



**City of Berkeley  
Solid Waste Management Division  
Department of Public Works  
Berkeley, California**



**Profile**

The City of Berkeley, located on the east shore of San Francisco Bay, offers its 107,800 residents one of California's most interesting and diverse living areas. It is a city that is known for its ability to attract strong individuals with energy, tolerance, and flexibility, and for its ability to encompass change without sacrificing its essential character or quality of life.

The public marina, bay views, international shops and restaurants, and the University of California at Berkeley are but a few of its attractions. Its beautiful setting, pleasant climate, and recreational and cultural activities offer a wide variety of leisure opportunities.

It is also home to other organizations and companies with similar goals, such as Bayer Corporation's Worldwide Biotechnology Center and Biological Products manufacturing facility, which has recently been certified to the ISO 14001 standard.

**Fenceline**

The City of Berkeley chose the Solid Waste Management Division as a whole to implement the EMS. We believe it is feasible because much of the ground-work for the systems in place have been completed as part of the APWA process. There are 102 employees at the Solid Waste Management Division and approximately 1/4 of them will be involved in implementing new procedures.

The Solid Waste Management Division is Berkeley's municipal waste collection and disposal facility, operating under the Department of Public Works. We have recently undergone a rigorous process to become accredited by the American Public Works Association (APWA) and were successful. Our well-documented internal procedures were recommended by the APWA for best practices.

While it is our belief that everything we do is for the environment, we have learned that there is room for improvement in how we do our work. Our goal is to be certain we're making environmentally friendly decisions and purchases and that the process is part of our organization's culture.

We collect curbside plant debris, refuse, and recyclables for approximately 40,000 residential and/or commercial properties. We operate a transfer station, an oil-recycling depot, and have a contract with Community Conservation Centers to operate a drop-off and buy-back recycling center on site.

## **Core Team**

The core team is made up of several levels of employees of the division with the EMS Project Manager and the EMS Champion. One core team member representing Refuse Truck Drivers, Refuse Workers and Service Employees International Union-Local 790 Maintenance Chapter, one member representing Refuse Supervisors, and two members representing Senior Refuse Supervisors. The Project Manager brought experience from administration and the EMS Champion is the Division Manager and decision maker.

## **Key Drivers for Adopting an EMS**

The City of Berkeley identified several key factors that led to the decision to design and implement an EMS within the Solid Waste Management Division. These factors include:

- Improving employees' participation in the facility's environmental performance
- Improving overall environmental performance
- EMS is consistent with the City's overall environmental principles
- May be valuable marketing tool
- May be valuable public relations tool
- May reduce costs
- May provide competitive advantage

## **Significant Aspects & Impacts**

We surveyed employees from the entire facility. We created process diagrams for each service or program that we did not already have on file and began to identify the environmental impacts our facility has or may have in the future. We found 13 significant aspects related to our operation and ranked them using criteria we developed.

The criteria we chose are: worker health & safety, regulatory compliance, natural resource impact, probable negative environmental impact, public perception (how the public views us), and cost to implement changes. From this list, we developed objectives and targets designed to lessen our impact on the environment for four items.

## **Targets & Objectives**

Target Area: *Public Dumping*

- Eliminate 98 percent of dust particulates
- Reduce kilowatt hours of electricity used annually (save 250Kwh)
- Improve control of hazardous materials being brought on site by 75%

Target Area: *Recycling Collection*

- Increase & improve consumer participation by adding three mailings per year

Target Area: *Refuse Collection*

-Reduce illegal/hazardous materials placed into refuse containers by 10%

Target Area: *Transportation*

-Reduce fuel consumption by 2%

-Decrease fuel emissions TBD

-Reduce # of days pickup scheduled for accounts with multiple pick-ups per week by 5%

Target Area: *Wash Rack*

-Reduce Water Consumption by 25%

### **Benefits of Adopting an EMS**

As we began implementing our environmental management system, we identified serious conditions in need of immediate mitigation. Accidents are common in our industry. While we chose not to incorporate occupational health and safety into our EMS, we found that we were able to meet some of our Cal-OSHA legal requirements incidentally through the documentation of our employee training procedures.



Our efforts at reducing air pollution through the use of bio-diesel in our fleet resulted in the reduction of air pollution for the entire City of Berkeley diesel burning fleet. This included not only the refuse collection fleet, but also buses, and other heavy equipment.

We've gained respect and better cooperation from our Department Director 's staff for budget changes and purchase requests related to environmental improvements.

Members of the core team have enjoyed the unexpected benefit of being consulted by other City of Berkeley departments for input on the City's Mission Statement for its environmental language content, contributing information on an item to the City Council to encourage the City to fund sustainability initiatives and numerous calls from colleagues in the Solid Waste industry from all over the United States inquiring about our environmental management system.

## Costs

Costs to develop and implement our EMS were largely limited to staff time. Nearly all costs for new equipment were provided for in our existing budget. An example is the purchase of 5 new solid waste collection vehicles that burn Clean Natural Gas (CNG). The purchase was timed in conjunction with our vehicle replacement cycle and is a normal part of our operating expense. The additional cost of \$50,000 per vehicle that CNG tanks incur, were completely offset by a grant from the Alameda County Waste Management Authority.



Two years of staff time devoted to EMS development and implementation cost \$93,266.

Environmental Management Representative: 1,743 hours

EMS Core Team: 1,624 hours

Other: 446 hours

Total internal time devoted amounted to 3,813 hours.

## Next Steps

The Solid Waste Management Division is now more dedicated than ever to its own environmental performance improvements. We have revised our job descriptions to reflect this new ethic. They will require each employee to learn the environmental impact of his/her job and act with responsibility. We have spoken with other agencies and encouraged them to follow our lead and hope to continue doing so.

The Solid Waste Management Division continues to make progress toward hitting its targets and following its objectives. Supervisors are busy rerouting to reduce the number of miles driven daily. A new environmental look has been chosen for our new CNG trucks. A new dust suppression system has been installed in the Transfer Station and we are daily seeking ways to improve.