# Using Technology to Reorganize Trash Collection Routes

The city of **San Diego, California** (1,223,400), uses global positioning system (GPS) and other technology to reroute its garbage and recycling trucks. The new routes reduce overtime costs and ensure that all drivers have equivalent routes.

### Leadership/staffing

The city's environmental services department created a new position to oversee the rerouting project.

### Timeline

Preparation for implementing the new routes took two years. During this period, the GPS was installed and new routes were planned using modeling software. The new routes began on June 7, 2004.

### Budget/funding

Rerouting saved approximately $700,000 from the city's general fund in its first year of operation, and it is estimated it will save $824,743 in the second year and $1,000,000 per year thereafter.

### Program description

The city used its new GPS in combination with its geographic information system (GIS) and modeling software to create new routes. The new routes consolidated previously scattered trash pickups into compact geographic areas. The city is now divided into five zones, and all of the city's trash trucks concentrate on the same zone on the same weekday. Because the trucks are in the same region, a problem with one trash truck can be solved quickly by another truck coming in to take over. Drivers who are assigned a more labor-intensive route on one day are assigned an easier route on another day, so that the routes of all drivers are equivalent.

At first, the environmental services department provided very specific instructions to drivers about exactly which trash cans they were to pick up and in

which order. But, in response to driver demands, the department now assigns them certain cans to pick up and allows drivers to determine the order in which they will complete their tasks, as long as the assignment is completed within 7.5 hours.

Using the new system, supervisors can create maps with flags on problem areas (such as a home with trash cans that are not visible from the street). Drivers take printouts of these maps with them on their routes.

Although the union was initially concerned about the big-brother aspects of being able to track each trash truck, its concerns were soon resolved. First, supervisors were instructed to follow the movements of trash trucks only if a concern had been raised. Second, the city uses the system to respond to customer complaints; for example, if a customer complains that a trash truck was speeding, the city can check whether this actually occurred.

### Results

Most of the cost savings have been generated by eliminating 10–15 collection trucks from the operating fleet of 185 and decreasing the miles traveled by the collection trucks by 900 miles per day (approximately 235,000 miles per year). As a result of reduced mileage and fuel consumption, nitrous oxide emissions decreased by an estimated 39.8 lbs. per day (5.2 tons per year), carbon dioxide emissions by 4.1 tons per day (1,068 tons per year), and particulate matter 10 emissions by 0.53 pounds per day (138 lbs. per year). This efficiency enabled the city to expand yard waste collection from 150,000 to 200,000 homes.

### Contact

Nader Tirandazi
*Assistant to the Director*

Environmental Services Department
9601 Ridgehaven Court
San Diego, CA 92123

Phone: 858/492-5049
E-mail: ntirandazi@sandiego.gov
Web site: www.sandiego.gov/environmental-services/collection/reroute.shtml