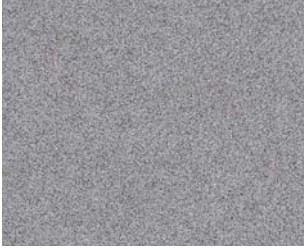


## Chapter 5 Waste Management in Olympia

A portion of the 426,000 cell phones retired in the US every day.



Partial zoom.



Detail.



Click on thumbnail to view larger image.  
Click on larger image to close.

CHRIS JORDAN

**Running the Numbers**  
An American Self-Portrait  
*Cell Phones, 2007*  
60"x100"

This chapter describes how Waste ReSources fits within the Public Works organizational structure, current core programs and staffing, and operational information about the Utility's collection services. The City's internal policies and practices for "walking its talk" to reduce waste and increase recycling are also discussed. Challenges and issues related to Olympia's Waste ReSources programs and internal waste reduction and recycling efforts are highlighted.

### ORGANIZATIONAL RELATIONSHIPS

The City of Olympia has a Council/Manager form of government, with an elected City Council making policy decisions, and an appointed City Manager who oversees several departments, including Public Works.

The Public Works Department is organized into four Lines of Business, illustrated in **Figure 5.1**. This structural organization streamlines accountability and decision-making. Each line of business includes program and planning, as well as operations and maintenance, to create a cohesive unit for each type of work.

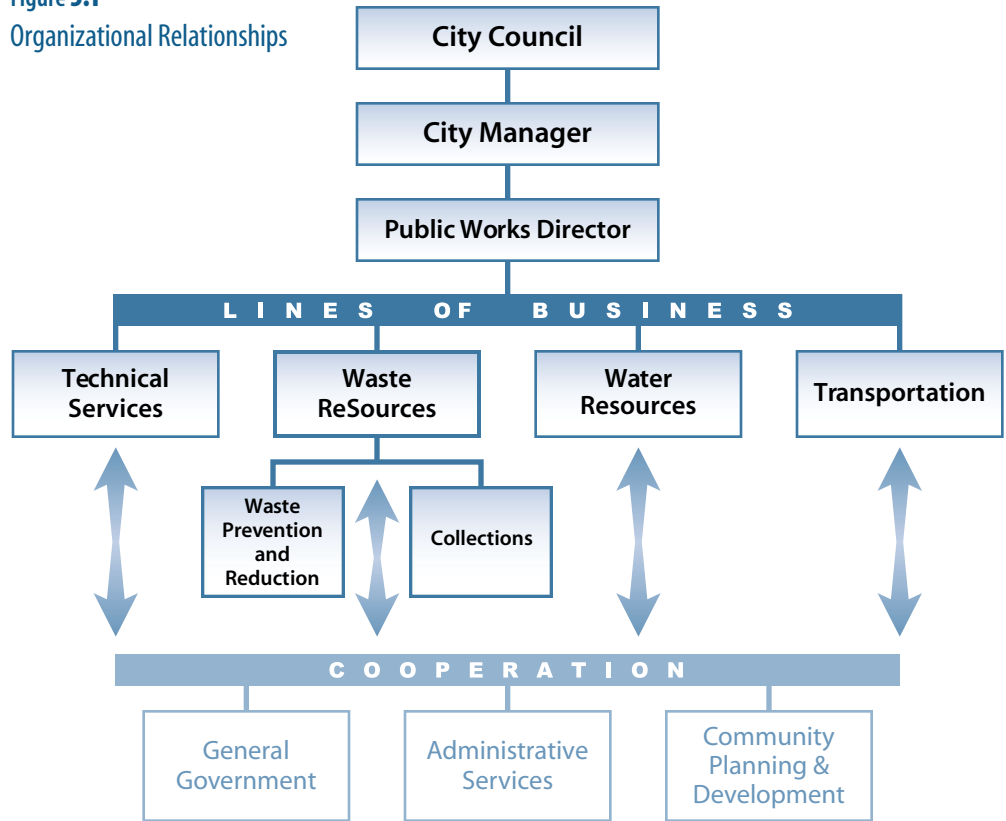
Technical Services supports the Waste ReSources, Water Resources, and Transportation Lines of Business by providing capital facilities engineering, infrastructure design, construction management and asset data management. The Public Works Director's Office provides finance, accounting and communications services.

Waste ReSources also has cooperative relationships with three other City departments:

- **General Government.** Oversight of City policies and legal issues and coordination of emerging issues.
- **Administrative Services.** Billing, payroll, financial planning and cash management.
- **Community Planning and Development.** Implementation of design standards for location and screening of garbage and recycling receptacles in new commercial and multi-family developments.

The Utility is managed and funded as an enterprise fund, and therefore its financing is entirely self-supporting (see **Chapter 10**).

**Figure 5.1**  
Organizational Relationships



## WASTE RESOURCES PROGRAMS

Currently, Waste ReSources has two core programs:

- Waste Prevention and Reduction
- Collections

A Line of Business Director, supported by a Program Assistant, oversees these two core programs and reports to the Public Works Director. Costs of these positions are allocated between the two programs.



### Waste Prevention and Reduction Program

The Waste Prevention and Reduction Program is responsible for preparing and periodically updating the Utility's waste management plans, and for developing and implementing policies and programs. This Program focuses on reducing overall waste and increasing reuse, recycling and composting (Goals 1 and 2). Program management tasks include negotiating franchise agreements for newly annexed areas and managing contracts with recycling processors.

Program staff are also responsible for education and information services for the public and collection crews; technical assistance to businesses; review of new development proposals; code enforcement; and monitoring, research and evaluation.

Three full-time employees are budgeted for this Program.

## Collections Program



*Fully automated side-loader (residential).*



*Fully automated front-loader (commercial).*



*Semi-automated rear-loader (commercial).*



*Roll-off drop-box truck (commercial).*

The Collections Program operates the drop-box and curbside collection services, so waste can be disposed of reliably, with minimal impact on environmental and public health and worker safety (Goal 3).

In addition to daily residential and commercial collection, collections staff empty downtown trash containers, remove waste from community events, and clean up illegal dump sites. They design collection routes, provide onsite technical assistance and customer service, deliver and remove City-owned waste receptacles, and handle Utility billing for drop boxes and commercial dumpsters.

The Collections Program is currently budgeted for 24 full-time employees: a Supervisor, Lead Worker, Accounting Technician, Maintenance Worker and 20 Refuse Collectors.

### Customers and Equipment

The Collections Program serves over 12,000 single-family residential customers, about 130 multi-family buildings, and roughly 1,510 commercial customers. Single-family residential waste is collected in carts. Most waste from multi-family customers is collected in carts or dumpsters, and waste from commercial customers in carts, cans, dumpsters or drop boxes (see **Chapter 2, Table 2.1** for more details).

Waste ReSources operates a fleet of 15 heavy-duty vehicles, pictured at left:

- Six fully automated side-load refuse trucks for residential carts on five routes and for special one-time service calls; one serves as a spare.
- Three fully automated front-load refuse trucks for commercial containers on two routes; one serves as a spare.
- Two semi-automated rear-load refuse trucks for commercial containers.
- Four roll-off drop-box trucks; one serves as a spare.

In a fully automated truck, the same person drives the truck and empties the carts using controls inside the truck. The driver usually does not need to get in and out of the truck.



*Collections staff keep the City clean.*

---

*Phase 1 – Residential collection is semi-automated with two-stream recycling. Every-other-week collection begins.*

In a semi-automated truck, the driver has to climb in and out of the truck to move each container on and off a lifting platform. The driver operates the lifting platform using hydraulic controls at the rear of the truck to empty the container.

Vehicles are driven roughly 320,000 miles in a 12-year life. New trucks cost between \$160,000 and \$180,000 and require six months for delivery.

### **Operational Efficiency**

The Utility started collecting residential recyclables at the curb in 1988, and began collecting yard debris and multi-family curbside recyclables 1994. Since 1998, the Utility has focused on a series of phased improvements designed to collect garbage and recyclables more efficiently and with maximum safety for workers. (See [Appendix 3](#) for a brief history of waste management in Olympia and Thurston County.)

### **Past Improvements**

**Phase 1** began in 1998, using semi-automated trucks for residential curbside collection of garbage, recyclables and yard debris. This allowed the Utility to reduce the residential collection team from 13 to seven employees and the number of trucks from nine to seven. Concurrently, the Utility began accepting all plastic bottles and aerosol cans for recycling. Recycling was changed from a “three-stream sort” (using separate containers for paper, glass bottles and jars, and cans) to a “two-stream sort” (using one cart with two compartments – one for co-mingled glass bottles, jars and cans, and one for co-mingled paper and cardboard).

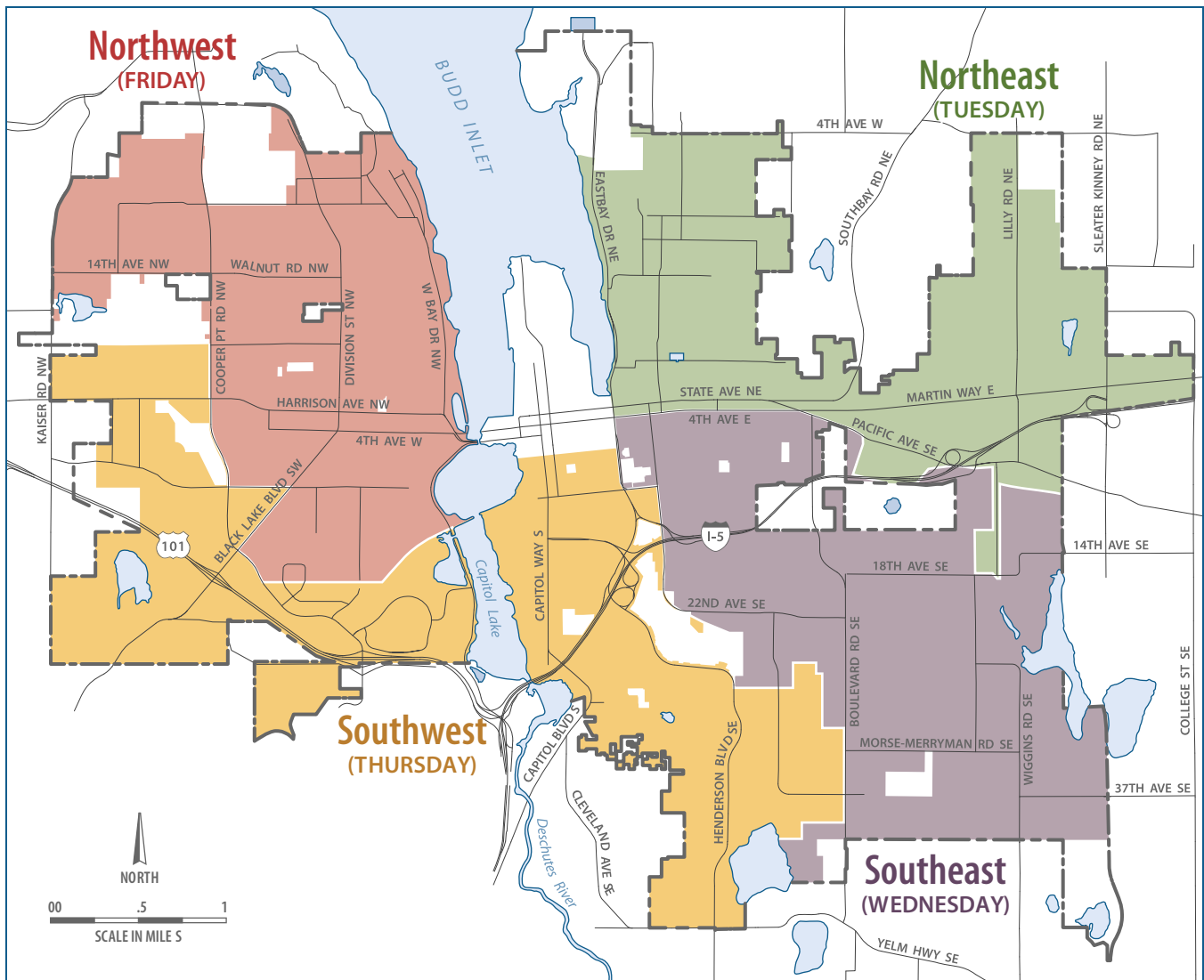
To accommodate collection of the additional materials, the Utility began an alternating every-other-week collection cycle for single-family residences. On Tuesday through Friday, garbage was collected one week and recycling the next. Yard debris was collected on Mondays, in alternating halves of the city. This collection cycle has proven to be very efficient and is still being used.

**Figure 5.2** shows the Utility’s four residential collection service areas – northwest, southwest, northeast and southeast Olympia. Each day from Tuesday through Friday, all five trucks operate in one area, collecting garbage one week and recyclables the next week.

The new system has several advantages:

- More stops in the same amount of time.
- Standardized containers and trucks.
- More efficient use of time and equipment because the same staff and trucks can handle different waste streams.
- Reduced risk of worker injury from lifting and dumping heavy containers.

**Figure 5.2**  
Residential Collection Service Areas



*Phase 2 – Residential collection is fully automated with one cart for all recyclables.*

*Phase 3 – Most commercial garbage collection is fully automated with front-load trucks.*



**Phase 2**, in 2003, implemented fully automated collection and introduced single-stream recycling for single-family residential customers, with all recyclables placed in one cart. This change further reduced the residential collection fleet from seven to five trucks and drivers.

**Phase 3**, the following year, switched commercial garbage collection in approximately 80 percent of the City from semi-automated rear-load collection to fully automated front-load collection. Collection with front-load equipment can be fully automated as long as containers are accessible for the truck. This is not always possible when the container or the surrounding enclosure obstructs access or when other objects are in the way. Nevertheless, significant efficiencies were gained.

## CITY OF OLYMPIA: WALKING ITS TALK

After beginning curbside recycling service in 1988 and launching a major recycling and waste reduction educational campaign, the City began implementing internal policies and practices in order to “walk its talk” and take the same steps it was urging others to take.

### Policies

City Council has passed a number of ordinances and resolutions over the years to make its intentions clear:

- **Ordinance 5141** (November 1990) instructed the City Manager to implement programs to maximize the reduction and recycling of City-generated waste and to procure and promote the use of recycled and recyclable products.
- **Resolution M-1550** (March 2004) adopted a strategy to manage and reduce City government energy and fuel consumption and greenhouse gas emissions.
- **Resolution M-1621** (December 2005) defined strategies and guidelines to reduce and/or eliminate the purchase and use of pesticides and persistent toxic chemicals by the City.
- **Resolution M-1641** (June 2006) directed the City to focus planning efforts on strategies towards achieving the vision of Zero Waste, and to work with all City Departments to identify and implement internal Zero Waste strategies. (See [Appendix 2.](#))

## Implementation

Implementation of the City's internal waste reduction and recycling policies has varied among City departments. The amount of recycling depends largely on the quantity of material generated, whether a building is owned or leased, and the level of interest within each department. Following are the City's current waste reduction and recycling activities:

- Most departments collect paper and cardboard for recycling, but only a few collect bottles and cans.
- The Administrative Services Department purchases recycled copy paper for all City departments.
- For street construction/repair projects, the City specifies use of recycled materials for roadbeds, and requires recycling of concrete and asphalt debris whenever possible.
- Three City buildings use worm bins to compost food waste.
- The City has pledged to reduce its 2007 paper usage to half of that in 2006.

## CHALLENGES AND OPPORTUNITIES

This section highlights the challenges and opportunities related to the City's internal waste management organization, policies and practices that may affect Olympia's efforts to move towards Zero Waste.

### Waste Prevention and Recycling

The two main challenges for the Waste Prevention and Recycling Program are limited staffing and lack of key data.

**Staff resources.** Staff has not been able to provide as much education and technical assistance as seems necessary. It has focused on certain activities such as Spring Recycle Days, the yard debris drop-off site and Neighborhood Chipping, and has had to pass up others until more resources are available.

**Data.** Waste ReSources intends to manage the programs identified in this Plan in accordance with the principles of adaptive management, which require routine review of effectiveness and course correction as needed. The Utility currently lacks important information that would help focus services and programs. For example, staff can only estimate how many businesses are recycling, and the actual tonnage of recyclables collected by private haulers from local businesses and institutions such as State agencies. Accurate data on multi-family recycling is also not available, since it is tracked based on container type rather than customer type. Also, data on quantities of waste self-hauled to the WARC by Olympia residents and businesses is not available. Better reporting of this information would help with planning, public education and technical assistance programs, and evaluation of results.

## Collections

Several challenges remain for continued improvements in the Collections Program, particularly for business and multi-family customers. Adding electronic equipment to collection trucks and charging rates based on weight would also improve collection efficiency.



*Some multi-family buildings are easier for trucks to access.*



*Space constraints make multi-family collection difficult at some locations.*

**Multi-family residential complexes.** The City’s 130 complexes are all different in terms of:

- Number of dwellings in the complex.
- Type of dwelling: apartments, mobile homes with ownership of the plot, mobile homes with rental of the plot, duplexes with individual or centralized garbage and recycle containers.
- Location and availability of space for garbage and recycle containers.
- Demographic diversity of renters, for example retired people, families with children, economically well-off or economically challenged.
- Local or absentee management.

As a result, the Utility must custom-design garbage and recycling collection for each customer. This effort is time-consuming and requires constant tending.

**Mixed-use buildings.** Buildings with both residential and commercial tenants are called mixed-use buildings. Most building owners and managers consider them primarily as commercial buildings. They often are reluctant to offer recycling options to residential tenants due to budget and space constraints.

**Design standards for enclosures.** For aesthetic reasons, Olympia’s design standards require garbage and recycling receptacles for new commercial buildings and multi-family complexes to be screened from view. In many older structures, enclosures are not big enough or have limited access. As a result, recycling options for tenants are often less than optimal, and collection crews have to maneuver heavy containers manually.

The standards have been revised to accommodate front-loading trucks and additional dumpsters for recycling, but further revision is needed to allow for increased recycling and safer and more efficient collection.

**Weight-based rates.** Ideally, commercial customers would be charged by weight instead of volume. Equipment manufacturers have experimented with on-board scales, but they have not been proven to be reliable.

**On-board computers and Global Positioning System (GPS) technology.** Use of on-board computers with GPS routing technology and customer data is becoming increasingly common. This technology can improve data collection and customer service.

### **Walking the City's Talk**

The City already has in place general policies and practices that are a starting point for further development. This creates opportunities for improved internal waste reduction and recycling, for example:

**New City Hall.** The new City Hall planned for construction in 2008/2009 will house nearly all City staff under one roof. The new building is an opportunity for the City to model green building and other waste-reduction practices.

**Coordination of Zero Waste strategies.** The City Council's Zero Waste resolution (June 2006) mandated all City Departments to identify and implement internal Zero Waste strategies.

**Collaboration with other agencies.** The City could enhance its internal Zero Waste efforts by collaborating with State government and other public entities to learn what others are doing, and to achieve economies of scale. For example, the State has progressive internal recycling and waste reduction practices and policies for sustainable building and green procurement. Other government and educational institutions, such as The Evergreen State College, have also embraced waste reduction and recycling practices.

