2009
SWANA EXCELLENCE AWARDS
Solid Waste Management System

CITY OF LONG BEACH
Environmental Services Bureau

Submitted by:
City of Long Beach Environmental Services Bureau
2929 E. Willow Street | Long Beach | CA 90806
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EXECUTIVE SUMMARY

Long Beach is the fifth largest city in California with a population of 492,912. The City has one of the most ethnically and culturally diverse communities in the nation. Equally diverse is the variety of properties - residential neighborhoods, business corridors, recreational parks and beaches, a port, an airport, large-event venues, and large-scale industrial areas – all within City boundaries and offering numerous operational and service challenges.

To meet the service needs of its complex and diverse community, the City utilized an interest-based approach when developing its Integrated Waste Management System. Employing a mix of public and private resources, the System is designed to contribute to environmental protection through resource conservation, materials recovery, market expansion for recycled materials, and economic development of recycling-based industries.

The City promotes its System’s repertoire of operations and services by using creative and engaging public education and outreach campaigns that communicate on a personal level and incorporate multi-lingual and multi-cultural messages, while retaining consistent and recognizable themes of environmental protection and personal responsibility.

All components considered, Long Beach has created one of the most innovative, forward-thinking and effective Integrated Waste Management Systems in the country.
OVERVIEW OF SYSTEM AND SYSTEM PERFORMANCE
In 1989, the California Integrated Waste Management Act (AB 939) was signed into law. AB 939 mandated that every city and county in the state reduce the amount of solid waste disposed at landfills with a requirement to achieve a diversion rate of 50 percent by 2000.

The City of Long Beach viewed the passage of AB 939 as an opportunity to create an organization within the City to manage all aspects of solid waste management: refuse collection, recycling, disposal, market development for recycled materials, and public education and outreach. Thus, the City's Environmental Services Bureau (ESB) was created in 1989.

Knowing that City resources alone would not meet the increasing need for a variety of solid waste services required by various waste generators, the City determined that a mix of public and private resources would be required to meet the growing solid waste demands of Long Beach. This strategic approach was reflected in three key public/private endeavors.

- Construction of the Southeast Resource Recovery Facility (SERRF) on Terminal Island in Long Beach. SERRF is a waste-to-energy facility jointly owned by the City of Long Beach and the County of Los Angeles Sanitation District, and currently operated by a private-sector firm, Veolia;
- Residential-generated refuse collection was provided by the ESB's Refuse Division and commercial-generated refuse collection was provided by a limited number of private waste haulers; and
- Residential recycling was contracted to Waste Management, a private sector waste hauler.

AB 939 also required jurisdictions to develop a Source Reduction and Recycling Element (SRRE, or AB 939 Plan) and a Household Hazardous Waste Element (HHWE) that would serve as their plans for complying with all AB 939 mandates.

ESB used an interest-based approach to develop the City's SRRE. Staff identified key members of the community to serve on a special Solid Waste and Recycling Advisory Committee, and then partnered with the Committee to conduct a series of stakeholder workshops (private sector firms involved with solid waste and recycling, business and community groups, and concerned Long Beach residents). From this extensive effort, an Integrated Waste Management Program Policy Statement was developed – reflecting a consensus of opinion. The Long Beach City Council adopted the Policy Statement in October 1989.

The primary purpose of this Policy Statement was to provide a basic framework for the City's waste reduction, recycling and recovery efforts. Not only did it serve as the foundation for the policies and programs the City incorporated into its SRRE, but it provided a blueprint for the development of integrated waste management operations and outreach programs in Long Beach.

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**OVERVIEW OF SYSTEM AND SYSTEM PERFORMANCE**

**BACKGROUND**

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**POLICY STATEMENT FOR CITY OF LONG BEACH INTEGRATED WASTE MANAGEMENT PROGRAM EXECUTIVE SUMMARY**

1. **Environmental Protection and Resource Conservation**
   - It is the City's policy to develop solid waste management methods that result in the achievement of maximum environmental quality and material recovery.

2. **Innovative and Preferred Waste Management Alternatives**
   - It is the City's policy, in accordance with the provisions of AB 939, to support a hierarchy of solid waste management policies that give priority to source reduction, materials reuse, and recycling in order to minimize the amount of waste to be otherwise managed.

3. **Source Reduction and Materials Recovery**
   - It is the City's policy to reduce production of waste and maximize the amount of materials recycled or recovered to the fullest extent feasible in both City operations and the community-at-large.

4. **EquiLevel Recycling Opportunities**
   - The City will ensure the provisions of compost recycling, collection, processing, and recycling programs to both residential and commercial accounts where feasible, currently collected by City crews.

5. **Compatibility with Local Conditions and Existing Private Enterprises**
   - The City will address private consideration to existing private sector, volunteer, and non-profit programs and initiatives in the development of municipal waste reduction and recycling activities.

6. **Involvement of Care and Community Groups**
   - The City will continue to encourage ongoing community involvement with the development and implementation of waste reduction/recycling programs.

7. **Provisions of Assistance and Leadership to Private Sector**
   - The City will develop policy and program initiatives to increase waste reduction/recycling activities in the commercial, institutional, and industrial sectors.

8. **Sharing of Costs in an Equitable Manner**
   - It is the City's policy that the costs for preparing and implementing the City's AB 939 Source Reduction and Recycling Element (SRRE) be distributed fairly among all waste generating sections.

   - It is the City's policy to actively promote numbers for recycled energy materials and develop opportunities for the establishment of recycling collection, processing, and end-use business in the City.

10. **Public Education and Promotion**
    - It is the City's policy to actively promote the use of all private and public sector waste reduction/recycling opportunities.
Utilizing the Policy Statement as a blueprint, the City designed, then conducted phased implementation of operations and programs with the following objectives in mind:

- Ensure compliance with AB 939 mandates
- Support the priorities of AB 939 (waste avoidance, reduction, reuse, recycling and recovery)
- Utilize SERRF for environmentally-sound management of waste that is not diverted for reuse or recycling
- Adopt a volumetric refuse service rate structure that encourages waste reduction and recycling
- Ensure collection of the broadest range of recyclable materials
- Utilize community feedback for the sustainable development of waste reduction and recycling services
- Require private refuse hauling companies operating within Long Beach to structure their rates to encourage waste reduction and recycling
- Incorporate full and fair comparisons between the economic and environmental costs of waste reduction, recycling, waste-to-energy and landfill disposal options
- Assist prospective recycling-based companies seeking to locate in Long Beach
- Employ a variety of education and outreach tools to effectively communicate the availability and benefits of waste reduction and recycling to the City's diverse population.

Within this Policy Statement “blueprint”, the following is a profile of the City’s integrated waste management programs and practices that have been enhanced (those already in place prior to 1989) and those designed and implemented in response to the mandates of AB 939 and subsequent changes in the regulatory landscape.

Policy 1: Environmental Protection and Resource Conservation

Automated collection of refuse and recyclables
ESB provides refuse collection service to 123,000 accounts. All solid waste collected is directed to SERRF (average annual tonnage of 200,000). Residential recycling is provided to these same accounts and on average 30,000 tons of recyclables is collected annually.

Street sweeping
ESB provides a minimum of weekly street sweeping through all residential and commercial corridors. More frequent sweeping (up to five nights per week) is conducted in major, high-traffic commercial areas. Approximately 170,000 curb miles and 3,000 alley miles are swept each year. In total, an average of 15,000 tons of litter is removed annually from city streets and alleys.

All collected street-sweeping debris is treated then sent to a local landfill where it is used as alternate daily cover, thus going to a beneficial use. The entire street sweeping fleet is powered by liquefied natural gas, which minimizes the impact on air quality in service areas.

Oversized Items Collection

The City offers residents two free bulky item collections each year. These collections may include up to 10 items (including furniture, electronic waste and appliances). In 2008, staff provided over 15,000 bulky item collection stops totaling nearly 3,000 tons of materials. If a customer needs more than two bulky item collections in a year, the service fee is $6.50 per item.

Alley Clean-Up Program

Introduced in 2007, ESB’s “Alley Clean-Up” program uses community service workers (CSW) to staff litter clean-up crews. Since program implementation, CSW crews have logged more than 43,500 hours, clearing a total of 1,972 tons of litter and illegally dumped items from alleys throughout Long Beach.

Illegal Dumping

ESB staff responds to about 4,500 calls per year for collection of illegally dumped materials throughout the City. In order to minimize the cost of responding to illegal dumping, Refuse Operators are instructed to collect materials that have been dumped along their route and report the address to their supervisor. The Supervisor in turn may choose to photograph the illegally dumped material in order to work with the City Prosecutor’s office to catch violators or even change property owners if evidence can be found linking the material to an address.
Camera Program
In 2004, ESB implemented a pilot program to prevent illegal dumping, utilizing surveillance cameras in alleys and targeted neighborhoods in the City. Currently, ESB utilizes twenty cameras – all rotated on a monthly basis to designated installation points throughout the City (camera locations are not publicized in order to improve their effectiveness). All installed locations have shown a decrease in illegal dumping, as well as other illegal activities (i.e. graffiti). Residents, local businesses and City Council offices may request a camera be installed in heavily impacted areas.

Scofflaw Vehicles
ESB manages the City's abandoned and scofflaw vehicle impound operation. Towing officers patrol specific beats in search of scofflaw or abandoned vehicles that need to be impounded. Currently, two vehicles are outfitted with automated license plate readers, which quickly identify vehicles with five or more outstanding parking citations. Officers then initiate an impound and tow the vehicle to the City's tow yard. This helps keep City streets free of vehicles that, in some cases, have not been moved for over 72 hours, or have hundreds, or even thousands of dollars in citation fines that are unpaid. If not impounded, these vehicles often remain immobile for long periods of time and interrupt the City's ability to provide quality street sweeping and litter abatement services.

Used Oil
The City's residential recycling program includes collection of used motor oil and oil filters. Residents are provided with free used motor oil recycling containers upon request. The City's recycling contractor collects the containers and leaves empty replacement containers. Approximately 8,000 gallons and 700 filters are collected annually.

Residents may also utilize certified drop-off centers located throughout the City. Information on curbside collection and drop-off center locations is posted on ESB's web site (www.longbeach-recycles.org).

Household Hazardous Waste Collection
Since 1989, there have been many changes to the California regulatory landscape regarding the designation of particular waste streams (universal waste, e-waste, household hazardous waste, and home-generated sharps).

To meet special diversion and handling requirements, the City is working in cooperation with the Los Angeles County Sanitation District and the Los Angeles County Department of Public Works to design, construct and operate an Environmental Depot. This Depot will include a drop-off center for the safe disposal of waste, an environmental education center and a materials recovery center (with sorting capabilities).

Bus Stop Litter Abatement
ESB replaced existing bus stop waste cans (without lids) with automated litter carts with locking lids. The City partnered with Long Beach Transit (local public transportation provider) in this effort to reduce litter surrounding bus stops. The new automated carts are larger than containers used in the past and are more effective at minimizing litter. In addition, the locking mechanism discourages scavengers. Through this partnership, Long Beach Transit provided the funding for purchase of a customized sideloading refuse truck, and ESB allocates one automated Refuse Operator to service the automated carts.

No Junk Mail/No Handbill Advertisements
As part of the Litter-free Long Beach Campaign, ESB introduced two programs: “No Junk Mail” and “Stop Advertisements”. Residents and businesses can request a packet that includes postcards pre-addressed to many of the larger mailing houses around the country. These postcards indicate the addressee’s desire to be removed from junk mail mailing lists. By law, these companies must comply with the request. Over 15,000 packets have been distributed.

The “Stop Advertisements” program was developed to address the problem of unwanted handbills. Advertisement flyers, menus and other paper promotional materials are periodically left on peoples' doors or gates promoting a particular business, creating litter in an entire neighborhood in one day. If a business chooses to leave material, the resident can then report them anonymously through the litterfreeLB.org web site. This generates a form letter that is mailed to the business advising them to stop a practice that is disturbing area residents. To date nearly 11,000 signs have been distributed to residents.

Policy 2: Hierarchy of Preferred Waste Management Alternatives
All of the City's integrated waste management programs have been designed within the hierarchy of waste management designated in AB 939:

1. Waste Reduction
2. Materials reuse
3. Recycling
4. Waste-to-energy transformation (SERRF)
5. Landfill disposal
**Policy 3: Maximum Source Reduction and Materials Recovery**

**Volumetric Rates**

The City's rates are based on container size and frequency of collection. The standard automated cart capacity is 95 gallons. Long Beach residents have the option of requesting a smaller cart for a reduced service rate. Additional refuse carts come with additional service charges. However, ESB will provide additional recycling carts for free to encourage source reduction and recycling.

**Recycling at City Facilities**

In addition to residential recycling, ESB has developed recycling programs at City Hall, Long Beach Police Department Headquarters, Emergency 911 Center, Long Beach Fire Stations and the Public Works Operations Center.

**Policy 4: Equivalent Recycling Opportunities**

**Multi-Family Dwellings and Commercial Recycling**

Since 2000, ESB has provided incentives for private refuse haulers to offer recycling to the City accounts they service. The more material a private hauling company recycles, the less they must pay to operate within the City.

In 2008, the City Council adopted an ordinance that mandates multi-family recycling in Long Beach. This action ensures equal availability of recycling collection service for all residents of Long Beach. Private refuse hauling companies are required to provide recycling services to all of their multi-family accounts and must recycle the same materials that the City’s existing residential recycling program currently targets. This will impact approximately 55,000 units throughout the City. Once multi-family recycling is fully implemented, private haulers will be required to provide this same service to their business accounts.

It is interesting to note that by implementing these requirements in phases, many private haulers are already offering recycling services to their business accounts simply to ensure full-service days for their truck routes.

**Special Event Recycling**

ESB provides technical assistance and free special event recycling and refuse containers for annual, large-attendance events, such as the Toyota Grand Prix Race, Martin Luther King Jr. Parade and the Cambodian New Year Parade.

**Household Hazardous Waste and E-waste Roundups**

Since 1990, the City has offered a myriad of programs for the collection and recycling of special waste, providing several convenient options for residents.

- ESB sponsors quarterly collection events where residents can drop off e-waste for free. The collection event in November 2008 collected over 16,000 pounds of e-waste.
- Residents are provided free curbside pickup of e-waste and large appliances twice annually. In 2008, over 1,400 e-waste and 550 curbside appliance collections were completed, totaling nearly 40,000 pounds.
- ESB publicizes alternative avenues for responsible e-waste disposal on its programs and services web site (longbeach-recycles.org), including a list of cell phone recycling locations within the City and the California waste exchange program (Calmax), where residents can trade or give away unwanted items, including e-waste, for free.
- In 2008, almost 69,000 pounds of e-waste was collected and responsibly recycled by the City. To ensure responsible recycling of e-waste, the City’s e-waste recycler has signed on to the Basel Action Network Pledge of Stewardship and submits “Certificates of Recycling” to the State of California to validate that e-waste collected in Long Beach is recycled in a safe and responsible manner.

**Policy 5: Compatibility with Local Conditions and Existing Private Enterprises**

**Private Hauler Permitting and Reporting Requirements**

Sixteen private haulers are currently permitted to operate within the City of Long Beach. The haulers are required to provide monthly AB 939 reports to the City, showing their recycling diversion.

**Recycling Incentive Fees**

The City charges private haulers a recycling incentive fee based on a sliding scale that is determined by their total diverted tonnage and calculated on their gross receipts. This encourages the private haulers to promote their recycling programs.

**California Beverage Container Redemption Centers**

ESB partners with the California Department of Conservation (DOC) to promote the DOC’s nine redemption centers located in the City. Residents have the option of recycling their redemption-value beverage containers, rather than placing the containers in their residential recycling cart. Currently, redemption values vary from five to ten cents per beverage container (depending on size).
Conservation Corps of Long Beach (CCLB)
ESB partners with the CCLB to provide recycling services to small local businesses that do not generate enough recyclables to secure the services of large, private recycling providers. ESB issues an annual contract to the CCLB to provide recycling services at City Hall.

Policy 6: Involvement of Civic and Community Groups
Long Beach Businesses and Business Associations
As part of its Litter-free Long Beach Campaign, ESB sponsors the “No Litter Zone” Program to encourage local businesses to keep the streets and alleys surrounding their business litter-free. Currently, 272 local businesses participate in the program.

Local Food Banks
In 2007, ESB secured food reuse grant funding from California. ESB partnered with Food Finders (local food bank) to acquire 536,965 pounds of donated food from local markets, restaurants and the Long Beach Convention Center.

Neighborhood Litter Cleanups
ESB partners with City Council offices and 15 different neighborhood associations to sponsor monthly neighborhood litter clean-up events throughout the City. Since 2005, a total of 141 litter clean-ups have been sponsored, involving 4,899 neighborhood volunteers. A total of 622 tons of litter, debris and illegally dumped items have been collected.

Policy 7: Provision of Assistance and Leadership to Private Sector
Large Venue Technical Assistance
To support the City’s AB 939 diversion requirements, ESB worked with the Long Beach Convention Center and the Long Beach Airport to develop and implement on-site recycling programs. ESB purchased cardboard balers and custom recycling containers for both venues and provided technical assistance and employee training.

Construction and Demolition Debris Diversion
ESB has implemented a C&D recycling program that requires certain demolition and/or construction projects to divert at least 60% of waste from landfills through recycling, salvage or deconstruction. This program provides financial incentives to contractors and builders that take proactive measures to reduce, reuse and recycle.

Policy 8: Sharing of Costs in an Equitable Manner
ESB prides itself on operating a financially sustainable program. Collection of refuse and recycling is supported fully by a self-supporting enterprise fund which is maintained with a healthy reserve to avoid large impacts to residents. For certain programs (particularly outreach and education), ESB secures grant funds from California state agencies. Private haulers are imposed fees to encourage recycling and provide financial support for the City’s other waste diversion programs.

Policy 9: Market Expansion for Recycled Materials and Economic Development of Recycling Industries
Long Beach Recycling Market Development Zone
In 1992, California granted status to Long Beach as the first designated Recycling Market Development Zone (RMDZ). The purpose of a RMDZ is to provide assistance (low-interest loans, tax credits, employee training, etc.) to recycling-based companies that utilize recycled materials in their manufacturing. Materials used by businesses located within the Long Beach RMDZ include: asphalt, concrete, cinder blocks, used and retreaded tires, scrap wood pallets, used oil filters and plastic milk, juice and water bottles.

Environmentally Preferable Purchasing (EPP)
In 2003, the Long Beach City Council adopted an environmentally preferable purchasing policy. In 2008, the City’s Purchasing Division implemented two pilot programs: Green Cleaning Supplies and Green Office Supply purchasing programs. Based upon the results of these two pilot programs, the Purchasing Division recommended to the City Council mandatory product order requirements (cleaning supplies and office supplies) for all City departments.

Policy 10: Public Education and Promotion
Since 1990, ESB has devoted substantial resources toward public outreach (print ads, radio spots, bus shelter signs) and the development of education and marketing materials (brochures, newsletters, annual Eco Guide, special event flyers). ESB developed and posted online two interactive web sites:

www.longbeach-recycles.org  
(ESB programs and services information and promotion)

www.litterfreeLB.org  
(Litter-free Long Beach Campaign information and promotion)
Long Beach is California's fifth largest city with a current population of 492,912. The City has one of the most ethnically and culturally diverse communities in the United States, including the largest Cambodian population outside Cambodia.

Equally diverse is the variety of land use and properties within City boundaries. Residential neighborhoods, recreational parks and beaches, wetlands and waterways, business corridors, a port, airport, and large-scale industrial operations create a patchwork that offer numerous operational and service challenges.

This map shows the City of Long Beach divided by service delivery areas. When staff reengineerd the City’s collection methods, all routing was done geographically so that all of our resources including staff and vehicles were working in the same area together each day. This helped minimize the impact of vehicle breakdowns or shortage of staff due to illness, etc.

This rerouting effort also allowed staff to eliminate the conflict created between refuse collection and street sweeping on the same day. Often, refuse carts left curbside for collection impact a sweeper's ability to provide a quality cleaning of the curbs. By ensuring that these services are provided on different days, it allowed for the sweeping operation to improve the quality of their service. The City's Refuse Division currently provides service to 123,000 accounts.

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### STATS

- Population: 492,912
- 123,000 accounts
- 73 City Refuse Vehicles
- 23 Waste Management Recycling Vehicles
- 6 Operating Days
- 201,800 tons of solid waste collected annually
- 29,940 tons of recyclables collected annually
- 20 City Street Sweepers
- 39 Parking Enforcement Vehicles
- 189 ESB Field Services Employees
Green Fleet
The City’s Fleet was recently recognized as the “No.1 Government Fleet in North America” in a competition sponsored by the U.S. Department of Energy. Over 60% of the City trash trucks and 100% of the street sweeping fleet operate on clean burning liquefied natural gas. The remaining trash trucks all have state of the art particulate traps to reduce their impact on air quality. The entire refuse collection fleet will be operating with LNG by the end of 2010. ESB maintains its own 32,000 gallon LNG storage and fueling system to support the refuse and street sweeping operations.

Global Positioning System
For the past 8 years, ESB has utilized a unique GPS system to monitor truck activity and develop more effective and efficient collection routes. The GPS systems transmit data via the City’s radio system, so cell phone charges are not incurred on a monthly basis. Although the initial capital investment for the system was slightly higher than traditional GP systems, the ongoing cost to operate the system is minimal. The system also allows managers to verify service issues, effectively deploy resources and more closely monitor the ESB refuse collection, street sweeping and parking enforcement vehicles.

TAMS System
ESB’s disposal reporting system provides real-time information to supervisors on the amount of solid waste a vehicle has deposited at the City waste-to-energy facility as well as the vehicle’s arrival and departure time. This allows supervisors to closely monitor the progress on each collection route and to make adjustments immediately to balance workloads and ensure all accounts are serviced as scheduled.

The City’s Fleet was recently recognized as the “No.1 Government Fleet in North America” in a competition sponsored by the U.S. Department of Energy.

ESB Customer Service Center
The customer service center handles over 70,000 calls each year. Customer service representatives can access account data in real time, adjust rates, service levels, order replacement or additional carts, arrange special collections all from a single home page. Service requests are automatically routed to the responsible supervisor so the request can be implemented the very next day. In addition, customers can request the same services via ESB’s interactive web site (www.longbeach-recycles.org). This real time capability provides an enhanced level of service for customers and keeps supervisors informed of any changes or special requirements.

Annual Resident Surveys
Since 1990, ESB has conducted annual resident surveys to assess the level of satisfaction with its integrated waste management programs and service operations. This survey vehicle was first included in ESB’s annual WRAP newsletter (1990 – 2002). In 2003, ESB developed the Eco Guide to replace the WRAP newsletter. In 2008, a total of 3,357 residents completed their Eco Guide surveys, with 82% of respondents ranking ESB’s services as good or excellent.

ESB Web Sites
ESB’s programs and services web site (www.longbeach-recycles.org) features an online version of the Eco Guide Survey. Both the longbeach-recycles.org and the litterfreeLB.org web sites offer residents the opportunity to provide feedback online.
When the City adopted its Integrated Waste Management Policy Statement, Long Beach committed itself to the development of programs and practices that contribute to environmental protection through resource conservation, materials recovery, market expansion for recycled materials, and economic development of recycling-based industries.

Long Beach was the first large urban city to reach California’s mandatory diversion and recycling rate of 50 percent. The City’s solid waste diversion rate has progressed steadily from its baseline (1990) rate of 12 percent to its current rate of 69 percent.

Recent legislation changed reporting requirements for AB 939. Thus, the City’s diversion rates for 2007 and 2008 have not yet been certified by the state of California.

Since AB 939 became law, there have been numerous changes in the regulatory landscape.

- SCAQMD Rules 1186.1, 1193 and 1196
- AB 2176 (large venue and event recycling programs)
- AB 32 (CA Global Warming Act of 2006)
- SB 1016 (AB 939 reporting)
- SB 20 (e-waste)
- SB 1374 (C&D debris)
- SB 876 (used tires)
- SB 1362 (sharps waste)
- AB 2449 (plastic bag recycling)
- AB 109 (medical waste)
- AB 2641 (household hazardous waste)

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**AWARDS**

**Solid Waste Association of North America 2002 Gold Excellence Award for Public Education**

**Solid Waste Association of North America 2007 Silver Excellence Award for Litter-free Long Beach Campaign**

**California Resource Recovery Association 1992 Outstanding Achievement – “Yes I Can Recycling Video**

**1991 Elbee Award Judges Choice - "Yes I Can" Video**

**1990 Emmy Nomination - "Yes I Can" Video**

**2005 and 2006 SustainLane Sustainable Communities Study Ranked Long Beach #1 in Solid Waste Diversion in U.S.**
The City has five service and operational goals for its Integrated Waste Management System:

- Develop a sustainable solid waste management system that is designed to support source reduction, material reuse and recycling.
- Provide convenient and cost-effective services for residents.
- Continue to exceed AB 939 diversion requirements.
- Utilize education and outreach tools to effectively communicate the benefits of waste reduction and recycling.
- Promote market expansion for recycled materials and economic development of recycling industries.

The City has made significant progress in achieving these goals and expanding services:

- SERRF generates enough electricity to power 35,000 homes annually, and reduces solid waste volume by 80%, with the resulting ash being used as road-base at the Puente Hills Landfill.
- Several fiscal management tools, including a ten-year proforma, a strategic business plan and a capital needs assessment, are used to project operating expenses and create a financial forecast several years out.
- Long Beach residential refuse rates are 11% lower than the cost of living increases over the last 14 years.
- Long Beach has secured grants and other funding for the construction of a permanent special waste drop-off facility (Environmental Depot), scheduled to begin operation in 2010. Residents of Long Beach and designated adjoining jurisdictions in Los Angeles County will have free access to the Depot.
- The City’s current diversion rate of 69% is the second highest in the nation among large cities.
- The Long Beach Recycling Market Development Zone (RMDZ) program provides technical and financial services to local businesses that utilize approximately 33,000 tons of recyclables as feedstock in manufacturing.
- Through its comprehensive, multi-lingual and multi-cultural public outreach and education program, ESB effectively communicates to one of the most diverse populations in the country. The program has developed a multiple series of educational and marketing materials (English, Spanish and Khmer) for all of ESB’s operations and services.

Fiscal management tools, including a ten-year proforma, a strategic business plan and a capital needs assessment, are used to forecast.
The City of Long Beach has various solid waste and recycling programs administered by the Environmental Services Bureau (ESB). These programs are funded by an Enterprise Fund, which is fully self-supporting. Staff conducts ongoing analysis of each program to ensure cost, production and overall efficiency. The following programs demonstrate the overall cost effectiveness of the City’s services to the community:

**Refuse Collection Program**
- The City provides refuse service to 123,000 (residential and commercial accounts combined) and collects over 201,000 tons of refuse annually.
- The City of Long Beach tied for number one in Solid Waste Diversion among the 50 largest cities across the United States according to rankings prepared by SustainLane Government, an on-line media company that prepares a nationwide annual benchmark study on urban sustainability.
- The City puts its refuse to beneficial use at SERRF.
- In 2003, refuse routes were re-engineered to reduce the amount of time and miles driven. This resulted in a 15% increase in productivity when measuring in terms of tons collected per labor hour. This effort turned an annual $2 million deficit into a $2.5 million surplus.
- Between 2003 and 2008, the City’s cost per refuse account increased only 17%. The average cost increase was 37% for jurisdictions measured by International City/County Management Association (ICMA).
- The City’s rates are volume based. A recent survey of neighboring cities that provide City refuse service reveals Long Beach has the lowest refuse rates for single-family residence.
- The City offers discount refuse collection rates for senior citizens and the disabled. Roll out service is also provided for free or at a discounted rate.
- Due to the reroute, the waiting period for special bulky item pick-ups decreased from an average wait time of three weeks to the next collection day as a result of system efficiency and lowered personnel costs.
- Due to the reroute, the backlog for requesting replacements for refuse carts was decreased from a waiting period of six or seven weeks down to the next collection day resulting in lower personnel costs.

**Recycling Program**
- ESB services approximately 118,000 accounts. 30,000 tons are collected annually.
- Between 2005 and 2008, the City’s cost per recycling account increased only 4.3%. The average cost increase was 9.5% for jurisdictions measured by ICMA.
- In 2004, ESB replaced 18-gallon bins with 96 or 64 gallon rolling carts and expanded its recycling services to all City-serviced accounts including larger apartment buildings and businesses. This allowed more customers to recycle and decreased the amount of refuse being generated. Increased cart capacity resulted in increased tonnage and revenue from the sale of recyclables.
- In 2007, the recycling program was expanded to include plastics marked with number 5 through 7 from the previously allowed 1 through 4. This helped save in refuse disposal costs.

The City of Long Beach has been awarded various grants for recycling programs, including:
- $129,000 from the Department of Conservation (DOC) for beverage container recycling
- $36,000 from the California Integrated Waste Management Board (CIWMB) for tire recycling
- $105,000 from the CIWMB for motor oil recycling
- $400,000 from the CIWMB to help plan and design a Household Hazardous Waste (HHW) Facility
- $50,000 from the CIWMB for Food Finders

**Alley Clean Up Program**
The Alley Clean-up program saves in personnel expenses by utilizing community service workers rather than City employees. Since the program was established, 43,536 court-referral hours have been served and 1,973 tons of litter has been removed.
The City’s Integrated Waste Management System is financed by a Refuse and Recycling Fund – a self-sustaining enterprise fund operated and maintained like a business. The primary source of revenue for the Fund is from refuse and recycling service fees, which account for approximately 90 percent of total revenues. This fund also receives grant monies from the California agencies, revenues from the sale of recyclables collected through the City’s residential recycling program, fees paid by the City’s licensed private refuse haulers for AB939 compliance, and interest income.

It is important to note that Proposition 218 was passed by California voters in 1996. Proposition 218 requires voter approval prior to imposition or increase of general taxes, assessments, and certain user fees. Because of this, all revenue generated by refuse and recycling fees is used for services and programs directly related to those program areas and for the benefit of the rate payer.

To ensure that ESB provides refuse and recycling services to residents in a timely and cost effective manner, several planning tools are used: an annual budget analysis, a long-range financial forecast and a determination of capital planning needs. All of these tools incorporate the consideration of many variables, including economic climate and many different local jurisdiction issues.

Annual budget analysis: prepared to determine the next budget year’s needs and requirements. A proposed budget is prepared as part of the budget for Department of Public Works. This budget has to be approved by the City Manager, then Mayor and City Council. All requests for expenditures are justified by need and available funding.

Business Plan: A ten-year business plan is maintained and updated each fiscal year. This is an internal document that is reviewed prior to any expenditure and programmatic decisions. It addresses all operational, jurisdictional and economic issues. The Refuse and Recycling Fund has accumulated a significant fund balance in recent years. Much of this is due to the route optimization plan that ESB initiated in 2002.

To ensure that future capital needs are met, reserve accounts are maintained to provide full funding of future capital needs (e.g. vehicle, dumpster, and refuse, recycling and litter cart replacement).

There are many factors and issues that determine the use of these planning and forecasting methods:

Operational Issues
The City has been notified that the Puente Hills landfill is scheduled for closure on October 1, 2013 for disposal of solid waste, including the ash generated at SERRF and sent to Puente Hills landfill for beneficial use. Three tons of solid waste converts to approximately one ton of ash. Currently, SERRF processes 1,290 tons of solid waste and generates 430 tons of ash each day. The closure of this local landfill will result in this ash being transported elsewhere for beneficial use, thus incurring higher transportation costs.

Economic Climate
Due to the current economy, the volume of refuse and recycling tonnage has decreased. The reduction of refuse tonnage will result in lower disposal fees, but the reduction in recycling tonnage may have an impact on the City’s diversion rate. This reduction is due in part to the economic downturn during which people are purchasing and disposing less materials, but also due to an increase in scavenging. As a result, ESB is working with the Police Department to better manage scavenging of recyclables.

It is anticipated that in FY 2014, tipping fees will increase to $70.00 or more per ton (due to the closure of the Puente Hills landfill).

Legislation
Ongoing regulatory changes (regional, state and federal) have an impact on long-term financial planning.

■ Diversion Requirements
  AB939 mandated a 50% diversion rate. The City has achieved a diversion rate of 69%. AB 939 specified a calculation method of waste diversion based on reporting year vs. the baseline year (1990).

  Recently enacted SB 1016 changed the waste diversion calculation to a per capita figure (pounds per person). The impact on this is yet to be determined (including what type of public outreach and education will be required to explain this new system of measurement).

  Pending legislation includes AB 479 which could increase diversion mandates to 60% by January 1, 2015 and to 75% by January 1, 2020.

■ Disposal Requirements for Special Waste
  California law prohibits landfill disposal of special waste (universal waste, e-waste, household hazardous waste, and home-generated sharps). The City plans to design and construct a permanent drop-off center for special waste (Environmental Depot). Costs related to the Depot have been included in the long-range financial forecast.

Local Jurisdictional Issues
As a result of two nexus studies commissioned by the City, nexus’s were established for street sweeping and street maintenance. This resulted in $1.4 million in new, on-going charges to support these endeavors.
ESB has adopted an interest-based management style that encourages input from all levels of the organization. Refuse Operators, Motor Sweeper Operators, Parking Control Checkers, Investigators, Supervisors and Managers meet on a regular basis to present their respective interests and work toward developing common goals that are in line with those established by the City Council based on feedback from residents. ESB uses the following tools to reward quality work:

**Productivity Incentive Program:** Refuse Operators are eligible for financial incentives if they collect additional amounts of trash within their regular work day. In order to receive the incentive, employees must collect the additional trash without being involved in vehicle accidents, incurring injuries or overloading their vehicles. Many employees take advantage of this opportunity and make as much as $300 per week in incentives. In return, the City of Long Beach benefits from this incentive or “gainsharing” plan by being able to maintain a smaller staff and vehicle inventory.

**Refuse Operator Certification Program:** Currently, ESB is implementing a certification program for Refuse Operators. A committee comprised of management, supervisors and staff developed a curriculum to train “super” employees. The certification program involves a combination of field training and classroom education.

Field training includes the ability to operate a refuse rearloader, frontloader, sideloader, and rolloff truck, as well as a street sweeping vehicle. Classroom sessions focus on a variety of topics, including customer service, conflict resolution, solid waste management techniques, AB939 compliance and collection routing.

Employees who successfully complete the program receive a salary supplement in the form of skill pay. Once certified, these employees are then used as trainers for other staff.

**4/10 Work Week:** A majority of ESB’s operations (automated Refuse Operators, Motor Sweeper Operators and Parking Control Checkers) are on 4/10 work schedules. The 4/10 schedule enhances service delivery while providing additional days off for employees.

**Monthly Safety Drawings:** Each month, any ESB employee that has not had a lost-time injury has their name placed into a drawing for a prize. Each month the prize pool begins with $500. For every lost-time injury that occurs, $50 is deducted from the prize pool. If there are more than three lost time injuries, there is no drawing for that month. ESB has realized a 68% reduction in lost-time injuries since the inception of the program.

**Perfect Attendance Award:** Employees with perfect attendance receive a reward. Past rewards have included: ESB logo windbreakers, golf shirts, duffel bags, emergency car kits and retail store gift cards.

**“Ham and Eggs” for Safety:** At the end of each calendar year, managers and supervisors have a “Ham and Eggs for Safety” breakfast for staff. Staff from other City departments are also invited, giving ESB staff an opportunity to meet and greet the people that help us accomplish our daily goals. ESB Managers and Supervisors prepare meals and City Council Members have been known to come by and serve breakfast.

The effectiveness of these programs is assessed by measures such as: reduction in workplace injuries; amount of individuals taking advantage of the different incentive programs; number of people completing the certification program; and turnover rate of staff (which is very low).
Effective change management requires that the interest of all stakeholders be considered while developing a means to reach a targeted result. ESB’s interest-based management approach incorporates this philosophy into all of its change management processes.

In 2002, the operation was facing financial challenges that were threatening to leave the operation in a fiscal bind. The City had not raised refuse collection rates since 1995 and financial reserves were quickly diminishing. It was determined that from 1995 to 2002, the cost-of-living index had increased about 16%, while collection rates had been frozen. Rather than simply raise rates, staff decided to meet with stakeholders such as other City-managed utilities, our recycling contractor, the local apartment owners association, elected officials, customers and staff. While everyone agreed that requesting a rate increase after seven years of flat rates was not unreasonable, there was concern as to how the overall public would react.

Staff responded by developing a service plan to optimize the refuse and recycling collection services provided to the residents and businesses of Long Beach. Up until 2002, ESB’s approach to service routing was to deploy refuse and recycling vehicles in all parts of the City every day. The service optimization plan called for three major changes:

- **Geographical consolidation of routes**
- **Changing days of service for 80% of customer base**
- **Development of an employee incentive-pay program**

While initially, many residents were displeased about changing their collection days, staff’s proactive outreach efforts and the education of elected officials, community activists and neighborhood association representatives prior to implementation had a significant impact. The reroute was completed with minimal resistance and significant returns. In the first year, the operation achieved a 15% increase in productivity as measured by tons collected per man hour, and turned an operation that had an annual $2 million deficit to a $2.5 million surplus the first year alone.

In addition to our rerouting, City Council approved a nominal 7% refuse rate increase in October of 2002 (less than half of the CPI increase the economy had experienced since the previous rate increase in 1995). This increase was considered minimal and passed with little objection because staff had demonstrated that they were willing to operate differently to minimize the financial impact on customers. To date, the City lauds this change as a successful example of public sector ingenuity and working with stakeholders and the public to achieve common goals.
COMMUNITY RELATIONS
The City has been successful in its community outreach efforts because it has embraced the challenge of delivering environmental messages that communicate on a personal level and incorporate multi-lingual and multi-cultural messages. It has invested substantial time and resources into the design and production of marketing materials that are creative and engaging, and education programs that evolve based on feedback from its residents, schools and local businesses.

The City’s compliance with the mandates of AB 939 involved deploying a broad and substantial array of marketing materials and developing education and outreach programs that were sustainable and targeted to specific stakeholders. The following are examples of the City’s efforts between 1990 and 2000:

- Developed and distributed an annual WRAP newsletter to residents focused on source reduction, recycling and composting
- Expanded the promotion of holiday tree, telephone book, household hazardous waste and other special recycling events
- Distributed informational materials to on how to participate in the City’s new residential recycling program
- Completed construction of the Traveling Recycling Education Center (TREC) for outreach to LBUSD elementary schools
- Distributed to City-serviced multi-family units a green waste reduction brochure
- Updated and enhanced waste management slide show with information about source reduction, recycling and green waste recovery methods (for presentations to neighborhood and community organizations)
- Developed outreach materials to large multi-family units (11+ units) providing guidelines and helpful tips on how to establish waste reduction and recycling programs for their properties
- Developed and presented a series of free workshops for local businesses on how to implement source reduction, recycling, green waste recovery, and recycled-content procurement programs
- Developed outreach materials for large generators of green waste (universities and colleges, parks and golf courses)
- Partnered with the City’s Nature Center to provide composting education classes
- Worked with the LBUSD to prepare enhancements to curriculum segments and resource materials
- Conducted a series of training workshops for RMDZ administrators throughout California
- Launched an interactive Web site for Long Beach residents to use

Between 1990 and 2000, the City surveyed its residents annually to assess their satisfaction level with and perception of its integrated waste management services. The survey was incorporated into its annual environmental newsletter (WRAP).

Since AB 939 was signed into law in 1989, there have been many changes to the regulatory landscape in California, particularly changes in waste stream designations. In addition, there have been substantial advances within the solid waste management and recycling and reprocessing industries. The City’s integrated solid waste management practices and programs have all been structured to evolve based on feedback from its residents, local businesses, City Council and neighborhood organizations.
The following is a summary of outreach and education efforts developed and implemented since 2000 in order to support the many changes and enhancements to the City’s integrated waste management services and operations.

**Refuse Collection**
- Comprehensive outreach campaign to residents to explain and promote the citywide collection re-route
- Direct mail, flyers and utility bill inserts to support Operation Clean Sweep (alley and dumped items cleanups)

**Recycling**
- Comprehensive outreach campaign to promote pilot program for automated residential recycling collection; follow-up campaign to promote citywide rollout of program
- Re-design and enhancements to www.longbeach-recycles.org web site to provide information to residents on periodic expansions of types of materials accepted for recycling (e.g. types of beverage containers, plastics coded 5-7, aerosol containers)
- Outreach to promote periodic roundup events for special waste (used tires, household hazardous waste, e-waste)

**Green Waste**
- Promoted monthly City-sponsored composting workshops for residents, featuring three different types of composting units available for purchase at-cost
- Periodic presentations to neighborhood and community organizations

**RMDZ**
- Developed and conducted quarterly statewide training workshops for state regulatory staff and RMDZ administrators

**Litter Reduction**
- Designed and implemented the Litter-free Long Beach Campaign (extensive and targeted outreach to residents, local businesses, LBUSD schools and neighborhood and community organizations)
- Developed and posted online a Campaign-specific web site(www.litterfreeLB.org)
The City has one of the most ethnically and culturally diverse communities in the nation, including the largest Cambodian population outside of Cambodia. ESB promotes the City's System repertoire of operations and services by using creative and engaging public education and outreach campaigns that communicate on a personal level and incorporate multi-lingual (English, Spanish and Khmer) and multi-cultural messages, while retaining consistent and recognizable themes of environmental protection and personal responsibility.