting facility where yard waste is composted, bagged, and sold to the public. In addition, the City of Seattle

Recycling Programs (cont'd)

has an extensive “backyard-composting program” which involves educating the public on composting techniques. The City reports that 46% of its households compost their yard waste, one-third in bins supplied by the City. Forty-three percent report grasscycling (i.e., leave grass clippings on the lawn).

- **San Diego:** In conjunction with its “Green Corps” program, San Diego also has an expanding green waste-composting program, handling between 90-100 tons annually. At the Miramar Landfill, tub grinders reduce greenery and wood waste to mulch. The Agency distributes this compost to area residents. Currently, compost is free to residents, but management reports that at the end of the year, it will charge residents for more than 2 yards of compost. In addition, San Diego maintains a demonstration project adjacent to its green building for state of the art composting. Informed staff provides tours and information for the public on composting.
- **Long Beach:** Long Beach sends its green waste to the SERRF, but maintains a small composting facility to process street sweeping debris. Residents may drop off their green waste for \$10.00.
- **Ontario:** Ontario does not have a separate site for composting, but will provide residents with a free City composting bin and information on grasscycling.

Hazardous Waste Recycling Programs

Many agencies are exploring the development of hazardous waste programs to help curb illegal dumping. Three agencies have developed separate sites to drop off household hazardous waste and used oil.

- Houston residents drop off hazardous waste at the West Park Recycling Center. Hazardous waste includes used batteries, oil, anti-freeze, and paint.
- Ontario also has established a collection center for household hazardous waste.
- Detroit suburban residents have led the way in that state to establish free household waste drop-off stations.
- Seattle uses bins throughout the City.
- Kings County operates a wastemobile throughout its service area. Since 1989, the wastemobile serves 24 locations each year, staying two weeks at each location. It serves approximately 20,000 residents per year. It collects approximately 800 tons of hazardous waste per year. The County retains specialized companies to prepare the waste for reuse, recycling, or disposal.

Service Delivery

With the exception of New York, Phoenix and San Antonio, agency respondents collect refuse once per week. New York reports that it schedules pickups 2 to 3 times per week for refuse and once per week for recyclables. San Antonio operates manual service and provides its residents with twice (2) weekly service. San Antonio operates three operator trucks and reports that it actively resists reducing staff because of the potential impact on the community.

“Pay as you Throw Programs”

The Committee’s research revealed that a few cities have unsuccessfully tried to implement this type of program. In the mid-nineties, the City of Columbia, South Carolina Solid Waste Division served as a test site for a weight certification collection program (Municipal Solid Waste by the pound). Each truck in the pilot study was outfitted with an on-board scale and computer system. The trucks weighed each pick-up and forwarded the information to the computer for billing compilation. The objective of the program was to charge customers only for the garbage they generated. The agency indicated that an expected by-product of the program would be an increase in recycling participation, in recycling tonnage, and customer satisfaction. Some believed that the program could even generate customer pressure on manufacturers to reduce excess packaging in their products. However, at the conclusion of the pilot program, the Columbia City Council did not authorize the full implementation of the program.

Service Delivery (cont'd)

Fort Worth indicates that it is studying whether it should proceed with such a program given the political difficulties in getting the community to back such an initiative for the reasons discussed below.

Unfortunately, there is technical and political resistance to these types of programs. It is still unclear whether existing technology can provide accurate readings. Opponents argued that the program could increase illegal dumping to avoid the per pound cost. Others speculated that residents might place their garbage in their neighbor's containers to avoid costs. The difficulties in apportioning cost in an apartment complex could also lead to inequities. Finally, the program raised a number of problems concerning the disproportionate impact on low-income families with large families already strapped for cash.

The City of Seattle has adopted a modified volume-based "pay as you throw" program, which involves variable rates for cans based on volume. This program gives consumers a choice and encourages residents with cost savings if they recycle by using smaller containers, and do not use extra bags.

Size of containers and related cost are listed below:

Size	Cost
Micro (12 gal)	\$ 10.05
Mini (19 gal)	\$ 12.35
One can (32 gal)	\$ 16.10
Two cans (64 gal)	\$ 32.15
Each additional can	\$ 16.10
Dumpster	\$ 82.50 (plus \$.60 per unit)

In addition, Seattle charges residents five dollars for each extra garbage bag left at the curbside outside of the can and \$4.25 for four bags of yard waste per collection. Extra yard bags are \$1.50 per bag.

Customer Education/Literature

The Committee looked for creative and innovative strategies that agencies use to inform the public about significant waste management issues. Of particular interest are the following:

- **Houston:** The drive-through recycling station at the West Park Recycling Center encourages residents to use the facility. Management reports that the center contributes to reducing illegal dumping.
- **Long Beach:** Long Beach has purchased and equipped a traveling mobile trailer, "The Traveling Recycling Education Center", which serves as a mobile classroom to instruct elementary school children up to the fourth grade level on recycling issues. The truck visits area schools 2 to 3 times per month.
- **Ontario:** Ontario publishes a four-page community newspaper entitled "City of Ontario Recycling News", which discusses issues and concerns of the community, informs residents of impending changes in service, and provides much needed contact telephone numbers. Other agencies, including Houston, San Antonio, and Long Beach have customer literature to highlight their programs.
- **Web Sites:** A number of agencies have instructive web sites that provide a wealth of information for customers on service options, rates, programs and other valuable statistics. Seattle Public Utilities has a comprehensive and informative web site that provides not only critical information for the consumer about the agency, its budget and strategic plans, but in-depth instruction on how to compost and recycle waste.

Enforcement

Houston: The Assistant Director, Collections Division in Houston, reports that he has an administrative manager and four code enforcement personnel with specific responsibility to enforce the City's Solid Waste and Litter Control Ordinance. About 85% of their work involves giving out warnings. Chronic violators, however, are given summons, which require a court appearance and usually result in a heavy fine, ranging from \$200 to \$2,000 for repeat offenders. Staff reports that they first try to educate the public before resorting to violations.

Charlotte: Charlotte's Solid Waste Services Department has a strong enforcement program. The Community Improvement Division of the Solid Waste Services Department includes code enforcement personnel. This staff is empowered by ordinance to issue citations to residents or businesses that have violated the requirements of the City's solid waste collection ordinance. In addition, the inspectors provide some other traditional code enforcement activities, including enforcing illegal dumping ordinances and identifying high weed and litter problems.

Charlotte dedicates eleven (11) inspectors to code enforcement. City staff note that collection-related activities (i.e. responding to violations in set out requirements) account for less than 25 percent of the inspector's activities. High weeds, litter complaints, and enforcement of the City's hazardous, abandoned, and junked motor vehicles ordinance makeup the bulk of the field monitors' workload.

Fleet Maintenance

Interagency Cooperation:

The fleet management policies, procedures, and practices varied substantially among survey respondents. Approximately 50% of the respondents reported that another municipal agency or another division within the same agency handled fleet maintenance. With the exception of New York, the larger agencies did not have responsibility for truck maintenance. (See Figure 2 below) Complaints about the difficulties of not having control of this key function were numerous, resulting in a lack of cooperation in getting repairs completed timely and speedy truck acquisition.

FIGURE TWO

Agency	Maintenance Capability
Los Angeles	Other municipal agency
Chicago	Other municipal agency
Phoenix	Other municipal agency
Houston	Other department within same agency
New York	In-house
Philadelphia	Other municipal agency
San Antonio	Other municipal agency

Automated Vehicles:

Many agencies are purchasing automated vehicles to reduce operating cost and improve productivity. Los Angeles, Phoenix, Charlotte, Pasadena, Pomona, San Bernardino, Ontario are all automated. The larger cities such as Chicago, Houston, San Diego and Philadelphia have mixed fleets, with a heavy reliance on semi-automated vehicles. San Antonio declines to automate because of the expected impact on the workforce. Only New York reports difficulty using automated trucks because of its operating environment; its fleet is 100% manual rear loaders. However, the Assistant Commissioner reported that they were purchasing a few automated trucks as a pilot to use in the outer boroughs.

Fleet Maintenance

(cont'd)

Replacement Cycle

Most agencies report a seven-year replacement cycle, except for San Antonio, which replaces its fleet every 60 months, and Long Beach and Philadelphia, which replace trucks every eight and nine years, respectively.

Spare Vehicle Ratio

Assessing the impact of vehicle breakdowns on operations was far more difficult because the impact of the breakdown was largely dependent upon the number of spare vehicles available for the operators. While most agencies reported 20-25% spare vehicles, management complained that the impact of breakdowns was still significant, given the cost to the operations in overtime due to missed runs and increased customer complaints.

Operating Practices

Dispatch

At most agencies, the drivers report to the supervisors in the morning, but because drivers have permanent route assignments, dispatch is facilitated. Drivers proceed directly to their trucks for pre-trip inspection, and then leave on their routes. During the site visits, the Committee observed that drivers quickly dispersed leaving their yards at or near the time of departure time, unless there was a meeting.

Pre/Post Inspection

Most agencies allocated between 15 and 20 minutes for the pre-trip inspection process. Houston and Long Beach report that its inspections take no longer than 10 minutes.

Inter-facility transfers

About 1/2 of the responding agencies reported that they hired “as needed” drivers. With the exception of Philadelphia, extra list drivers were subject to inter-facility transfers to meet operating needs.

Work Schedules

- *Four-Day workweek:* There is an increasing trend to permit operators to work four (4) days per week and 10 hours a day. At least 40% of the responding agencies had introduced 4-10 work shifts, and management reported that this work schedule was very popular with the staff.
- *Other work schedules:* Other work schedule variations, such as split shifts or alternating start times, occurred less frequently. Only three of the 16, Chicago, Houston, and San Antonio, reported split or extended shifts, and four of the sixteen, Chicago, Houston, San Bernardino, and San Antonio reported that they used alternating start times.

Undertime

Undertime is a concern for several of the agencies surveyed. Most agencies responded that employees were permitted to leave if “they had picked up their route.” However, many pointed out that they were adjusting routes to ensure maximum productivity, such that employees did not have a great deal of undertime.

New York works multiple shifts in a day, so that end of shift overtime is significantly limited. Using a monetary incentive negotiated with the Union, employees are rewarded if they complete their shift on time and within budget.

Work Standards

All of the respondents indicated they had some way of measuring employee productivity.²⁰ The chart illustrates the diversity of standards reported by survey participants.

²⁰ Figure Three

Operating Practices (cont'd)

FIGURE THREE

City	Work Standard ²¹
Los Angeles	145 cans per hour
Long Beach	27 tons for automated (3 trips to SERRF) per day 16 tons manual (2 trips)
Chicago	Uses tonnage, unit count, and supervisor evaluation
Phoenix	Tonnage
Charlotte	Productivity is measured by households per hour: HH 32 per hour
Houston	175 cans per hour for household waste, 160 cans for recycled materials.
San Diego	14.5 tons for rear loaders, 10.5 tons per side loaders, 800 homes per day for automated routes
Pasadena	20 Tons a day
Pomona	750 containers per route
San Bernardino	22 Tons a day
New York City	10.6 per truck per day
Ontario	150 Four cu yard bins for commercial operation and 900-1000 residential houses
Torrance	Have route completed on time
Philadelphia	Currently determined by supervisor. In the process of re-evaluating.
San Antonio (3 man crews)	63 tons per week, 1376 homes per day

Employee Relations

Joint Labor Management Initiatives

Although Texas is a right-to-work state, Houston and San Antonio reported that they make a strong effort to work with existing unions. Both agencies retained a labor liaison on staff that reported to the Executive Director. In Houston, the labor liaison worked for management, while in San Antonio, the labor liaison was a union member. Both had direct access to the Executive Director and worked closely with management to facilitate a good working relationship between labor and management to resolve problems and maintain open communications.

Employee Incentive Programs

Employee recognition programs varied among the seven agencies the Committee visited. The most notable are the Pay-for-Performance programs giving employees a cash bonus if they meet a certain criteria. Houston, San Antonio, and San Diego give cash incentives.

Pay-for-Performance

Houston: Houston has a comprehensive employee incentive program. Local government initiated the program entitled, *Performance Incentive Awards for Municipal Employees* or *Pay Incentive Plan* (PIP) by Executive order in August 1997. According to the plan, if employees met specific goals, they can earn a one-time bonus. The main features of PIP are as follows:

- The plan includes all eligible department employees as a whole.
- It provides for one time, non-recurring cash incentive awards.
- The incentive plan focuses on actual bottom line savings from its general fund budget.
- The plan provides a cash incentive for increased levels of service (efficiency improvements).

²¹ For household refuse only.

Employee Relations

(cont'd)

Houston's specific objectives for the 1999 PIP plan were to achieve cost savings by reducing lost time injuries and absenteeism to save 30% of the workers' compensation budget. If the employees achieved the goal of \$300,166 in savings, then management would grant an incentive of approximately \$230 per eligible employee while preserving 50% of the overall savings for Houston's general fund. Another goal was to decrease personnel expenditures by \$300,000, by reducing staffing requirements. Payment to employees would be approximately \$230 each. Finally, the plan committed to pay each employee \$545 if they achieved their goal of reducing expenditures for supplies and services by \$700,000. As a part of the agency's overall plan to expand curbside recycling service with no additional cost, employees would receive \$200 each for every 25,000 homes beyond the budget level. Employees earned \$650 in 1999.

San Antonio: San Antonio also has an integrated and comprehensive employee incentive program. Pursuant to its pay for performance program, the agency recently distributed more than \$200,000 for achieving \$1.1 million in savings. Employees with more than two years tenure received \$350, and those with less than 2 years received \$175.

A number of incentives for employees have been implemented as follows:

- Installing cellular phones on all trucks, instead of radios;
- Providing two bottles of Gatorade per day for each employee;
- Reducing the work standard from 66 to 63 tons per week; and
- Providing a monetary incentive for solo work. For example, if a collector goes out by himself²², he receives five hours bonus pay on Monday or Tuesday or three hours of bonus pay on Thursday/Friday.

San Antonio also has an Employee of the Quarter Program, which provides the winner with a \$100 savings bond, a day off with pay, and a special parking space.

San Diego: San Diego has implemented employee award programs for safe driving and a program to recognize exceptional employee performance. Of particular note is the annual safety incentive pool, which distributes a pot of money to eligible employees with no preventable accidents, injuries, disciplinary action, unauthorized absences or excessive sick leave. In 1999, employees received \$75 each for safe driving.

Another City program rewards employees in various City departments, including Solid Resources for a job well done. The amount of the cash payment is based upon the amount budgeted for each department in the City's budget, divided by the number of participants who meet the established criteria, which is set by the department. However, no single employee can receive more than \$1000. Recently, in the annual exceptional performance award program, employees received \$50 each, and in the peer recognition awards program, eligible employees received \$100 each.

Finally, San Diego also provides different incentives to encourage drivers. For example, management gave all drivers, with no accidents in June, a five-dollar gift certificate for Carl's Jr. In addition, management gives employees days off and other gift certificates. Both supervisors and peer committees can nominate employees to receive awards.

Long Beach: Long Beach stated that while it did not have an incentive program in place, employees received a breakfast and plaque for perfect attendance. On the day the Committee visited the facility, management put on a program to recognize employees with perfect safety records.

²² San Antonio crews often consist of three people – the driver and two loaders. Crews work for four days/10 hours per day.

Workers Compensation

Cash Incentives

Most agencies reported major problems with employees injured on duty. Although the numbers of injuries appear to decrease with truck automation, some agencies report an increase in other types of injuries, such as carpal tunnel syndrome, with the automated trucks. Houston and San Antonio have tied the reduction of injuries on duty with their pay for performance programs. Houston cost reductions were so significant in 1999 that employees received a cash award of \$650, at least in part, because of the reduction in Workers Compensation costs. San Diego has a safety program with large safety initiatives when employees meet the criteria. Consequently, they have experienced a decrease in the number of injuries.

Restricted Duty Programs

In addition, the Texas agencies report an aggressive light duty Workers Compensation Program that requires workers to work in a reduced capacity. This program helps to discourage workers from filing false claims to stay home to collect funds without working for long periods.

Technology

GIS and Routing Software

Different routing software, such as RouteSmart®, Arc Logistics®, and GIS, give agencies the capability of creating real time maps to aid in the development of routes that save time and money. Many cities report that they are working with other city departments on developing and/or using GIS systems and exploring different routing software applications.

Together – routing software and GIS – helps to balance workload among routes and collection areas to develop the most efficient routing of collection vehicles within a route, as well as to and from the routes and the landfill. The system helps to respond to seasonal fluctuations in workload quickly by identifying inefficient routes or unproductive crews. Finally, GIS helps to respond to customer service requests by providing supervisors with all the information about a particular address so that a quick response is possible.

RouteSmart® is used for continuous routing of automated and two-man collection truck routes. Although many cities are exploring this software, San Diego, Philadelphia, and Charlotte are three cities in the study that are actively using RouteSmart® technology for continuous routing, and all report good results, but difficulty in implementation.

Arc Logistics® is typically used on point to point routes, i.e., routes based upon calls for service such as bulky items, white goods, bulky brush, move in/out collection routes. Arc Logistics® is a much easier software package to use, which makes it ideal for use by persons with no GIS experience, unlike RouteSmart®, which requires GIS knowledge. Los Angeles and Houston are using the RouteSmart® software.

■ San Diego was one of the first agencies to implement GIS and RouteSmart®. It has dedicated significant resources to the development of the project. The GIS and RouteSmart® projects were a joint San Diego City and County project, designed to provide managers with state of the art geographic information capability for a wide variety of management functions. For refuse collection, this system accesses data about selected areas of the City and has reliable house count numbers, street addresses, and type of public and private refuse collection service. It also has current refuse collection route information such as type of equipment, crews assigned, and historical data on tonnage collected. Therefore, management is better able to optimize routes. Alternative route design is now easy and maximizes efficiency and savings. San Diego is very satisfied with RouteSmart® and has even developed a Spanish conversion program for Spanish speaking drivers.

Technology

(cont'd)

- Philadelphia reported that they are still experiencing problems with the program after several years of use.
- Charlotte reported that implementing the RouteSmart® software required a substantial commitment of capital, people, and technological support.
- Houston reports that it encountered significant problems with RouteSmart® and is now testing Arc Logistics.

Global Positioning System (GPS)

Of the cities participating in the study, only San Diego is actively developing a GPS capability, which will be able to track the location of its vehicles at any time. San Diego shares the GPS with other municipal services and dedicates staff and resources to the development of this technology.

On Board Scales

San Antonio and San Diego fleets are equipped with on-board scales. Managers at both facilities indicate that the scales are not very accurate, forcing drivers to average the lowest and highest number.



V. Recommendations Best Practices

As indicated above, the Committee evaluated a number of noteworthy policies, procedures, and practices. We urge the Bureau to further study and review the recommendations of best practices discussed below. While the study confirms that Los Angeles has already implemented many of the “best practices” now being considered by other agencies, other noteworthy programs could be beneficial. The recommendations fall into four major categories:

- Organizational and political structure;
- Operating Procedures;
- Customer Service Initiatives; and
- Employee Relations.

Organizational and Political Structure

Annual Industry Benchmarking Study

The Committee recommends that the Los Angeles Bureau of Sanitation, SRCD, collaborate with SWANA to lead an industry-wide benchmarking study which will develop financial performance indicators, with uniform guidelines on how to collect data, for a more accurate benchmarking survey on costs. This information would provide an invaluable support to all agencies, as well as set uniform standards, so that the industry can make credible comparisons among different solid resource public and private companies.

General Fund vs. Enterprise Funding Structure

Los Angeles is a general fund City, but it is among the most cost competitive in the survey. Nonetheless, the Committee recommends a study of the feasibility of implementing a full cost recovery system. Like most large cities responding to the survey, with the exception of some revenue derived from recycling sales, commercial accounts, and other small projects, refuse collection and disposal services for Los Angeles is funded out of the City’s general fund. As such, all expenditures must be budgeted and approved by the governing body.²³

All of the large and medium size cities, i.e. New York, Los Angeles, Chicago, Philadelphia, Houston, San Diego (for household refuse only), are general fund cities, roughly 50% of the survey participants. In most of these cities, residents paid little or nothing for service or equipment usage or other fees. In Phoenix, Pasadena, Ontario, Torrance, San Antonio, Seattle, and Long Beach, collection services for all commodities are fully funded from the fees, which residents pay for the service. A full cost recovery system has many advantages, including the following:

- Municipalities are able to document accurately the cost of the services to the public.
- Management and employees are motivated to increase productivity to reduce expenditures.
- Agencies are able to generate cash reserves to handle emergencies and special projects without the delays associated with the budget approval process.

At least two of the agencies with full cost recovery systems reported that they have come in under budget in recent years. All excess money is either placed in a reserve fund or turned over to the general fund to be used for other essential city services. The important issue with enterprise funding is that it gives the agency greater flexibility in managing its operation. As long as the agency does not exceed the revenue received from the fees charged to residents and local businesses on an on-going basis, the agency can operate relatively independently, without the political challenges associated with the annual municipal budgeting process.

²³ The Houston survey also documented that sanitation services in large cities are paid for out of the general fund

Organizational and Political Structure:

(cont'd)

Moving from a general fund budget to enterprise funding may well generate community opposition and political challenges to the change. Such a public debate might even invite private sector waste management companies to seek privatization of services since they would have a base of financial comparison. However, once the agency overcomes these challenges, it is able to make significant strides and often compete successfully with private industry.

Partnerships

The Committee recommends the exploration of opportunities to work with other public organizations to expand its operational and financial options. Collaborating with regional solid waste agencies and the County could benefit the Bureau. Using the SERRF facilities and working with the County to finance construction of a transfer station are good examples of successful collaboration with other public agencies. SERRF, a joint venture between the City of Long Beach and the County of Los Angeles, is a waste-to-energy facility, owned by the public, but managed by the private sector.

However, perhaps the most beneficial partnership that the Bureau can nurture is with its own employees through effective labor/management initiatives. Without the commitment of its workforce to provide efficient and excellent services to Los Angeles residents, management will not be able to achieve and maintain the most cost-effective customer service.

Enforcement Code

The Committee recommends that the Bureau seek appropriate legislation through the municipal code for a Solid Waste and Litter Control Ordinance granting enforcement powers to the Bureau of Sanitation, Solid Resources Collection Division. The ordinance would give district supervision enforcement authority to site offenders for violations of sanitation regulations and to issue parking tickets as required to facilitate the collection of refuse.

Operating Procedures

Fleet Management

Most of the agencies responding to the survey that did not have control of maintenance services complained that vehicle reliability and availability were a major problem. The Committee recommends that the Bureau continue to work with the General Services Department to improve daily fleet maintenance at each of the district yards. The Bureau and General Services Department should continue to work together to set priorities, goals, and objectives that support operations. For the daily scheduling of work and repair of vehicles, the maintenance staff should work collaboratively with the District Superintendent.

Also, in other vehicle-based operations, such as trucking, transit, and delivery services, operations and maintenance work together to ensure that operations has the requisite resources that it needs to do the job. Day to day maintenance must support operations by setting work schedules and priorities that support common goals.

Road Truck

The Committee recommends that the Bureau and General Services Departments continue to work together to establish a permanent mobile road truck for each district. Most agencies reported that having a mobile road truck was an invaluable aid to their operation in that it permitted minor or routine repairs to be completed on the road without requiring the truck to be returned to the district. It saves time and money.

Pre/Post Vehicle Inspection

Currently, Los Angeles allocates up to 30 minutes for a pre-trip vehicle inspection if required. Other properties report that they allocate from 10 to 15 minutes for pre-trip inspections. At a minimum, the Committee recommends that the Bureau authorize the

Operating Procedures (cont'd)

appropriate PAT to review current inspection protocols in Los Angeles and at other properties. With the acquisition of new trucks, pre-trip procedures should be re-visited periodically to ensure that the time allocated for the inspection is appropriate.

Transfer Stations

The Committee recommends that the Bureau explore the financial feasibility of acquiring another transfer station for those districts which have a substantial travel time to the landfills. For the future, the Bureau should explore the acquisition of transfer stations so that the agency can use other landfills if financially and operationally feasible. In addition, access to transfer stations may well support the agency's effort to rely less on direct haul and more on rail haul to other landfills in the future.

90 gallon containers versus 60 gallon containers

Some agencies use 90-gallon containers, especially for green waste and recycling because larger cans increase diversions. The Committee recommends that the Bureau investigate whether it is operationally feasible to increase container size to 90-gallon cans for green waste collection.

Clean Service Areas

Recently there has been a great deal of activity in the yards to improve the facilities and workplace. The Committee commends the Bureau for their effort to improve the physical surroundings as this significantly improves employee morale. The Committee was very impressed with the facilities at some of the sites it visited. Houston does not hold refuse overnight so that the area is very clean and there is no odor. Trucks are washed daily. The Committee recommends that the continuation of these efforts improve the work environment.

Customer Service Initiatives

Community Outreach and Educational Efforts

Houston, Seattle, San Antonio, and Long Beach have well developed customer relations programs to notify residents about solid resource issues and to encourage residents to participate in certain programs. The Committee recommends that the Bureau investigate expanding its community outreach to include the following services:

- A mobile trailer containing educational materials about the City's recycling program for elementary school children. The trailer visits schools for interactive learning sessions.
- Community Circulars or newspapers to advise the community of particular initiatives and new programs are helpful and educate the public on important issues that will help the department meet its goals.
- Develop a center similar to Houston's drive-thru recycling center to allow residents to leave used goods, BOPA²⁴ hazardous waste, and provide a facility for education of the community.
- Introduce bulky item drop-off at all districts which would reduce illegal dumping. Several districts have already adopted this activity. The Committee recommends that the Bureau take steps to explore the feasibility of implementing this program at all districts and introduce a community outreach program that advises residents about the service.
- Increase community contact by instituting a regular customer survey for all service non-collection contacts. Ontario introduced a program where supervisors would leave a postcard service survey on every service delivery. Such initiatives help focus staff on the importance of customer relations and allow residents an avenue for agency contact in a non-hostile way.

²⁴ "BOPA" means batteries, oil, paint and anti-freeze.

Customer Service Initiatives

(cont'd)

- Many of the sites the Committee visited are investigating mulching and conservation programs similar to the programs recently initiated in Los Angeles at Van Norman. The Committee recommends that the Bureau explore a free mulching program for Los Angeles residents and that the Bureau continue its free program to teach the public how to compost.
- While many agencies are transitioning to a centralized telephonic complaint system, such as an 800 number, we urge the Bureau to ensure timely and professional contact with the public and seamless service. Most cities adopting this service are significantly smaller than Los Angeles, so that the incidences of miscommunication, phone delays, etc. occur less frequently than in a large city.

Employee Relations

The Committee was impressed by a number of activities and programs at the various sites for employees and recommends that the division explore the feasibility of implementing some of the following programs at all SRCD districts. Of special interest are the following initiatives and programs:

Joint Labor/Management Initiatives

Los Angeles is the only agency that has a well-developed joint labor/management program as adopted in the Process Action Committees. Managers at the other sites were interested in our model. The PAT process is a best practice and the Committee recommends that the program be highlighted whenever possible at conferences and other industry events.

Employee Relations Ombudsperson

Although Texas is a right-to-work state, Houston and San Antonio made a significant effort to develop and maintain strong relations with its employees through authorized collective bargaining units. Each agency had personnel solely dedicated to facilitating labor/management relations, reporting directly to the Executive Director. Therefore, the Committee recommends that the Bureau Director consider the possibility of appointing a full time labor relation's ombudsman to liaison between the Union and the Bureau of Management-Employee Services, Division management and Executive staff. This person would not replace the personnel already assigned to this responsibility, but would rather work to improve relationships in a non-adversarial manner. Most other agencies have labor relations staff assigned within their departments to work informally on resolving issues before they escalate into conflict and dissension and a full-blown grievance. The Committee believes that such a person would benefit both labor and management because it would focus attention on many common disputes that could be resolved with early intervention and through mediation.

Pay for Performance

For the reasons already discussed earlier in the report, the Committee recommends that the Bureau investigate the possibility of developing a pay for performance program similar to Houston, San Antonio, and San Diego. The pay for performance program should provide employees with a one-time non-recurring cash bonus award for meeting specific measurable goals and objectives, which generate savings for the division or other safety initiatives.

Incentive Programs

The Committee recommends that the Bureau investigate the feasibility of implementing programs to provide incentives to employees for safety, absenteeism, and work performance. Examples of incentives are as follows:

- Agency recognition with plaques and assignment to other support programs.
- Cash incentives for good driving records, no absences and high performance.
- Days or time off for extraordinary performance above established goals.

**Employee
Relations**
(cont'd)**Work Schedules**

A number of agencies have adopted alternating start and end times and 4/10 work schedules, which are highly regarded by employees. The Committee urges the Bureau to evaluate the possibility of implementing alternating work schedules and a 4/10-work schedule at appropriate districts. A pilot program may well provide the requisite information to help management determine the issues, cost, and concerns that might arise should it implement such programs.

Employee Activities

The Committee recommends that the SRCD have more employee activities such as breakfasts, picnics and family oriented events, to which SRCD and other members of executive management would be invited.



VI. Appendix

BUREAU OF SANITATION – CITY OF LOS ANGELES
433 South Spring Street Fourth Floor • Los Angeles, California 90013
213 485-5112

BENCHMARK STUDY – BEST PRACTICES

Name of City: _____

Agency Name: _____

Contact Person: _____

Address: _____

Telephone: _____

Fax: _____

Website: _____

The Bureau of Sanitation of the City of Los Angeles is conducting an analysis and review of its work practices and procedures in the Solid Resource Collections Division. We want to survey selected sites in the Solid Resources industry for innovative ideas and concepts that will help us reorganize and improve operational efficiency. The objective of this benchmarking study is to document the best personnel and operating practices in solid resource collection and in other related industries. We request that you respond to the following questions concerning your personnel and operating policies, practices, and procedures. In addition, please provide any available documentation of your procedures and practices.

We have retained the services of the Seabrook Organization, a consulting firm in Los Angeles, to conduct the benchmarking study on our behalf. Should you have questions or concerns about the study, please contact Judith T. Pierce of Seabrook for clarification or information.

We ask that you respond to this questionnaire by *August 31, 1998*, and send to:

The Seabrook Organization Inc.
336 South Norton Avenue, Suite 206
Los Angeles, California 90020-6400
(323) 525-0046 . (323) 525-0276
E-mail: seabrookinc@worldnet.att.net

We apologize for the length of the questionnaire and have taken every opportunity to ask yes or no questions. The information is important to us, as it will help improve the quality of our service and control cost.

We welcome your comments and deeply appreciate your cooperation and assistance with this project.

General Questions about your Agency:

Please provide the following general information about your agency.

1. General population of the service area _____
2. Number of square miles within the service area _____
3. Number of single family units served _____
4. Number of multiple family units served _____
5. Does your agency use private contractors to collect solid resources or recyclable items?
 Yes No

6. If yes, state type of services private contractors provide.

	Yes	No
Residential	<input type="checkbox"/>	<input type="checkbox"/>
Multiple Dwellings	<input type="checkbox"/>	<input type="checkbox"/>
Commercial	<input type="checkbox"/>	<input type="checkbox"/>
Recycling	<input type="checkbox"/>	<input type="checkbox"/>

7. What percentage of services do private contractors provide? _____
8. Do you collect the following solid resources separately?

	Yes	No
Green Waste	<input type="checkbox"/>	<input type="checkbox"/>
Recyclable materials	<input type="checkbox"/>	<input type="checkbox"/>

9. Provide annual tonnage for the following collection categories.

Residential solid waste _____
Heavy trash/special collections _____
Recycled materials _____
Green waste _____

10. Container types and sizes _____
11. Frequency of collections _____
12. Curbside service Yes No
13. Backyard or off street service Yes No
14. Number of collection yards _____
15. Number of routes per collection yard _____
16. Average mileage per route _____
17. Number of landfill(s) operated _____
18. Number of landfill(s) owned _____
19. Number of transfer station(s) operated _____
20. Number of transfer station(s) owned _____
21. Number of recycling center(s) or material recovery facilities operated _____
22. Number of recycling center(s) or material recovery facilities owned _____
23. Provide an organizational chart for your Agency.
24. Do you provide collection services on Saturday? Yes No

25. If yes, indicate the nature of the services you provide on Saturday.

	Yes	No
Household trash	<input type="checkbox"/>	<input type="checkbox"/>
Recycled items	<input type="checkbox"/>	<input type="checkbox"/>
Green waste	<input type="checkbox"/>	<input type="checkbox"/>
Dead animal	<input type="checkbox"/>	<input type="checkbox"/>
Other		

Fleet Maintenance and Services

Please provide information about the service and maintenance of your vehicles.

If available, provide a fleet assignment sheet detailing the make, model, and year of vehicles used and a copy of the automated truck specification most recently purchased.

26. Who maintains the Agency's vehicles?

	Yes	No
Your Agency	<input type="checkbox"/>	<input type="checkbox"/>
Private contractor(s)	<input type="checkbox"/>	<input type="checkbox"/>
Another municipal agency	<input type="checkbox"/>	<input type="checkbox"/>

27. Number of trucks assigned to each collection yard? _____

28. Type of vehicles operated?

	Yes	No	Percentage of Fleet
Automated	<input type="checkbox"/>	<input type="checkbox"/>	_____
Semi-automated	<input type="checkbox"/>	<input type="checkbox"/>	_____
Manual	<input type="checkbox"/>	<input type="checkbox"/>	_____

29. What is the vehicle replacement cycle? _____

30. Average number of vehicle failures per day per collection yard _____

31. Please provide a copy of your preventive maintenance procedures.

32. Does maintenance staff perform on the road repairs? Yes No

33. Number of persons used on automated trucks? _____

34. Average fleet age _____

35. Fleet vehicle spare ratio _____

36. What performance indicators do you use to determine fleet reliability and availability?

Personnel Policies and Procedures

Please provide information on your agency's personnel policies and procedures. A space has been provided on page 6 for additional comments.

37. Number of truck operators assigned to each collection yard? _____

38. Specify job classifications at each collection yard. _____

39. Name of the Union(s) representing truck operators and other hourly employees?

40. Describe current joint labor/management initiatives and provide any available written information.

41. Provide a copy of all collective bargaining agreements with hourly employees.
42. Number of shifts per collection yard _____
43. How long is each shift? _____
44. Do you operate split or extended shifts? Yes No
45. Do you have alternating start times? Yes No
46. If an operator finishes collections on his or her route before the end of the shift, is the operator allowed to go home? Yes No
47. If the answer to question 46 is yes, is the truck operator paid as if he/she had worked the whole shift? Yes No
48. If the answer to question 46 is no, is the truck operator assigned to cover other routes within his/her yard? Yes No
49. Please attach a copy of your sick leave, paid leave, and unpaid leave policies.
50. What is the average number of unscheduled absences per employee per year?

51. What employee incentives do you have in place for work performance, safety, or attendance?

52. What percentage of truck operators are injured on duty per year? _____
53. What percentage of your operating budget is spent on workers' compensation costs per fiscal year? _____
54. What are your Agency's return to work criteria following a job related injury?

55. Does your Agency use injured truck operators on light duty or in other temporary jobs?
 Yes No
56. Identify the kinds of jobs to which injured operators are assigned pending a return to full duty.

57. Are permanently injured truck operators rehabilitated and/or retrained for other jobs within the agency or for positions within other state or municipal agencies?
 Yes No

58. Describe your training program for drivers, supervisors, and managers in safety, customer service, supervision, and management. Please provide a copy of the training curriculum, if available.

Operating Practices and Procedures

59. How are truck operators dispatched to routes at the beginning of the shift?

60. Are truck operators permanently assigned to specific routes?

Yes No

61. Do you maintain an extra list to cover scheduled and unscheduled absences?

Yes No

62. If yes, how many extra list operators do you maintain per collection yard?

63. If you have more than one yard, are the extra list operators moved from yard to yard as needed?

Yes No

64. What indicators do you use to measure operator performance?

65. Describe the work standard you use for your truck operators and other hourly personnel.

66. What is the average number of overtime hours earned per truck operator per month?

67. What methodology do you use to set up your routes?

68. Do you use Route Smart or any other technology to construct your routes?

Yes No

69. What is the average on route time? _____

70. How are routes assigned to operators? _____

71. Do you require operators to conduct a pre-trip or post trip inspection? Yes No

72. If yes, how long is the pre-trip inspection _____ or the post trip inspection? _____

73. Please provide a copy of the pre-trip inspection requirements.

74. Do your truck operators use a time clock or other technology to document time of arrival and departure? Yes No

75. How long are lunch and other breaks? _____

76. How do you measure performance in customer service? _____

77. How do customers file complaints? _____

78. What is the average number of complaints received annually? _____

79. Who investigates and resolves customer complaints within your Agency?

80. Has your Agency conducted customer service surveys? Yes No

81. If yes, please provide a copy of any surveys and survey results.

Financial Information:

82. What is your operating cost per hour and/or mile? _____

83. What percentage of your current operating budget is allocated for unscheduled overtime?

84. Please provide a copy of your operating budget for FY 98/99.

Technology

85. Does your Agency use any of the following technology?

	Yes	No
Computerized routing system	<input type="checkbox"/>	<input type="checkbox"/>
On board data retrieval system	<input type="checkbox"/>	<input type="checkbox"/>
Automatic vehicle locator devices	<input type="checkbox"/>	<input type="checkbox"/>
Wireless Data Communication	<input type="checkbox"/>	<input type="checkbox"/>
On-Board Scales	<input type="checkbox"/>	<input type="checkbox"/>
Container Identification for Inventory and Storage		
– Bar coding	<input type="checkbox"/>	<input type="checkbox"/>
– Radio frequency identification tags	<input type="checkbox"/>	<input type="checkbox"/>
Global Positioning System	<input type="checkbox"/>	<input type="checkbox"/>
Local area network	<input type="checkbox"/>	<input type="checkbox"/>
GIS	<input type="checkbox"/>	<input type="checkbox"/>

Comments:

SUMMARY OF SURVEY RESPONSES¹

PRACTICES	Los Angeles	Chicago	Phoenix	Houston	San Diego	Charlotte	Pasadena	Pomona
Private Contractors – Residential – Multiple Units – Commercial – Recyclable	Yes, for multiple dwellings & commercials	75%	Yes, 1/3 of City	33% commercial, recycling	Yes, 50% curbside recycling	Yes, 25%	Yes, 1/5 of service	Yes, commercial only
Separate green and recyclable items?	Yes	No	No green waste, yes on recycled items	Yes	Yes	Yes	Yes	Yes
Own/operate – Transfer stations – Landfills – MRFs	No	1 landfill, 4 MRFs operated, 3 owned	1 landfill, 1 transfer & 1 MRF	Own 3 transfer stations	Operate one landfill and One full service zone collection center.	Own one transfer station	Operate One landfill	No
In-house vehicle maintenance?	No, other City department	No, other muni agency	No, other muni agency	Same agency, different division	No, other muni agency	No, other muni agency	Yes	Yes
Number of trucks	600	469	150	280	144	102	13 per yard	46
Truck type: – Auto – Semi-auto – Manual	80% Auto 10% Semi 10% Manual	100% Semi-auto	74% Auto, 26% Bulk	30% Auto, 40% Semi, 30% Manual	49% Auto, 7% Semi 44% Manual	100% Automated	98% Automated	97 % Automated
Truck replacement cycle?	7 years	7-10	7	7	7	Not provided	7	7
Average fleet age?	4-5 ²	7	4	4.27	1-12 years, 10 years for Manual	>5 years	7.5	3
Spare ratio?	20%	1:5	25%	25%	27%	Not provided	12%	5 Trucks
Breakdowns per day per yard?	11	5-10%	7	Varies from 10-19 per yard	5-7 per yard 4 yards		4 vehicles per yard	4
Shift length	8 hours	8 hours	10 hours	10 hours for collections. 8 hours for maintenance	8 hours	8 hours	8 hours but 6 operators on 4-10 schedule with 10 hours per day.	8 hours or until finished
Shift split or extended	No	Yes	No	Yes	No	No	No	No
Alternating start times	No	Yes	No	Yes	No	No	No	No
Undertime ³	Yes	Not provided	Not provided	Yes	Yes	Not provided	Yes	No
WC costs	N/A	>1%	Not provided	1.5%	Not provided	Not provided	6.6%	Not provided
# of IOD injuries	17%	10%	.578	Not provided	54% included multiple injuries	Not provided	12 per year	2% of operators
Dispatch	Central at each district	Central	Assigned	Dispatch by district supervisor	Assigned by district district supervisor	Not provided	Assigned by crew supervisor	Not provided
Permanent assigned routes?	Some	Yes	Yes	Yes	Yes, if possible	Not provided	No	Yes
Extra list drivers?	No	Yes/15% per yard	No	Yes/30% per yard	Yes	Not provided	Yes	No
Inter-yard transfers for extra list drivers?	No	Yes	No	Yes	Yes	Not provided	Yes	N/A
Operator performance measures? – Tonnage – Unit count – Down time – Supervisor evaluation	Yes to all and and overtime	Yes to all	Weight, time, and accident	Route completion and attendance	Tons per day, Service complaints, Accidents, attendance, IOD, and discipline	Not provided	Equipment upkeep, injuries, attendance, and team effort	Overtime, complaints, completion of route
Work Standard	145 cans	Supervisor determined	Route weights	175 Cans HH & 160 Cans recycling	14.5 tons for rear loaders, 10.5 tons per side loaders, 800 homes per day for automated routes	132 Houses per hour	20 tons per day	750 cans per route
Average time on route?	5.5	5.5-6	6.6	8.5	7.5 hours Automated, and 6.5 manual		7.5	5.5
Pre/Post Inspection	30 min.	No	20/15	10/10	15/15		20-30/20-30	20/10
Overtime? % of budget	Not provided	Not provided	1.3%	Not provided	2.4%	Not provided	1.3%	2.73%
Average OT hours per month?	Not provided	Not provided	Not provided	10 hours per month	Not provided	Not provided	3-5 hours per month	7 hours
– GIS – Auto coach – Route Smart	Yes to auto coach, working on GIS, and studying route smart	Container id. Bar coding, radio frequency id tags	Pagers, cellular phones, radio id tags, local area network, GIS in pilot	Route Smart, GIS, and local area network	Route smart, on board data retrieval, automatic vehicle locator system, wireless data communication, scales, GIS, and bar coding	Route Smart, LAN, GIS	LAN	Radios

¹ Information is based on 1998 data submitted in surveys. Some information was updated and may be different at this time.
²Years

³Questions 46 – “If an operator finishes collections on his/her route before the end of the shift, is the operator allowed to go home? and Question 47 – “If the answer is yes, is the truck operator paid as if he/she had worked a whole shift”

SUMMARY OF SURVEY RESPONSES¹
(cont'd)

PRACTICES	San Bernardino	NYC	Ontario	Torrance	Philadelphia	San Antonio	Long Beach
Private Contractors – Residential – Multiple Units – Commercial – Recyclable	Yes, 10%	No	No	Yes, 2/3 of service	Yes,	Yes, 8% of service	Yes, recycling
Separate green and recyclable items?	Yes	Yes	Recycling only	Recycling only	Recyclable items only	Recycling only	Yes, recycling only
Own/operate – Transfer stations – Landfills – MRFs	No	Operates one landfill and 7 marine transfer stations	No	No	One transfer station	Own one transfer station which is operated by private contractor	JPA owned waste to energy facility (SERRF)
In-house vehicle maintenance?	Yes	Yes	Yes	Yes	No, other muni agency	No	Same agency, different division
Number of trucks	37	1950	50	27	300	336	53
Truck type: – Auto – Semi-auto – Manual	100% Automated	100% Manual	100% Automated	50% Auto and 50% Manual	Semi-auto and Manual	100% Manual	Both
Truck replacement cycle?	7	7	7	7 Auto and 10 Manual	9	60 months	8
Average fleet age?	10	3.5	8	6	8	60 months	5
Spare ratio?	9:35	31%	25%	3 automated and 3 recycling	2 per yard	8 vehicles	8
Breakdowns per day per yard?	8-10	Not provided	10 per day	2		Varies 1 to 5	2-3
Shift length	8 hours and 10 hours	8 hours	8 hours and 10 hours	10 hours	8 hours	10 hours	8 and 10 hours
Shift split or extended	No	No	No	No	No	Yes	No
Alternating start times	Yes	No	No	No	No	Yes	No
Uvertime ²	No	No	Yes in commercial, No in residential	No	Yes if route is clean	Yes	Not provided
WC costs	2.8%	Not provided	Not provided	Not provided	Not in budget	2.76%	Not provided
# of IOD injuries		1%		>10%		45 of all operators	25 per year
Dispatch	Not provided	Seniority pick at the beginning of year	Assigned	Assigned to same route and truck daily. Supervisor dispatches	Assigned by supervisor	Assigned by routes	One dispatch supervisor
Permanent assigned routes?	No	Yes	Yes	Yes	No	Yes	Yes
Extra list drivers?	No	No	No	Yes	Yes	Yes	Yes
Inter-yard transfers for extra list drivers?	N/A	Yes	No	N/A	No	Yes	N/A
Operator performance measures? – Tonnage – Unit count – Down time – Supervisor evaluation	Productivity report	Completion of route, absences, lateness, and accidents	Accidents, complaints, missed stops, attendance, and route management	Completing the route on schedule, attendance, complaints, team work, equipment upkeep and safety	Productivity	Weekly tonnage loads and hours	Tonnage
Work Standard	22 tons	Specific truck shift targets. Average 10.6 tons per truck. Varies by district.	1504 cu yard bins, 900-1000 residential homes	Supervisor determined	Goals per route	63 tons per week, 1376 homes per day	27 tons/auto & 16 tons manual
Average time on route?	Not provided	8	8 residential and 6.5 commercial	7.5	3	7-8	8.5
Pre/Post Inspection	Not provided	Yes no time provided	15/15	15/15	30/30	Yes	15
Overtime? % of budget	Not provided	Not provided	0	Not provided	4.5%	2.82%	Not provided
Average OT hours per month?	20 hours per month	No end of shift overtime, employees work days of at double time	1.8 hours per month	Unavailable	Unavailable	Unavailable	Unavailable
– GIS – Auto coach – Route Smart	LAN, GIS, Pilot route smart	Pilot route smart, LAN, GIS	None	None	Route smart, LAN, GIS	Wireless data communication, on board scales	None

¹ Information is based on 1998 data submitted in surveys. Some information was updated and may be different at this time.

² Years

³ Questions 46 – “If an operator finishes collections on his/her route before the end of the shift, is the operator allowed to go home?” and Question 47 – “If the answer is yes, is the truck operator paid as if he/she had worked a whole shift?”