

Performance and Cost Data

RESIDENTIAL REFUSE COLLECTION

PERFORMANCE MEASURES FOR RESIDENTIAL REFUSE COLLECTION

SERVICE DEFINITION

This is regularly scheduled collection of household refuse or “garbage” from residential premises and other locations, including small businesses, using containers small enough that residents and/or workers can move or lift them manually. The service excludes collection of waste from dumpsters; regular or special collection of yard waste and leaves; collection of recyclable materials, white goods, or other bulky items; and any special or non-routine service provided to residences. Transportation of refuse to a landfill or a transfer station is included, but the disposal of refuse and tipping costs are excluded.

NOTES ON PERFORMANCE MEASURES

1. Tons of (Residential) Refuse Collected per 1,000 Population and per 1,000 (Residential) Collection Points

“Tons of refuse collected” is widely used as a measure of workload for this service. A collection point or pickup point is a single locale (active address) from which residential refuse is collected; it can be a single-family residence, a condominium, an apartment, or a small business that uses containers that residents or sanitation workers can move or lift. Pickup points directly generate collection work, so this measure provides a good assessment of workload. “Tons of refuse collected per 1,000 population” and “per 1,000 collection points” also serve as measures of need for this service. Because of citizen expectations and public health requirements, sanitation crews or contractors must pick up all or virtually all household refuse that residents put out for collection.

2. Cost per Ton of Residential Refuse Collected and per Residential Collection Point

These are the project’s principal measures of efficiency for this service. Because of differences in numbers of people per household and the percentage of the municipal population served by curbside collection, the comparisons for these two efficiency measures can vary.

3. Full-Time Equivalent (FTE) Positions

The number of full-time equivalent (FTE) positions for residential refuse collection is the number of employees directly involved in providing the service as approved in the annual operating budget during the fiscal year. This number includes both full-time and part-time workers and both permanent and temporary workers. One FTE equates to 2,080 hours of work per year. Any combination of employees providing 2,080 hours of work annually equals one FTE. Cost data reflect all such workers. The measure “tons collected per collection FTE,” however, includes only those workers who actually collect refuse and not supervisory or support personnel.

4. Number of Complaints and Number of Valid Complaints

All of the participating units take calls about residential refuse collection, and nearly all maintain records of one kind or another about such calls. However, the municipalities follow very different procedures in processing and recording these calls and determining which ones are complaints and which are not. For these reasons, the project is able to present limited comparative data about complaints or valid complaints for residential refuse collection or other solid waste services.

Nonetheless, the project recommends that the participating municipalities devise common criteria for identifying complaints and procedures for processing and recording calls.



Residential Refuse Collection

Summary of Key Dimensions of Service

City or Town	Normal Collection Location	Collection Points	Tons Collected	Weekly Routes	Percentage Contracted Service	Crew Size (most commonly used)	FTE Collection Positions	Main Equipment		Landfill/Transfer	
								Packers	Automated	Trips per Day	Distance
Asheville	Curbside	29,150	24,215	33	0%	1 & 3 person	15.5	2	7	2	6 Miles
Burlington	Curbside	16,216	14,093	27	0%	1 & 2 person	8.5	1	5	2	17 Miles
Cary	Curbside	42,719	30,356	48	0%	1 & 4 person	26	2	10	1	20 Miles
Charlotte	Curbside	209,005	190,149	310	22%	1 & 2 person	63	9	42	1.4	14 Miles
Concord	Curbside	27,374	25,791	38	100%	2 person	0	9	0	2	8 Miles
Durham	Curbside	67,500	45,719	74	0%	1 & 3 person	57	6	15	2	11 Miles
Greensboro	Curbside	76,764	55,898	86	0%	1 & 2 person	26.17	3	18	1.75	8 Miles
Greenville	Curbside and Backyard	17,431	29,163	32	0%	3 person	36	8	0	2	6 Miles
Hickory	Curbside	11,600	9,730	15	0%	1 & 2 person	5	1	4	2	5 Miles
High Point	Curbside	35,332	30,587	38	0%	1 & 3 person	35	1	8	2	8 Miles
Salisbury	Curbside	11,300	9,609	15	0%	1 & 2 person	9.5	6	0	1	9 Miles
Wilmington	Curbside	28,453	24,505	44	0%	2 & 3 person	38	15	0	2	10 Miles
Wilson	Curbside	17,900	19,253	17	0%	1 & 3 person	11	2	5	2	10 Miles
Winston-Salem	Curbside and Backyard	73,500	50,608	128	0%	3 person	100.8	29	3	1	10 Miles

NOTES

All of the municipalities currently collect residential refuse once per week.

All of the municipalities have special provisions for collecting from the back or side yards of individuals with disabilities or mobility restrictions.

EXPLANATORY FACTORS

These are factors that the project found to affect residential refuse collection performance and cost in one or more of the municipalities:

- Backyard or curbside collection
- Routing
- Climate
- Topographic conditions
- Population density
- Size of crews
- Type of equipment used (automated)
- Privatization
- Participation in recycling program
- Economies of scale
- Distance to landfill/transfer station
- Fee policies (volume-based or other)

Asheville

Residential Refuse Collection

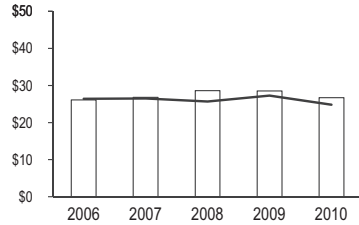
Key: Asheville ■

Benchmarking Average —

Fiscal Years 2006 through 2010

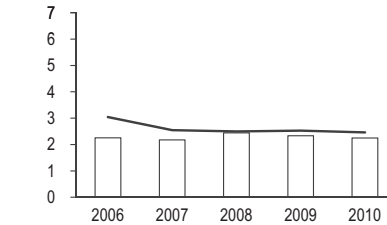
RESOURCE Measures

Residential Refuse Collection Costs per Capita



Asheville	\$26.10	\$26.79	\$28.62	\$28.53	\$26.70
Average	\$26.39	\$26.50	\$25.67	\$27.25	\$24.81

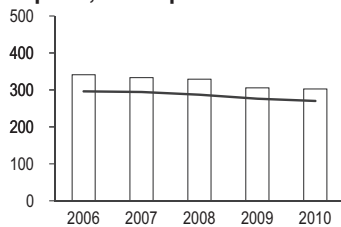
Residential Refuse Collection FTEs per 10,000 Population



Asheville	2.25	2.17	2.44	2.33	2.25
Average	3.04	2.55	2.50	2.53	2.46

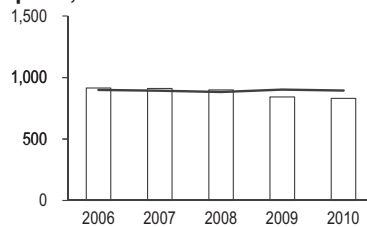
WORKLOAD Measures

Residential Refuse Tons per 1,000 Population



Asheville	341	333	329	306	303
Average	296	294	287	276	270

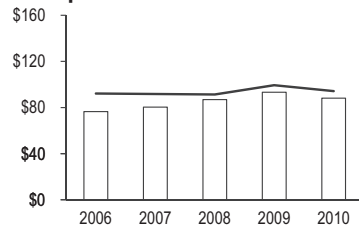
Residential Refuse Tons per 1,000 Collection Points



Asheville	914	911	899	842	831
Average	899	893	883	902	894

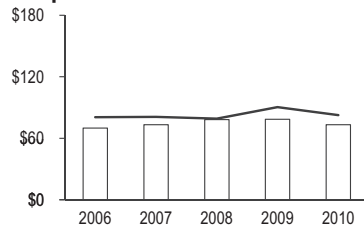
EFFICIENCY Measures

Residential Refuse Collection Cost per Ton Collected



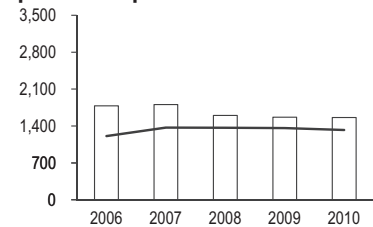
Asheville	\$77	\$80	\$87	\$93	\$88
Average	\$92	\$92	\$91	\$99	\$94

Residential Refuse Collection Cost per Collection Point



Asheville	\$70	\$73	\$78	\$79	\$73
Average	\$81	\$81	\$79	\$90	\$83

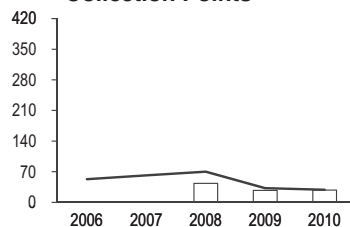
Refuse Tons Collected per Municipal Collection FTE



Asheville	1,783	1,808	1,601	1,566	1,562
Average	1,210	1,371	1,368	1,362	1,325

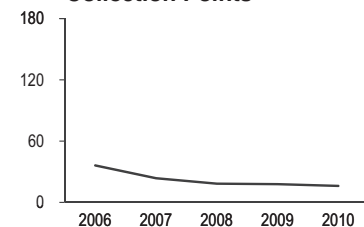
EFFECTIVENESS Measures

Complaints per 1,000 Collection Points



Asheville			43.5	27.3	28.2
Average	52.8	61.5	70.0	32.4	28.9

Valid Complaints per 1,000 Collection Points



Asheville					
Average	36.1	23.6	18.3	17.8	16.2

Residential Refuse Collection

Asheville

Fiscal Year 2009–10

MUNICIPAL PROFILE		EXPLANATORY INFORMATION
Population (OSBM 2009)	79,973	<p>Service Level and Delivery Asheville collects residential refuse once a week at curbside, although backyard collection is provided for disabled customers at no charge or for other customers for a fee.</p> <p>The city uses seven automated trucks with one driver from Monday to Thursday working ten-hour days. Two rear packers with one driver and two collectors for each truck are used from Monday to Friday for the collection of bulky items, clean-ups, and streets not accessible by automated trucks.</p> <p>There are twenty-eight main collection routes served by the automated trucks with seven done each day. The average number of trips to the transfer station is two per day per route. Nearly all trash goes to the transfer station before going to the landfill. The average distance to the transfer station is six miles.</p> <p>The city collected 24,215 tons of residential refuse during FY 2009–10, at a cost of \$88 per ton. The cost per ton does not include the disposal cost per ton of \$43 at the landfill or \$47 at the transfer station.</p> <p>Residents receiving automated service are provided with one container. The majority of the containers are ninety-five-gallon capacity. Some residents use containers of sixty-five-gallon or thirty-five-gallon capacity. Residents may rent more containers if desired. Residents receiving rear loading service provide their own containers. They are able to use up to six containers or bags.</p> <p>Conditions Affecting Service, Performance, and Costs Asheville is highly automated in the area of residential refuse collection.</p>
Land Area (Square Miles)	44.99	
Persons per Square Mile	1,778	
Topography	Hills, mountains	
County	Buncombe	
Climate	Moderate; ice and snow	
Median Family Income (US Census 2000)	\$44,029	
FULL COST PROFILE		
Cost Breakdown by Percentage		
Personal Services	38.0%	
Operating Costs	41.3%	
Capital Costs	20.7%	
TOTAL	100.0%	
Cost Breakdown in Dollars		
Personal Services	\$ 811,423	
Operating Costs	\$ 881,424	
Capital Costs	\$ 442,420	
TOTAL	\$ 2,135,267	
SERVICE PROFILE		
FTE Positions—Collection	15.5	
FTE Positions—Other	2.5	
Tons Collected	24,215	
Residential Customers (number represents collection points)	29,150	
Collection Location (backyard for fee and disabled)	Curbside	
Collection Frequency	1 x week	
Size of Crews (most commonly used)	1 and 3 person	
Percentage of Service Contracted	0%	
Service Fee	No	
Type of Equipment	7 automated packers 2 packers	

Burlington

Residential Refuse Collection

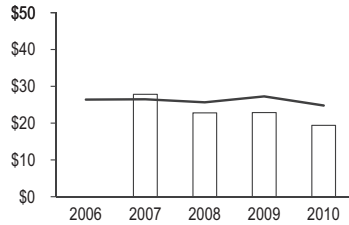
Key: Burlington ■

Benchmarking Average —

Fiscal Years 2006 through 2010

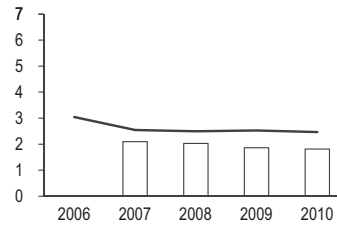
RESOURCE Measures

Residential Refuse Collection Costs per Capita



Year	2006	2007	2008	2009	2010
Burlington	\$27.84	\$22.81	\$22.87	\$19.41	
Average	\$26.39	\$26.50	\$25.67	\$27.25	\$24.81

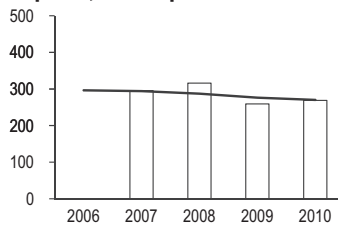
Residential Refuse Collection FTEs per 10,000 Population



Year	2006	2007	2008	2009	2010
Burlington	2.10	2.03	1.87	1.81	
Average	3.04	2.55	2.50	2.53	2.46

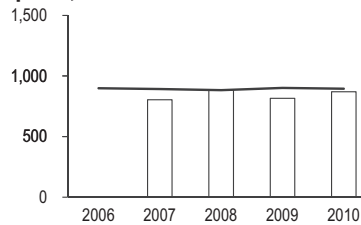
WORKLOAD Measures

Residential Refuse Tons per 1,000 Population



Year	2006	2007	2008	2009	2010
Burlington	295	316	259	269	
Average	296	294	287	276	270

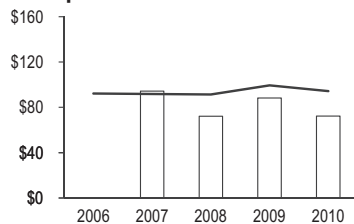
Residential Refuse Tons per 1,000 Collection Points



Year	2006	2007	2008	2009	2010
Burlington	803	886	816	869	
Average	899	893	883	902	894

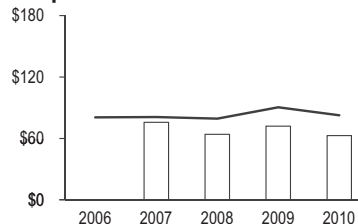
EFFICIENCY Measures

Residential Refuse Collection Cost per Ton Collected



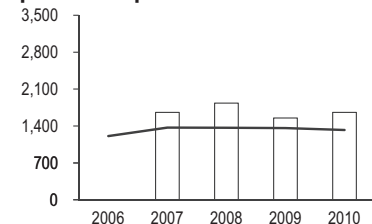
Year	2006	2007	2008	2009	2010
Burlington	\$94	\$72	\$88	\$72	
Average	\$92	\$92	\$91	\$99	\$94

Residential Refuse Collection Cost per Collection Point



Year	2006	2007	2008	2009	2010
Burlington	\$76	\$64	\$72	\$63	
Average	\$81	\$81	\$79	\$90	\$83

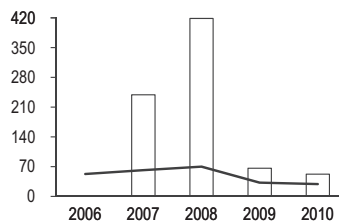
Refuse Tons Collected per Municipal Collection FTE



Year	2006	2007	2008	2009	2010
Burlington	1,657	1,834	1,552	1,658	
Average	1,210	1,371	1,368	1,362	1,325

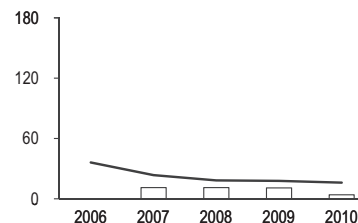
EFFECTIVENESS Measures

Complaints per 1,000 Collection Points



Year	2006	2007	2008	2009	2010
Burlington	239.1	418.6	66.3	52.2	
Average	52.8	61.5	70.0	32.4	28.9

Valid Complaints per 1,000 Collection Points



Year	2006	2007	2008	2009	2010
Burlington	11.2	11.1	10.8	4.1	
Average	36.1	23.6	18.3	17.8	16.2

Residential Refuse Collection

Burlington

Fiscal Year 2009–10

MUNICIPAL PROFILE		EXPLANATORY INFORMATION
Population (OSBM 2009)	52,457	
Land Area (Square Miles)	25.14	
Persons per Square Mile	2,087	
Topography	Flat; gently rolling	
County	Alamance	
Climate	Temperate; little snow and ice	
Median Family Income (US Census 2000)	\$45,441	
FULL COST PROFILE		
Cost Breakdown by Percentage		
Personal Services	35.8%	
Operating Costs	39.4%	
Capital Costs	24.8%	
TOTAL	100.0%	
Cost Breakdown in Dollars		
Personal Services	\$ 364,255	
Operating Costs	\$ 401,202	
Capital Costs	\$ 252,579	
TOTAL	\$ 1,018,036	
SERVICE PROFILE		
FTE Positions—Collection	8.50	
FTE Positions—Other	1.00	
Tons Collected	14,093	
Residential Customers (number represents collection points)	16,216	
Collection Location (backyard for disabled)	Curbside	
Collection Frequency	1 x week	
Size of Crews (most commonly used)	1 person	
Percentage of Service Contracted	0%	
Service Fee (monthly)	\$6.00	
Type of Equipment	5 automated packers 1 packer	
		<p>Service Level and Delivery Burlington collects residential refuse once a week at curbside, although backyard collection is provided if it is medically necessary.</p> <p>The city uses five automated trucks with one driver four days a week. One rear packer with a two-person crew works downtown five days per week. The average number of trips to the transfer station is two per day per route. The average distance to the landfill is seventeen miles.</p> <p>The city collected 14,093 tons of residential refuse during FY 2009–10 at a cost of \$72 per ton. The cost per ton does not include the disposal cost per ton of \$38 at the landfill.</p> <p>Residents receiving automated service are provided with one container. Residents pay a monthly fee of \$6.00 for refuse collection.</p> <p>Conditions Affecting Service, Performance, and Costs Complaints for Burlington include calls for service, inquiries, and regular complaints. Complaints are considered valid if verified by a supervisor in the field.</p> <p>The City of Burlington began participation in the benchmarking project in 2007 with its first reporting data for FY 2006–07.</p>

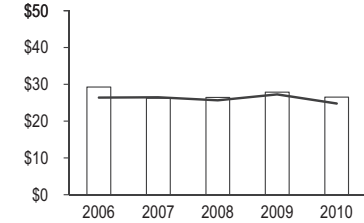
Cary

Residential Refuse Collection

Key: Cary ■ Benchmarking Average — Fiscal Years 2006 through 2010

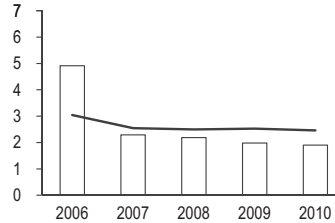
RESOURCE Measures

**Residential Refuse Collection
Costs per Capita**



Cary	\$29.29	\$26.23	\$26.46	\$27.88	\$26.54
Average	\$26.39	\$26.50	\$25.67	\$27.25	\$24.81

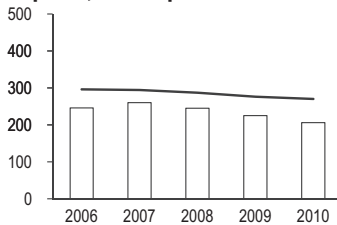
**Residential Refuse Collection FTEs
per 10,000 Population**



Cary	4.92	2.29	2.19	1.98	1.90
Average	3.04	2.55	2.50	2.53	2.46

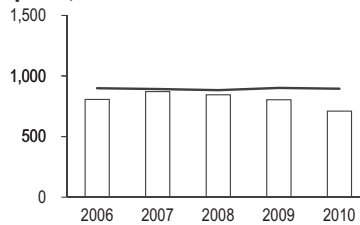
WORKLOAD Measures

**Residential Refuse Tons
per 1,000 Population**



Cary	246	260	245	225	206
Average	296	294	287	276	270

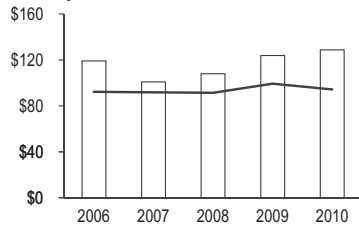
**Residential Refuse Tons
per 1,000 Collection Points**



Cary	806	871	844	803	711
Average	899	893	883	902	894

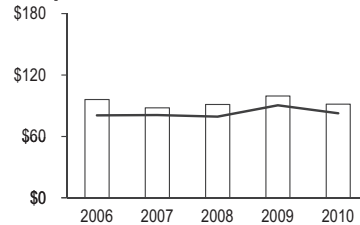
EFFICIENCY Measures

**Residential Refuse Collection Cost
per Ton Collected**



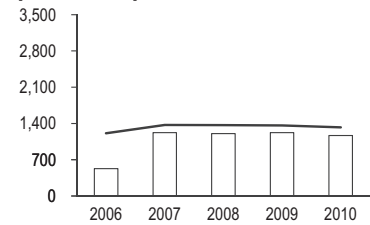
Cary	\$119	\$101	\$108	\$124	\$129
Average	\$92	\$92	\$91	\$99	\$94

**Residential Refuse Collection Cost
per Collection Point**



Cary	\$96	\$88	\$91	\$100	\$92
Average	\$81	\$81	\$79	\$90	\$83

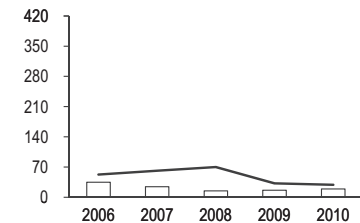
**Refuse Tons Collected
per Municipal Collection FTE**



Cary	528	1,223	1,203	1,223	1,168
Average	1,210	1,371	1,368	1,362	1,325

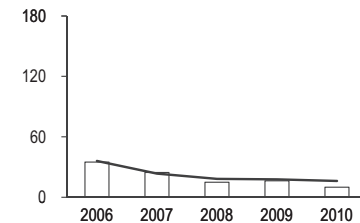
EFFECTIVENESS Measures

**Complaints per 1,000
Collection Points**



Cary	35.0	24.7	15.0	16.3	19.3
Average	52.8	61.5	70.0	32.4	28.9

**Valid Complaints per 1,000
Collection Points**



Cary	35.0	24.7	15.0	16.3	10.0
Average	36.1	23.6	18.3	17.8	16.2

Residential Refuse Collection

Cary

Fiscal Year 2009–10

MUNICIPAL PROFILE

Population (OSBM 2009)	147,282
Land Area (Square Miles)	54.01
Persons per Square Mile	2,727
Topography	Flat; gently rolling
County	Wake
Climate	Temperate; little snow and ice
Median Family Income (US Census 2000)	\$88,074

FULL COST PROFILE

Cost Breakdown by Percentage	
Personal Services	52.6%
Operating Costs	32.8%
Capital Costs	14.5%
TOTAL	100.0%

Cost Breakdown in Dollars	
Personal Services	\$ 2,057,987
Operating Costs	\$ 1,283,587
Capital Costs	\$ 567,810
TOTAL	\$ 3,909,384

SERVICE PROFILE

FTE Positions—Collection	26.0
FTE Positions—Other	2.0
Tons Collected	30,356
Residential Customers (number represents collection points)	42,719
Collection Location (backyard for disabled)	Curbside
Collection Frequency	1 x week
Size of Crews (most commonly used)	1 & 4 person
Percentage of Service Contracted	0%
Service Fee (monthly)	\$14.00
Type of Equipment	10 automated packers 2 packers

EXPLANATORY INFORMATION

Service Level and Delivery

Cary residential refuse collection began major changes during FY 2005–06 moving from backyard collection to curbside and a transition to automation by the start of FY 2006–07. The town charges a fee of \$14.00 per month, covering both solid waste and recycling services.

Cary used ten automated trucks with one driver and three rear loaders with one driver and three collectors. A total of forty-eight collection routes were used during FY 2009–10. The average distance to the landfill was twenty miles with each route averaging one trip per day.

The town collected 310,356 tons of residential refuse during FY 2009–10 at a cost of \$129 per ton. The cost per ton does not include the disposal cost of \$32, representing the transfer station cost and the county landfill tipping fee. Residents use one ninety-five-gallon receptacle.

Conditions Affecting Service, Performance, and Costs

Charlotte

Residential Refuse Collection

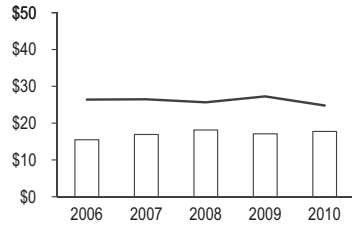
Key: Charlotte ■

Benchmarking Average —

Fiscal Years 2006 through 2010

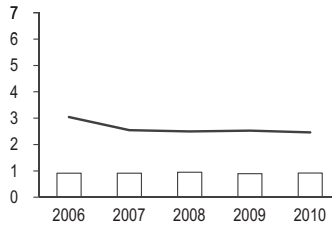
RESOURCE Measures

Residential Refuse Collection Costs per Capita



Charlotte	\$15.47	\$16.91	\$18.13	\$17.11	\$17.76
Average	\$26.39	\$26.50	\$25.67	\$27.25	\$24.81

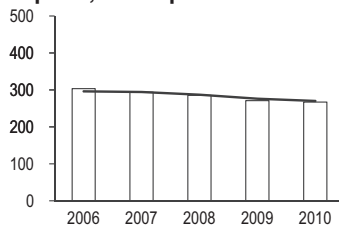
Residential Refuse Collection FTEs per 10,000 Population



Charlotte	0.91	0.91	0.95	0.90	0.92
Average	3.04	2.55	2.50	2.53	2.46

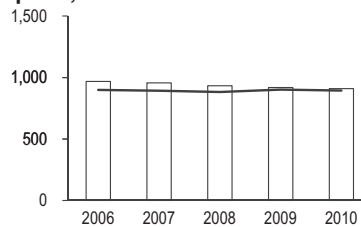
WORKLOAD Measures

Residential Refuse Tons per 1,000 Population



Charlotte	304	294	285	271	267
Average	296	294	287	276	270

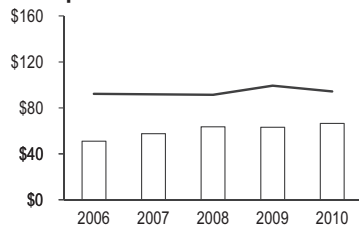
Residential Refuse Tons per 1,000 Collection Points



Charlotte	968	956	933	919	910
Average	899	893	883	902	894

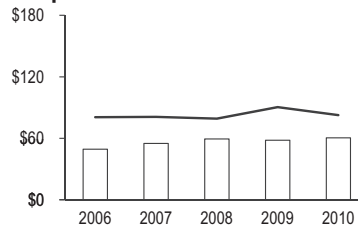
EFFICIENCY Measures

Residential Refuse Collection Cost per Ton Collected



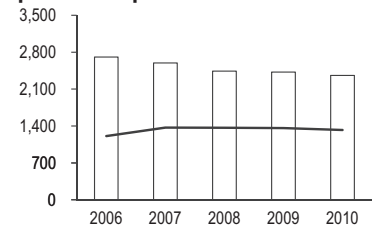
Charlotte	\$51	\$58	\$64	\$63	\$66
Average	\$92	\$92	\$91	\$99	\$94

Residential Refuse Collection Cost per Collection Point



Charlotte	\$49	\$55	\$59	\$58	\$60
Average	\$81	\$81	\$79	\$90	\$83

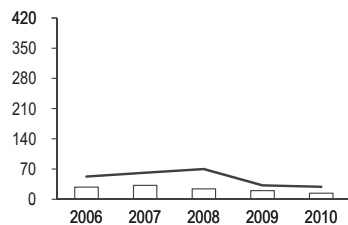
Refuse Tons Collected per Municipal Collection FTE



Charlotte	2,709	2,595	2,442	2,423	2,359
Average	1,210	1,371	1,368	1,362	1,325

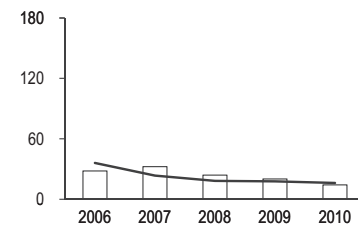
EFFECTIVENESS Measures

Complaints per 1,000 Collection Points



Charlotte	28.2	32.4	24.0	20.1	14.3
Average	52.8	61.5	70.0	32.4	28.9

Valid Complaints per 1,000 Collection Points



Charlotte	28.2	32.4	24.0	20.1	14.3
Average	36.1	23.6	18.3	17.8	16.2

Residential Refuse Collection

Charlotte

Fiscal Year 2009–10

MUNICIPAL PROFILE	EXPLANATORY INFORMATION	
Population (OSBM 2009) 711,349	<p>Service Level and Delivery Charlotte collects residential refuse once a week at curbside. Backyard service is available only to those persons with valid medical reasons and physician certification. The city did not charge a fee for residential refuse collection during FY 2009–10.</p> <p>The city's residential refuse collection program is divided into four service zones, and the residential refuse service provided to each zone is subject to bid once every five years. The Solid Waste Services Department bids along with private contractors to be the service provider under a managed competition process. This practice is a unique aspect of Charlotte's residential refuse service among the participating municipalities. For FY 2009–10, the city provided service to three of the four zones. One zone was serviced by the private sector at a cost of \$2,725,039 and covered approximately 22 percent of the collection points.</p> <p>City crews are composed primarily of one driver each, operating an automated packer. There were forty-two of these crews for FY 2009–10. In addition, five crews composed of one driver and one laborer collected refuse using semi-automated packers. These crews are used primarily for backyard service for those citizens with disabilities and some multi-family complexes with less than thirty units. Small business garbage is collected by four crews, composed of one driver and one laborer, using rear loaders. Costs include reserve crews that were used as needed throughout the year. The contractor used eleven automated crews.</p> <p>The city serviced 310 daily collection routes once each week during FY 2009–10, with an average of 1.4 trips to the landfill per day per route at an average one-way distance of fourteen miles. Each single-family residence is provided one ninety-six-gallon rollout container. An additional receptacle may be purchased for a nominal one-time fee. Charlotte collected 190,149 tons of residential refuse during the fiscal year at a cost of \$66 per ton. The cost per ton does not include the disposal cost of \$26, representing the landfill tipping fee.</p> <p>Conditions Affecting Service, Performance, and Costs Charlotte is highly automated in the area of residential refuse collection. It also uses managed competition for this service and considers all complaints to be valid complaints.</p> <p>The performance measure "tons collected per collection FTE" represents city crews only.</p>	
Land Area (Square Miles) 298.97		
Persons per Square Mile 2,379		
Topography Flat; gently rolling		
County Mecklenburg		
Climate Mild; some ice		
Median Family Income (US Census 2000) \$56,517		
FULL COST PROFILE		
Cost Breakdown by Percentage		
Personal Services 26.7%		
Operating Costs 60.1%		
Capital Costs 13.2%		
TOTAL 100.0%		
Cost Breakdown in Dollars		
Personal Services \$ 3,378,667		
Operating Costs \$ 7,590,720		
Capital Costs \$ 1,667,187		
TOTAL \$ 12,636,574		
SERVICE PROFILE		
FTE Positions—Collection 63.00		
FTE Positions—Other 2.35		
Tons Collected 190,149		
Residential Customers 209,005 (number represents collection points)		
Collection Location Curbside (backyard for disabled)		
Collection Frequency 1 x week		
Size of Crews (most commonly used) 1 & 2 person		
Percentage of Service Contracted 22%		
Service Fee No		
Type of Equipment 42 automated packers 9 packers		

Concord

Residential Refuse Collection

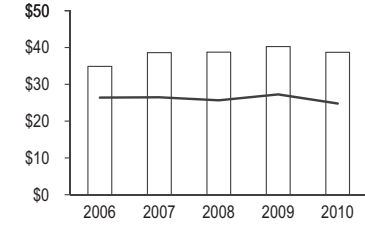
Key: Concord ■

Benchmarking Average —

Fiscal Years 2006 through 2010

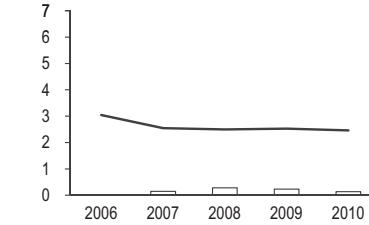
RESOURCE Measures

Residential Refuse Collection Costs per Capita



Year	Concord	Average
2006	\$34.89	\$26.39
2007	\$38.60	\$26.50
2008	\$38.75	\$25.67
2009	\$40.28	\$27.25
2010	\$38.69	\$24.81

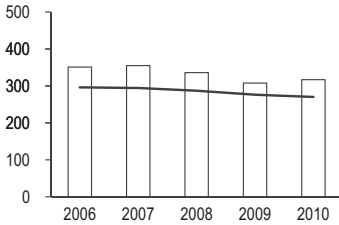
Residential Refuse Collection FTEs per 10,000 Population



Year	Concord	Average
2006	0.15	3.04
2007	0.28	2.55
2008	0.23	2.50
2009	0.14	2.53
2010	0.14	2.46

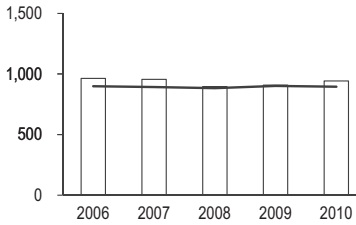
WORKLOAD Measures

Residential Refuse Tons per 1,000 Population



Year	Concord	Average
2006	351	296
2007	355	294
2008	336	287
2009	308	276
2010	317	270

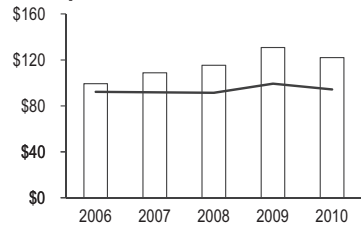
Residential Refuse Tons per 1,000 Collection Points



Year	Concord	Average
2006	964	899
2007	956	893
2008	896	883
2009	908	902
2010	942	894

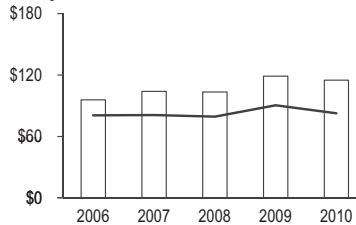
EFFICIENCY Measures

Residential Refuse Collection Cost per Ton Collected



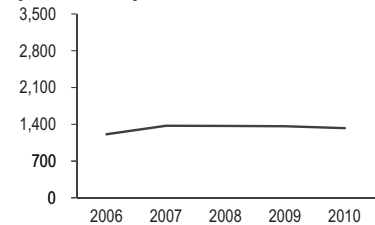
Year	Concord	Average
2006	\$99	\$92
2007	\$109	\$92
2008	\$115	\$91
2009	\$131	\$99
2010	\$122	\$94

Residential Refuse Collection Cost per Collection Point



Year	Concord	Average
2006	\$96	\$81
2007	\$104	\$81
2008	\$103	\$79
2009	\$119	\$90
2010	\$115	\$83

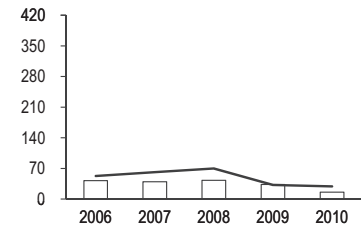
Refuse Tons Collected per Municipal Collection FTE



Year	Concord	Average
2006	1,210	1,210
2007	1,371	1,371
2008	1,368	1,368
2009	1,362	1,362
2010	1,325	1,325

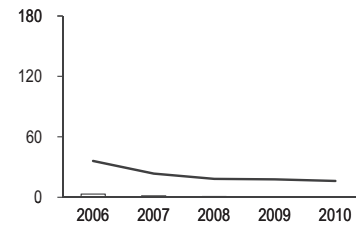
EFFECTIVENESS Measures

Complaints per 1,000 Collection Points



Year	Concord	Average
2006	42.2	52.8
2007	39.6	61.5
2008	42.9	70.0
2009	33.4	32.4
2010	15.9	28.9

Valid Complaints per 1,000 Collection Points



Year	Concord	Average
2006	3.2	36.1
2007	1.4	23.6
2008	0.8	18.3
2009	0.8	17.8
2010	0.8	16.2

Residential Refuse Collection

Concord

Fiscal Year 2009–10

MUNICIPAL PROFILE		EXPLANATORY INFORMATION
Population (OSBM 2009)	81,370	
Land Area (Square Miles)	59.59	
Persons per Square Mile	1,365	
Topography	Flat; gently rolling	
County	Cabarrus	
Climate	Mild; some ice	
Median Family Income (US Census 2000)	\$53,571	
FULL COST PROFILE		
Cost Breakdown by Percentage		
Personal Services	2.2%	
Operating Costs	97.6%	
Capital Costs	0.2%	
TOTAL	100.0%	
Cost Breakdown in Dollars		
Personal Services	\$ 69,352	
Operating Costs	\$ 3,072,901	
Capital Costs	\$ 6,354	
TOTAL	\$ 3,148,607	
SERVICE PROFILE		
FTE Positions—Collection	0.0	
FTE Positions—Other	1.1	
Tons Collected	25,791	
Residential Customers (number represents collection points)	27,374	
Collection Location (backyard for disabled)	Curbside	
Collection Frequency	1 x week	
Size of Crews (most commonly used)	2 person	
Percentage of Service Contracted	100%	
Service Fee	No	
Type of Equipment	7-9 packers	
		<p>Service Level and Delivery Residential refuse collection service is provided once a week at curbside to Concord residents. Backyard service is available for the elderly and disabled. The city provided residential refuse collection service during FY 2009–10 under contract, with an annual cost of approximately \$2.87 million.</p> <p>The contractor used seven to nine two-person crews on rear loaders and one to three one-person crew on an automated packer. Residents used one ninety-five-gallon cart, with extra carts available for larger families or unusual circumstances.</p> <p>The city serviced thirty-eight collection routes over the week during FY 2009–10, with an average distance per residential refuse collection route per day to the landfill of eight miles. The packers made an average of two trips to the landfill per day per route.</p> <p>The contractor collected 25,791 tons of residential refuse during the fiscal year at a cost of \$122 per ton.</p> <p>Conditions Affecting Service, Performance, and Costs Concord is the only jurisdiction participating in the project that contracts 100 percent of its residential refuse collection service. Therefore, "tons collected per collection FTE" is not used for Concord as a performance measure.</p> <p>Concord's "total tons collected" includes bulk trash, which is collected along with residential refuse and cannot be separated for reporting purposes.</p> <p>Concord defines valid complaints to mean any missed collection or request for service as determined by the city to result from contractor negligence or omission. Due to manpower shortages in FY 2006–07, city staff were unable to determine the validity of as many complaints as usual.</p>

Durham

Residential Refuse Collection

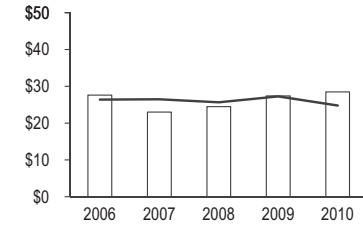
Key: Durham ■

Benchmarking Average —

Fiscal Years 2006 through 2010

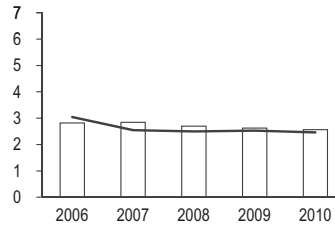
RESOURCE Measures

Residential Refuse Collection Costs per Capita



Year	Durham	Average
2006	\$27.62	\$26.39
2007	\$23.02	\$26.50
2008	\$24.49	\$25.67
2009	\$27.39	\$27.25
2010	\$28.51	\$24.81

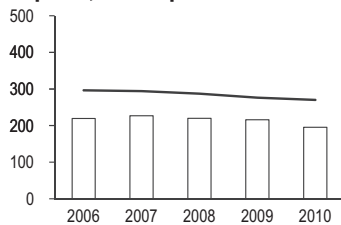
Residential Refuse Collection FTEs per 10,000 Population



Year	Durham	Average
2006	2.82	3.04
2007	2.84	2.55
2008	2.70	2.50
2009	2.63	2.53
2010	2.56	2.46

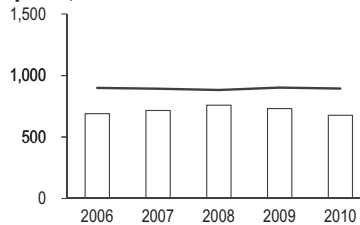
WORKLOAD Measures

Residential Refuse Tons per 1,000 Population



Year	Durham	Average
2006	220	296
2007	227	294
2008	220	287
2009	216	276
2010	195	270

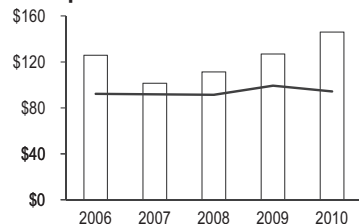
Residential Refuse Tons per 1,000 Collection Points



Year	Durham	Average
2006	690	899
2007	716	893
2008	759	883
2009	732	902
2010	677	894

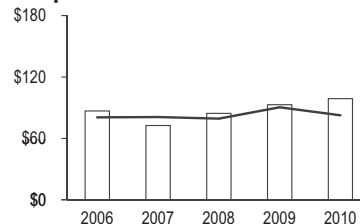
EFFICIENCY Measures

Residential Refuse Collection Cost per Ton Collected



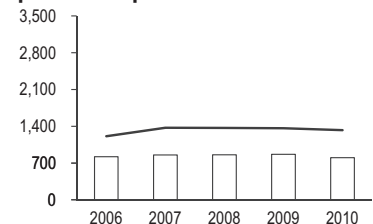
Year	Durham	Average
2006	\$126	\$92
2007	\$101	\$92
2008	\$111	\$91
2009	\$127	\$99
2010	\$146	\$94

Residential Refuse Collection Cost per Collection Point



Year	Durham	Average
2006	\$87	\$81
2007	\$73	\$81
2008	\$84	\$79
2009	\$93	\$90
2010	\$99	\$83

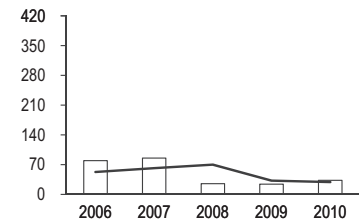
Refuse Tons Collected per Municipal Collection FTE



Year	Durham	Average
2006	820	1,210
2007	855	1,371
2008	858	1,368
2009	865	1,362
2010	802	1,325

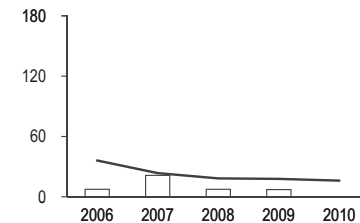
EFFECTIVENESS Measures

Complaints per 1,000 Collection Points



Year	Durham	Average
2006	79.4	52.8
2007	85.5	61.5
2008	25.2	70.0
2009	24.1	32.4
2010	33.0	28.9

Valid Complaints per 1,000 Collection Points



Year	Durham	Average
2006	7.5	36.1
2007	21.4	23.6
2008	7.6	18.3
2009	7.2	17.8
2010		16.2

Residential Refuse Collection

Durham

Fiscal Year 2009–10

MUNICIPAL PROFILE		EXPLANATORY INFORMATION
Population (OSBM 2009)	234,140	<p>Service Level and Delivery Residential refuse collection service is provided once a week at curbside to Durham residents. Senior citizens and disabled persons may apply for and receive backyard pickup. There is currently no fee for residential refuse collection service.</p> <p>The city used twenty-two crews during FY 2009–10. Six crews were composed of one driver and two collectors using rear-loading packers. Fifteen one-person crews operated automated loaders. One two-person crew serviced the downtown route. Residents use one to four ninety-six-gallon capacity containers.</p> <p>The city serviced seventy-four routes in FY 2009–10. The packers made an average of two trips to the disposal facility per day per route. The city used a transfer station during FY 2009–10.</p> <p>Durham collected 44,719 tons of residential refuse during the fiscal year at a cost of \$146 per ton. The cost per ton does not include the disposal cost of \$33.07, representing the transfer fee.</p> <p>Conditions Affecting Service, Performance, and Costs A valid complaint in Durham is one where the customer followed the city's policies for curbside service (placement at the curb by 7 a.m. on the appropriate collection date) but the crew failed to empty the cart or where the department was unable to provide a citizen a replacement cart within fifteen working days.</p>
Land Area (Square Miles)	105.59	
Persons per Square Mile	2,217	
Topography	Flat; gently rolling	
County	Durham	
Climate	Temperate; little snow and ice	
Median Family Income (US Census 2000)	\$51,162	
FULL COST PROFILE		
Cost Breakdown by Percentage		
Personal Services	46.4%	
Operating Costs	33.0%	
Capital Costs	20.6%	
TOTAL	100.0%	
Cost Breakdown in Dollars		
Personal Services	\$ 3,098,904	
Operating Costs	\$ 2,201,365	
Capital Costs	\$ 1,374,017	
TOTAL	\$ 6,674,286	
SERVICE PROFILE		
FTE Positions—Collection	57.0	
FTE Positions—Other	3.0	
Tons Collected	45,719	
Residential Customers (number represents collection points)	67,500	
Collection Location (backyard for disabled)	Curbside	
Collection Frequency	1 x week	
Size of Crews (most commonly used)	1 & 3 person	
Percentage of Service Contracted	0%	
Service Fee	No	
Type of Equipment	15 automated packers 6 packers	

Greensboro

Residential Refuse Collection

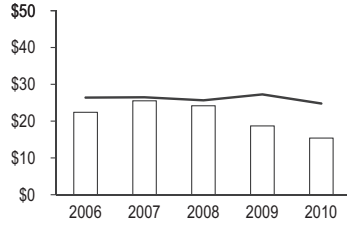
Key: Greensboro ■

Benchmarking Average —

Fiscal Years 2006 through 2010

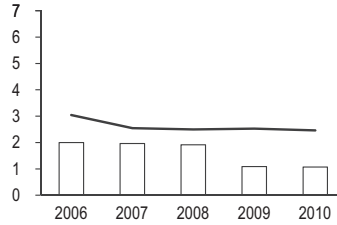
RESOURCE Measures

Residential Refuse Collection Costs per Capita



Year	2006	2007	2008	2009	2010
Greensboro	\$22.40	\$25.55	\$24.19	\$18.70	\$15.39
Average	\$26.39	\$26.50	\$25.67	\$27.25	\$24.81

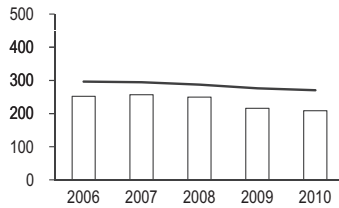
Residential Refuse Collection FTEs per 10,000 Population



Year	2006	2007	2008	2009	2010
Greensboro	2.00	1.96	1.91	1.09	1.07
Average	3.04	2.55	2.50	2.53	2.46

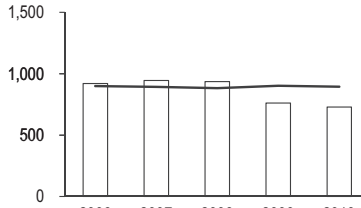
WORKLOAD Measures

Residential Refuse Tons per 1,000 Population



Year	2006	2007	2008	2009	2010
Greensboro	252	257	250	216	208
Average	296	294	287	276	270

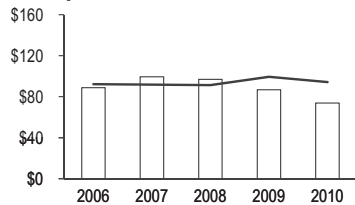
Residential Refuse Tons per 1,000 Collection Points



Year	2006	2007	2008	2009	2010
Greensboro	920	944	936	761	728
Average	899	893	883	902	894

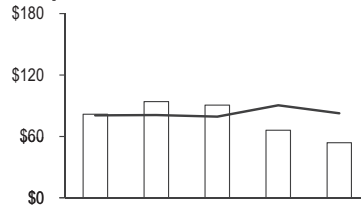
EFFICIENCY Measures

Residential Refuse Collection Cost per Ton Collected



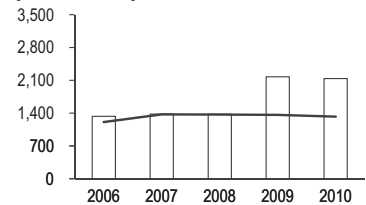
Year	2006	2007	2008	2009	2010
Greensboro	\$89	\$99	\$97	\$87	\$74
Average	\$92	\$92	\$91	\$99	\$94

Residential Refuse Collection Cost per Collection Point



Year	2006	2007	2008	2009	2010
Greensboro	\$82	\$94	\$91	\$66	\$54
Average	\$81	\$81	\$79	\$90	\$83

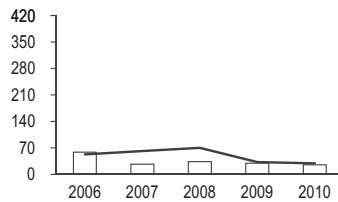
Refuse Tons Collected per Municipal Collection FTE



Year	2006	2007	2008	2009	2010
Greensboro	1,330	1,380	1,377	2,175	2,136
Average	1,210	1,371	1,368	1,362	1,325

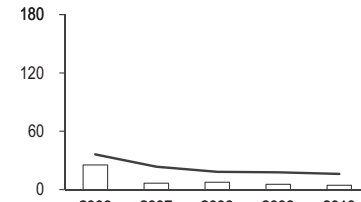
EFFECTIVENESS Measures

Complaints per 1,000 Collection Points



Year	2006	2007	2008	2009	2010
Greensboro	58.6	26.8	33.9	29.6	25.4
Average	52.8	61.5	70.0	32.4	28.9

Valid Complaints per 1,000 Collection Points



Year	2006	2007	2008	2009	2010
Greensboro	25.3	6.6	7.6	5.5	4.5
Average	36.1	23.6	18.3	17.8	16.2

Residential Refuse Collection

Greensboro

Fiscal Year 2009–10

MUNICIPAL PROFILE	EXPLANATORY INFORMATION							
Population (OSBM 2009) 268,283	<p>Service Level and Delivery Greensboro provides once-a-week collection of residential refuse at curbside. Each resident is provided up to two ninety-gallon carts.</p> <p>There were twenty-one city crews for FY 2009–10. Eighteen crews have one driver operating an automated packer. Three crews use rear loaders.</p> <p>The city used 86 collection routes during the fiscal year, with each packer making an average of 1.8 trips per day to the disposal facility averaging about eight miles. The city does not use a solid waste transfer station.</p> <p>The city collected 55,898 tons of residential refuse during FY 2009–10 at a cost of \$74 per ton. Greensboro operates its own landfill.</p> <p>Greensboro defines automated packers as one-armed automated-loading packers that are operated by one person. Rear-loaders are rear-loading packer trucks.</p> <p>Conditions Affecting Service, Performance, and Costs Greensboro is highly automated in the area of residential refuse collection.</p> <p>Greensboro's total tons collected includes bulk trash, which is collected along with residential refuse, and cannot be separated for reporting purposes.</p> <p>Greensboro began utilizing new software in FY 2006–07 which has allowed better tracking of complaints.</p> <p>In FY 2008–09, Greensboro had notable annexation that created some special one time costs.</p>							
Land Area (Square Miles) 127.75								
Persons per Square Mile 2,100								
Topography Flat; gently rolling								
County Guilford								
Climate Temperate; some snow and ice								
Median Family Income (US Census 2000) \$50,192								
FULL COST PROFILE								
Cost Breakdown by Percentage								
<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 80%;">Personal Services</td> <td style="text-align: right;">32.2%</td> </tr> <tr> <td>Operating Costs</td> <td style="text-align: right;">67.8%</td> </tr> <tr> <td>Capital Costs</td> <td style="text-align: right; border-bottom: 1px solid black;">0.0%</td> </tr> <tr> <td>TOTAL</td> <td style="text-align: right;">100.0%</td> </tr> </table>		Personal Services	32.2%	Operating Costs	67.8%	Capital Costs	0.0%	TOTAL
Personal Services	32.2%							
Operating Costs	67.8%							
Capital Costs	0.0%							
TOTAL	100.0%							
Cost Breakdown in Dollars								
<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 80%;">Personal Services</td> <td style="text-align: right;">\$ 1,328,146</td> </tr> <tr> <td>Operating Costs</td> <td style="text-align: right;">\$ 2,801,195</td> </tr> <tr> <td>Capital Costs</td> <td style="text-align: right; border-bottom: 1px solid black;">\$ -</td> </tr> <tr> <td>TOTAL</td> <td style="text-align: right;">\$ 4,129,341</td> </tr> </table>	Personal Services	\$ 1,328,146	Operating Costs	\$ 2,801,195	Capital Costs	\$ -	TOTAL	\$ 4,129,341
Personal Services	\$ 1,328,146							
Operating Costs	\$ 2,801,195							
Capital Costs	\$ -							
TOTAL	\$ 4,129,341							
SERVICE PROFILE								
FTE Positions—Collection 26.2								
FTE Positions—Other 2.5								
Tons Collected 55,898								
Residential Customers 76,764 (number represents collection points)								
Collection Location Curbside (backyard for disabled)								
Collection Frequency 1 x week								
Size of Crews (most commonly used) 1 & 2 person								
Percentage of Service Contracted 0%								
Service Fee No								
Type of Equipment 18 automated packers 3 packers								

Greenville

Residential Refuse Collection

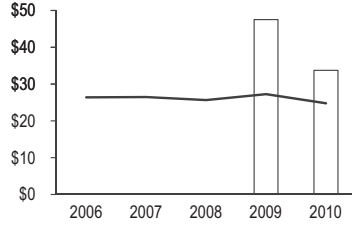
Key: Greenville ■

Benchmarking Average —

Fiscal Years 2006 through 2010

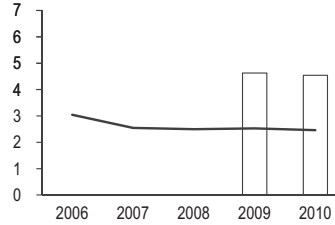
RESOURCE Measures

Residential Refuse Collection Costs per Capita



Greenville				\$47.54	\$33.73
Average	\$26.39	\$26.50	\$25.67	\$27.25	\$24.81

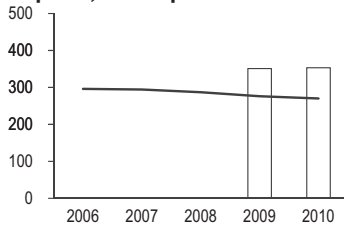
Residential Refuse Collection FTEs per 10,000 Population



Greenville				4.62	4.54
Average	3.04	2.55	2.50	2.53	2.46

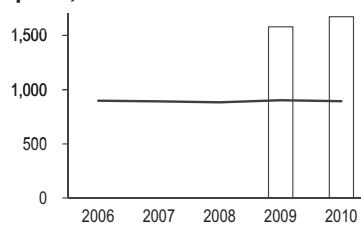
WORKLOAD Measures

Residential Refuse Tons per 1,000 Population



Greenville				351	353
Average	296	294	287	276	270

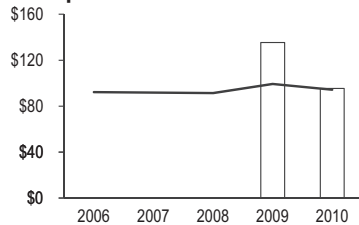
Residential Refuse Tons per 1,000 Collection Points



Greenville				1580	1673
Average	899	893	883	902	894

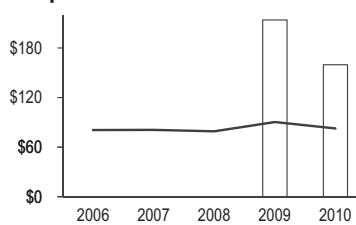
EFFICIENCY Measures

Residential Refuse Collection Cost per Ton Collected



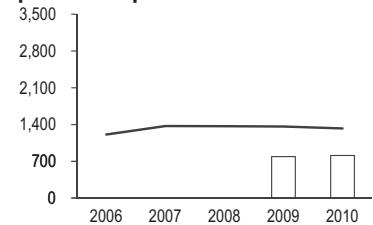
Greenville				\$135	\$95
Average	\$92	\$92	\$91	\$99	\$94

Residential Refuse Collection Cost per Collection Point



Greenville				\$214	\$83
Average	\$81	\$81	\$79	\$90	\$83

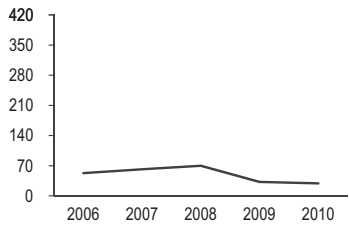
Refuse Tons Collected per Municipal Collection FTE



Greenville				791	810
Average	1,210	1,371	1,368	1,362	1,325

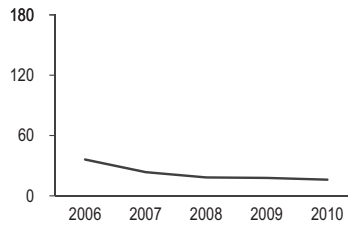
EFFECTIVENESS Measures

Complaints per 1,000 Collection Points



Greenville					
Average	52.8	61.5	70.0	32.4	28.9

Valid Complaints per 1,000 Collection Points



Greenville					
Average	36.1	23.6	18.3	17.8	16.2

Greenville

Residential Refuse Collection

Fiscal Year 2009–10

MUNICIPAL PROFILE		EXPLANATORY INFORMATION
Population (OSBM 2009)	82,571	<p>Service Level and Delivery Greenville collects refuse from residential premises once a week at both curbside and backyard. Residents can choose which level of service to receive at different costs. Backyard collection is priced at \$26 per month while curbside is priced at \$9.60 per month. About 64 percent of households have chosen curbside.</p> <p>The city uses eight crews composed of one driver and two collection workers who work four days a week. The crews use rear loading collection trucks.</p> <p>Thirty-two collection routes were employed during FY 2009–10, with an average of two trips to the transfer station per day per route. The average distance to the transfer station per route was five and a half miles.</p> <p>Greenville collected 29,163 tons of residential refuse during FY 2009–10 at a cost of \$95 per ton. The cost per ton does not include the disposal cost of \$28, representing the tipping fee at the transfer station.</p> <p>Conditions Affecting Service, Performance, and Costs Greenville joined the project with the first year of reporting for FY 2008–09.</p> <p>Greenville was one of only two municipalities participating in this project that continued to collect residential refuse from the backyard for many customers. This is a relatively labor intensive process and represents a high level of service.</p>
Land Area (Square Miles)	35.01	
Persons per Square Mile	2,358	
Topography	Flat	
County	Pitt	
Climate	Mild; little snow and ice	
Median Family Income (US Census 2000)	\$44,491	
FULL COST PROFILE		
Cost Breakdown by Percentage		
Personal Services	61.4%	
Operating Costs	28.9%	
Capital Costs	9.6%	
TOTAL	100.0%	
Cost Breakdown in Dollars		
Personal Services	\$ 1,710,626	
Operating Costs	\$ 805,760	
Capital Costs	\$ 268,380	
TOTAL	\$ 2,784,766	
SERVICE PROFILE		
FTE Positions—Collection	36.00	
FTE Positions—Other	1.5	
Tons Collected	29,163	
Residential Customers (number represents collection points)	17,431	
Collection Location	Backyard/Curbside	
Collection Frequency	1 x week	
Size of Crews (most commonly used)	3 persons	
Percentage of Service Contracted	0%	
Service Fee (monthly per cart)	\$9.60 curbside \$26 backyard	
Type of Equipment	8 packers	

Hickory

Residential Refuse Collection

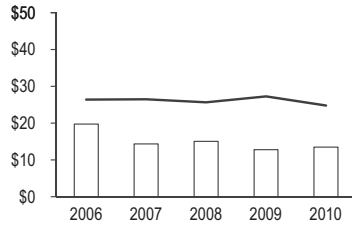
Key: Hickory ■

Benchmarking Average —

Fiscal Years 2006 through 2010

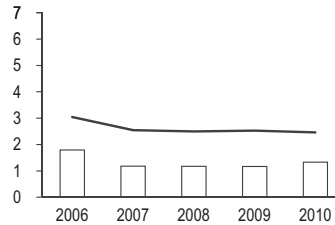
RESOURCE Measures

Residential Refuse Collection Costs per Capita



Hickory \$19.74 \$14.36 \$15.05 \$12.80 \$13.51
Average \$26.39 \$26.50 \$25.67 \$27.25 \$24.81

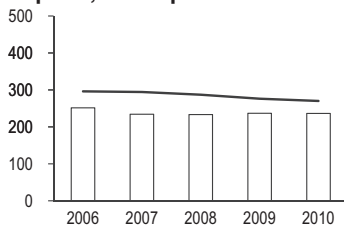
Residential Refuse Collection FTEs per 10,000 Population



Hickory 1.79 1.18 1.17 1.17 1.33
Average 3.04 2.55 2.50 2.53 2.46

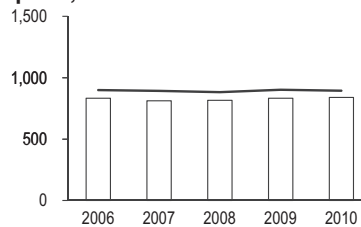
WORKLOAD Measures

Residential Refuse Tons per 1,000 Population



Hickory 251 234 233 237 236
Average 296 294 287 276 270

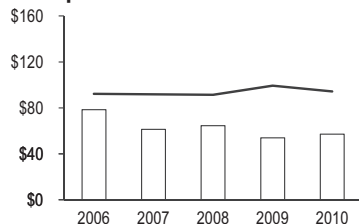
Residential Refuse Tons per 1,000 Collection Points



Hickory 832 812 816 833 839
Average 899 893 883 902 894

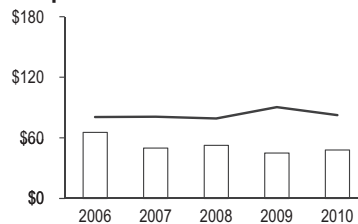
EFFICIENCY Measures

Residential Refuse Collection Cost per Ton Collected



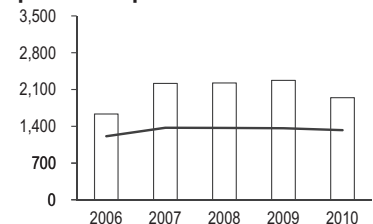
Hickory \$78 \$61 \$64 \$54 \$57
Average \$92 \$92 \$91 \$99 \$94

Residential Refuse Collection Cost per Collection Point



Hickory \$65 \$50 \$53 \$45 \$48
Average \$81 \$81 \$79 \$90 \$83

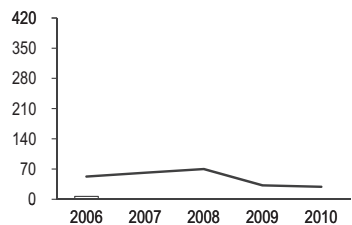
Refuse Tons Collected per Municipal Collection FTE



Hickory 1,635 2,217 2,226 2,273 1,946
Average 1,210 1,371 1,368 1,362 1,325

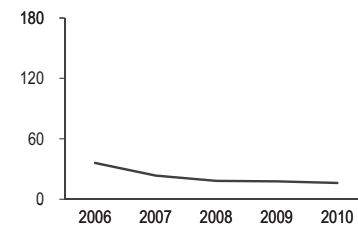
EFFECTIVENESS Measures

Complaints per 1,000 Collection Points



Hickory 6.9
Average 52.8 61.5 70.0 32.4 28.9

Valid Complaints per 1,000 Collection Points



Hickory 36.1
Average 36.1 23.6 18.3 17.8 16.2

Residential Refuse Collection

Hickory

Fiscal Year 2009–10

MUNICIPAL PROFILE		EXPLANATORY INFORMATION
Population (OSBM 2009)	41,151	<p>Service Level and Delivery Hickory collects refuse from residential premises once a week at curbside, although backyard collection is provided for elderly and disabled citizens. A monthly solid waste fee of \$11 per cart was charged for residential refuse collection service during FY 2009–10. Each residence uses a cart provided by the city for residential refuse collection. Each cart has a capacity of ninety-six gallons and is provided at no charge. Upon request a second cart is provided to the customer for an additional solid waste fee.</p> <p>The city used four one-person crews operating automated packers, one half-time crew composed of one driver and one collector working from a regular packer collecting on one-way streets and dead ends, and one quarter-time crew with one driver and one collector collecting from back yards.</p> <p>Fifteen collection routes were employed during FY 2009–10, with an average of two trips to the transfer station per day per route. The average distance to the transfer station per route was five miles.</p> <p>Hickory collected 9,730 tons of residential refuse during FY 2009–10 at a cost of \$57 per ton. The cost per ton does not include the disposal cost of \$33, representing the tipping fee at the Catawba County landfill.</p> <p>Hickory defines automated packers as trucks with mechanical arms.</p> <p>Conditions Affecting Service, Performance, and Costs Hickory is highly automated in the area of residential refuse collection.</p>
Land Area (Square Miles)	29.28	
Persons per Square Mile	1,405	
Topography	Gently rolling	
County	Catawba	
Climate	Moderate; some snow and ice	
Median Family Income (US Census 2000)	\$47,522	
FULL COST PROFILE		
Cost Breakdown by Percentage		
Personal Services	42.4%	
Operating Costs	41.9%	
Capital Costs	15.7%	
TOTAL	100.0%	
Cost Breakdown in Dollars		
Personal Services	\$ 235,765	
Operating Costs	\$ 232,602	
Capital Costs	\$ 87,413	
TOTAL	\$ 555,780	
SERVICE PROFILE		
FTE Positions—Collection	5.00	
FTE Positions—Other	0.5	
Tons Collected	9,730	
Residential Customers (number represents collection points)	11,600	
Collection Location (backyard for disabled)	Curbside	
Collection Frequency	1 x week	
Size of Crews (most commonly used)	1 person	
Percentage of Service Contracted	0%	
Service Fee (monthly per cart)	\$11	
Type of Equipment	4 automated packers 1 packer	

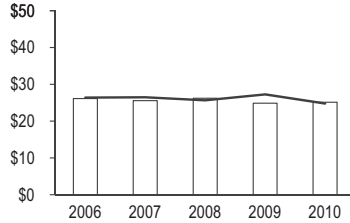
Key: High Point ■

Benchmarking Average —

Fiscal Years 2006 through 2010

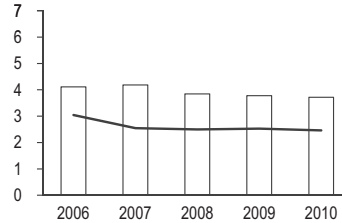
RESOURCE Measures

Residential Refuse Collection Costs per Capita



Year	High Point	Average
2006	\$26.12	\$26.39
2007	\$25.57	\$26.50
2008	\$26.24	\$25.67
2009	\$24.87	\$27.25
2010	\$25.13	\$24.81

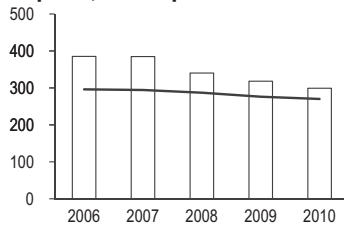
Residential Refuse Collection FTEs per 10,000 Population



Year	High Point	Average
2006	4.11	3.04
2007	4.18	2.55
2008	3.85	2.50
2009	3.78	2.53
2010	3.72	2.46

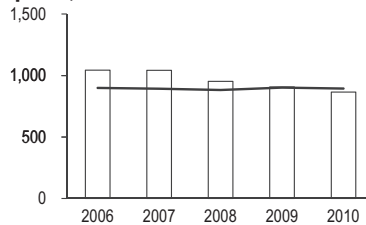
WORKLOAD Measures

Residential Refuse Tons per 1,000 Population



Year	High Point	Average
2006	386	296
2007	385	294
2008	341	287
2009	318	276
2010	299	270

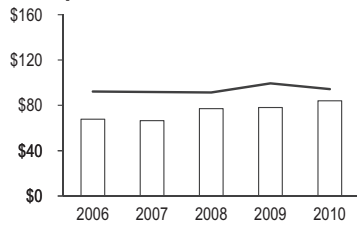
Residential Refuse Tons per 1,000 Collection Points



Year	High Point	Average
2006	1044	899
2007	1042	893
2008	952	883
2009	907	902
2010	866	894

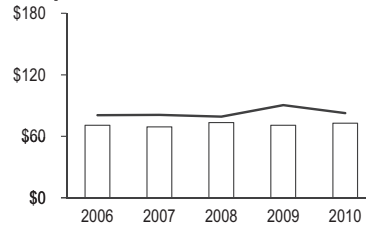
EFFICIENCY Measures

Residential Refuse Collection Cost per Ton Collected



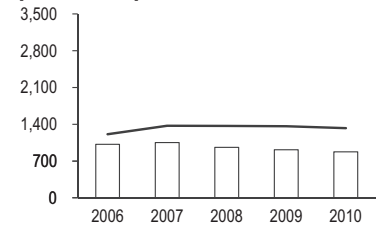
Year	High Point	Average
2006	\$68	\$92
2007	\$66	\$92
2008	\$77	\$91
2009	\$78	\$99
2010	\$84	\$94

Residential Refuse Collection Cost per Collection Point



Year	High Point	Average
2006	\$71	\$81
2007	\$69	\$81
2008	\$73	\$79
2009	\$71	\$90
2010	\$73	\$83

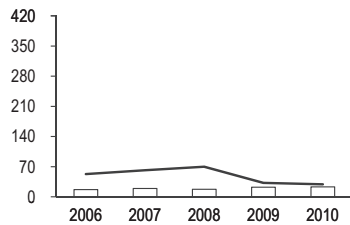
Refuse Tons Collected per Municipal Collection FTE



Year	High Point	Average
2006	1,019	1,210
2007	1,052	1,371
2008	961	1,368
2009	915	1,362
2010	874	1,325

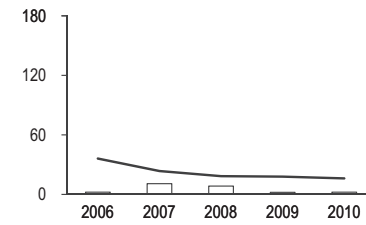
EFFECTIVENESS Measures

Complaints per 1,000 Collection Points



Year	High Point	Average
2006	16.6	52.8
2007	19.4	61.5
2008	17.5	70.0
2009	22.3	32.4
2010	23.1	28.9

Valid Complaints per 1,000 Collection Points



Year	High Point	Average
2006	2.3	36.1
2007	10.8	23.6
2008	8.3	18.3
2009	2.1	17.8
2010	2.3	16.2

Residential Refuse Collection

High Point

Fiscal Year 2009–10

MUNICIPAL PROFILE	EXPLANATORY INFORMATION	
Population (OSBM 2009) 102,216	<p>Service Level and Delivery High Point collects residential refuse once a week at curbside, although backyard collection is provided for residents with verified medical disabilities. High Point also has a contract for the collection of refuse from dumpsters at multi-family units but these costs and tons are not included in this reporting.</p> <p>The city uses nine crews with automated trucks with one person and two crews with one driver and two collectors. There are thirty-eight collection routes. The average number of trips to the landfill is two per day per route. The average distance to the landfill is eight miles.</p> <p>The city collected 30,587 tons of residential refuse during FY 2009–10 at a cost of \$84 per ton. The cost per ton does not include the disposal cost of \$26, representing the landfill tipping fee. The city does not use a transfer station.</p> <p>Residents may use up to two roll-out carts constructed so that they can be emptied by the lifting devices mounted on city trucks. The cart size is ninety-six gallons.</p> <p>High Point defines rear loaders as trucks with large hoppers and bulky item capacity, with refuse loaded from the rear. Automated packers are trucks that contain a device that sweeps the refuse into the trucks and are essentially independent of external influence or control. Packers are manual trucks.</p> <p>Conditions Affecting Service, Performance, and Costs "Tons collected per collection FTE" includes only the tons collected by city crews.</p> <p>High Point began transitioning from rear packers to automated side loaders in November 2007 for two of the ten residential routes. Six other automated loaders were received from January 2010 to August 2010. By 2011 the transition will be complete to nearly all residential routes being served by automated loaders except for special collections.</p>	
Land Area (Square Miles) 54.05		
Persons per Square Mile 1,891		
Topography Flat; gently rolling		
County Guilford		
Climate Temperate; some snow and ice		
Median Family Income (US Census 2000) \$48,057		
FULL COST PROFILE		
Cost Breakdown by Percentage		
Personal Services 58.1%		
Operating Costs 29.0%		
Capital Costs 12.9%		
TOTAL 100.0%		
Cost Breakdown in Dollars		
Personal Services \$ 1,492,809		
Operating Costs \$ 743,940		
Capital Costs \$ 332,426		
TOTAL \$ 2,569,175		
SERVICE PROFILE		
FTE Positions—Collection 35.0		
FTE Positions—Other 3.0		
Tons Collected 30,587		
Residential Customers 35,332 (number represents collection points)		
Collection Location Curbside (backyard for disabled)		
Collection Frequency 1 x week		
Size of Crews (most commonly used) 1 & 2 person		
Percentage of Service Contracted 0%		
Service Fee No		
Type of Equipment 8 automated packers 2 packers		

Salisbury

Residential Refuse Collection

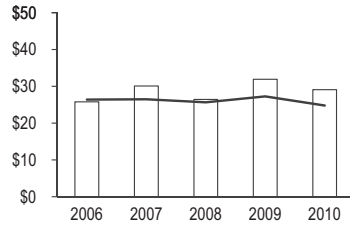
Key: Salisbury ■

Benchmarking Average —

Fiscal Years 2006 through 2010

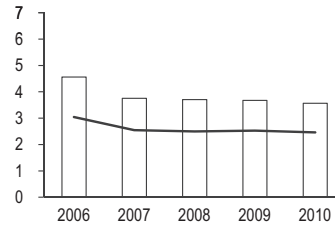
RESOURCE Measures

Residential Refuse Collection Costs per Capita



Salisbury	\$25.78	\$30.10	\$26.46	\$31.91	\$29.08
Average	\$26.39	\$26.50	\$25.67	\$27.25	\$24.81

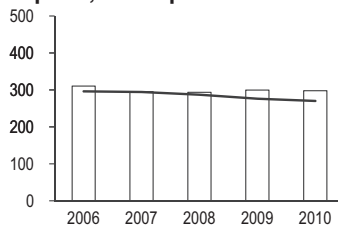
Residential Refuse Collection FTEs per 10,000 Population



Salisbury	4.56	3.75	3.71	3.67	3.56
Average	3.04	2.55	2.50	2.53	2.46

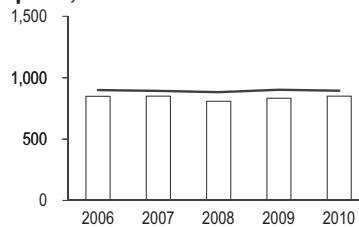
WORKLOAD Measures

Residential Refuse Tons per 1,000 Population



Salisbury	311	295	293	300	298
Average	296	294	287	276	270

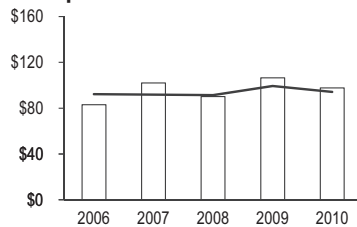
Residential Refuse Tons per 1,000 Collection Points



Salisbury	849	850	808	833	850
Average	899	893	883	902	894

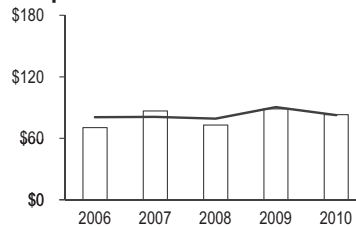
EFFICIENCY Measures

Residential Refuse Collection Cost per Ton Collected



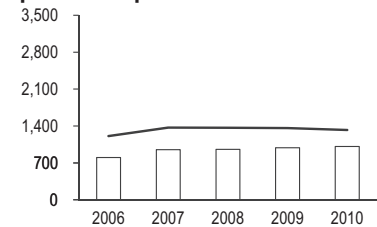
Salisbury	\$83	\$102	\$90	\$107	\$98
Average	\$92	\$92	\$91	\$99	\$94

Residential Refuse Collection Cost per Collection Point



Salisbury	\$70	\$87	\$73	\$89	\$83
Average	\$81	\$81	\$79	\$90	\$83

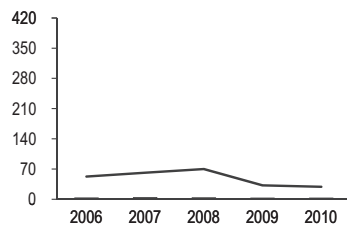
Refuse Tons Collected per Municipal Collection FTE



Salisbury	802	952	958	987	1,011
Average	1,210	1,371	1,368	1,362	1,325

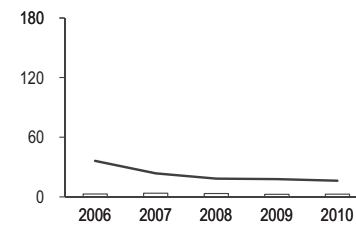
EFFECTIVENESS Measures

Complaints per 1,000 Collection Points



Salisbury	2.9	3.7	3.5	2.6	2.7
Average	52.8	61.5	70.0	32.4	28.9

Valid Complaints per 1,000 Collection Points



Salisbury	2.9	3.7	3.4	2.6	2.7
Average	36.1	23.6	18.3	17.8	16.2

Residential Refuse Collection

Salisbury

Fiscal Year 2009–10

MUNICIPAL PROFILE		EXPLANATORY INFORMATION
Population (OSBM 2009)	32,263	<p>Service Level and Delivery Salisbury provides residential refuse collection service once per week at curbside. Backyard collection service is provided for disabled customers only. The city charges a monthly fee of \$4.09 for residential collection.</p> <p>The city employed three crews during FY 2009–10 with two driver-operators. Fifteen collection routes were used with an average of one nineteen-mile trip per route per day to the transfer station.</p> <p>Each resident has one ninety-five-gallon roll-out cart provided and paid for by the city. A second cart may be obtained. The city collected 9,609 tons of residential refuse during FY 2009–10 at a cost per ton of \$98. Not included in the cost per ton was a \$34 landfill tipping fee.</p> <p>Salisbury defines its semi-automated packers as low-entry compactors that can be driven from either side of the truck, with the refuse being dumped in the rear of the truck from roll-out carts.</p> <p>Conditions Affecting Service, Performance, and Costs Salisbury's total tons collected includes bulk trash, which is collected along with residential refuse and cannot be separated for reporting purposes.</p>
Land Area (Square Miles)	21.93	
Persons per Square Mile	1,471	
Topography	Gently rolling	
County	Rowan	
Climate	Moderate; little snow and ice	
Median Family Income (US Census 2000)	\$41,108	
FULL COST PROFILE		
Cost Breakdown by Percentage		
Personal Services	51.2%	
Operating Costs	31.4%	
Capital Costs	17.4%	
TOTAL	100.0%	
Cost Breakdown in Dollars		
Personal Services	\$ 480,292	
Operating Costs	\$ 294,518	
Capital Costs	\$ 163,409	
TOTAL	\$ 938,219	
SERVICE PROFILE		
FTE Positions—Collection	9.50	
FTE Positions—Other	2.00	
Tons Collected	9,609	
Residential Customers (number represents collection points)	11,300	
Collection Location (backyard for disabled)	Curbside	
Collection Frequency	1 x week	
Size of Crews (most commonly used)	1 & 2 person	
Percentage of Service Contracted	0%	
Service Fee (monthly)	\$4.09	
Type of Equipment	3 packers	

Wilmington

Residential Refuse Collection

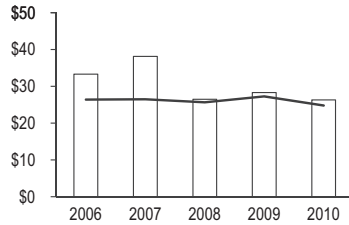
Key: Wilmington ■

Benchmarking Average —

Fiscal Years 2006 through 2010

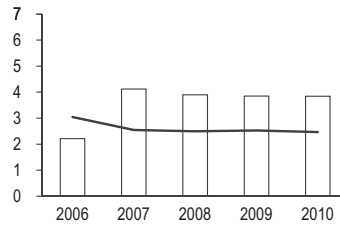
RESOURCE Measures

Residential Refuse Collection Costs per Capita



Year	Wilmington	Average
2006	\$33.30	\$26.39
2007	\$38.16	\$26.50
2008	\$26.50	\$25.67
2009	\$28.30	\$27.25
2010	\$26.30	\$24.81

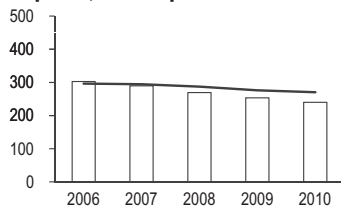
Residential Refuse Collection FTEs per 10,000 Population



Year	Wilmington	Average
2006	2.21	3.04
2007	4.12	2.55
2008	3.90	2.50
2009	3.85	2.53
2010	3.84	2.46

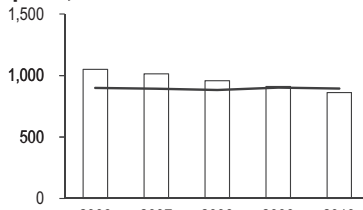
WORKLOAD Measures

Residential Refuse Tons per 1,000 Population



Year	Wilmington	Average
2006	303	296
2007	290	294
2008	269	287
2009	254	276
2010	240	270

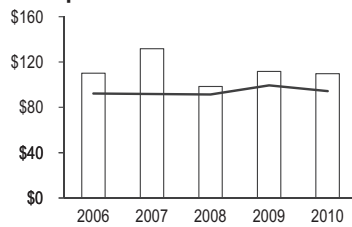
Residential Refuse Tons per 1,000 Collection Points



Year	Wilmington	Average
2006	1050	899
2007	1014	893
2008	958	883
2009	911	902
2010	861	894

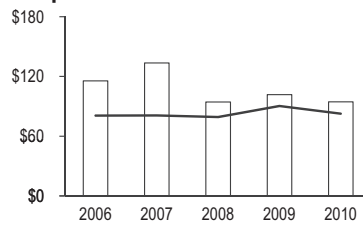
EFFICIENCY Measures

Residential Refuse Collection Cost per Ton Collected



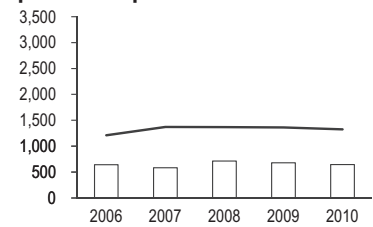
Year	Wilmington	Average
2006	\$110	\$92
2007	\$132	\$92
2008	\$98	\$91
2009	\$112	\$99
2010	\$110	\$94

Residential Refuse Collection Cost per Collection Point



Year	Wilmington	Average
2006	\$116	\$81
2007	\$133	\$81
2008	\$94	\$79
2009	\$102	\$90
2010	\$94	\$83

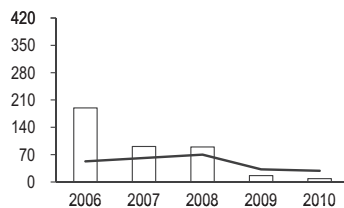
Refuse Tons Collected per Municipal Collection FTE



Year	Wilmington	Average
2006	644	1,210
2007	584	1,371
2008	714	1,368
2009	680	1,362
2010	645	1,325

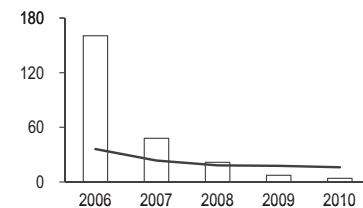
EFFECTIVENESS Measures

Complaints per 1,000 Collection Points



Year	Wilmington	Average
2006	189.6	52.8
2007	90.9	61.5
2008	89.6	70.0
2009	16.6	32.4
2010	8.6	28.9

Valid Complaints per 1,000 Collection Points



Year	Wilmington	Average
2006	160.5	36.1
2007	47.9	23.6
2008	21.7	18.3
2009	7.5	17.8
2010	4.1	16.2

Residential Refuse Collection

Wilmington

Fiscal Year 2009–10

MUNICIPAL PROFILE	
Population (OSBM 2009)	102,207
Land Area (Square Miles)	51.55
Persons per Square Mile	1,983
Topography	Flat; coastal plain
County	New Hanover
Climate	Mild
Median Family Income (US Census 2000)	\$41,891
FULL COST PROFILE	
Cost Breakdown by Percentage	
Personal Services	46.7%
Operating Costs	42.7%
Capital Costs	10.6%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	\$ 1,254,331
Operating Costs	\$ 1,149,064
Capital Costs	\$ 284,747
TOTAL	\$ 2,688,142
SERVICE PROFILE	
FTE Positions—Collection	38.0
FTE Positions—Other	1.3
Tons Collected	24,505
Residential Customers (number represents collection points)	28,453
Collection Location (backyard for disabled)	Curbside
Collection Frequency	1 x week
Size of Crews (most commonly used)	2 & 3 person
Percentage of Service Contracted	0%
Service Fee	\$23.75 for maxi \$19.50 for mini
Type of Equipment	15 packers

EXPLANATORY INFORMATION	
Service Level and Delivery	
Wilmington provides basic refuse collection service for residences once a week at curbside. Customers may elect twice-a-week collection for a premium charge. Wilmington provides all collection containers and carts to its customers. Customers may use either a ninety-gallon or forty-gallon cart.	
A volume-based fee system is used to finance residential refuse collection. This is designed to encourage residents to reduce the amount of refuse they generate. The city charged a monthly fee of \$23.75 for ninety-gallon carts and \$19.50 for forty-gallon carts during FY 2009–10.	
During FY 2006–07 Wilmington made a major shift in bringing all of refuse collection back in house after relying mostly on private contractors in earlier years. This transition required the hiring of a substantial number of staff and a large amount of one-time costs for the purchase of roll-out carts.	
During FY 2009–10 Wilmington used eleven crews of one driver and two collectors and four crews with one driver and one collector. All crews use semi-automated packer trucks.	
Forty-four collection routes were used during FY 2009–10, with an average of two trips per route per day to the landfill. The average distance to the landfill was 9.5 miles. The city collected 24,505 tons of residential refuse during FY 2009–10 at a cost of \$110 per ton. The cost per ton does not include the disposal cost of \$55.65 for the landfill tipping fee.	
Wilmington defines semi-automated packers as packer trucks that have tippers on them to lift the carts.	
Conditions Affecting Service, Performance, and Costs	
Wilmington defines a valid complaint as any complaint registered if there is no evidence to dispute it. The high level of complaints in prior years was one of the reasons for bringing back more of refuse collection under city operations.	

Wilson

Residential Refuse Collection

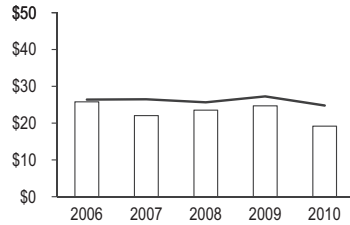
Key: Wilson ■

Benchmarking Average —

Fiscal Years 2006 through 2010

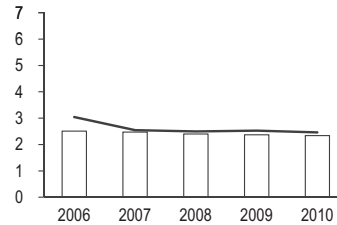
RESOURCE Measures

**Residential Refuse Collection
Costs per Capita**



Wilson	\$25.78	\$22.05	\$23.55	\$24.73	\$19.17
Average	\$26.39	\$26.50	\$25.67	\$27.25	\$24.81

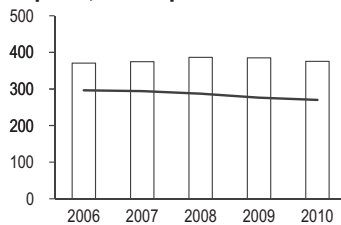
**Residential Refuse Collection FTEs
per 10,000 Population**



Wilson	2.51	2.47	2.40	2.37	2.34
Average	3.04	2.55	2.50	2.53	2.46

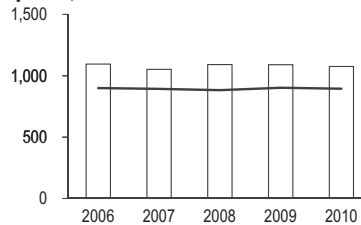
WORKLOAD Measures

**Residential Refuse Tons
per 1,000 Population**



Wilson	371	375	386	385	375
Average	296	294	287	276	270

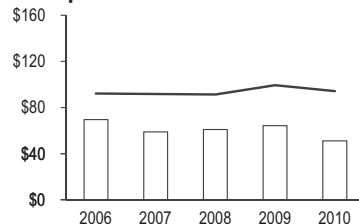
**Residential Refuse Tons
per 1,000 Collection Points**



Wilson	1095	1052	1091	1089	1076
Average	899	893	883	902	894

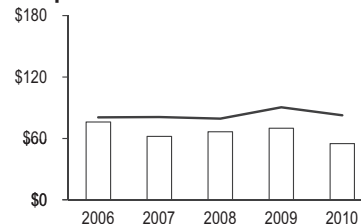
EFFICIENCY Measures

**Residential Refuse Collection Cost
per Ton Collected**



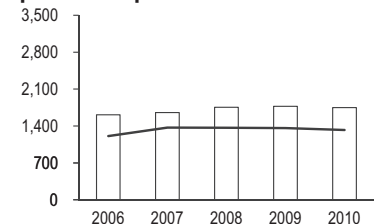
Wilson	\$70	\$59	\$61	\$64	\$51
Average	\$92	\$92	\$91	\$99	\$94

**Residential Refuse Collection Cost
per Collection Point**



Wilson	\$76	\$62	\$66	\$70	\$55
Average	\$81	\$81	\$79	\$90	\$83

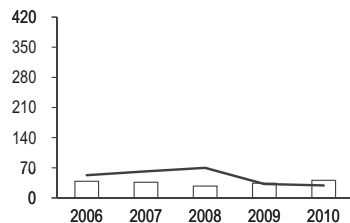
**Refuse Tons Collected
per Municipal Collection FTE**



Wilson	1,612	1,655	1,755	1,773	1,750
Average	1,210	1,371	1,368	1,362	1,325

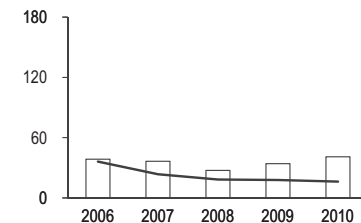
EFFECTIVENESS Measures

**Complaints per 1,000
Collection Points**



Wilson	38.6	36.4	27.5	34.0	40.9
Average	52.8	61.5	70.0	32.4	28.9

**Valid Complaints per 1,000
Collection Points**



Wilson	38.6	36.4	27.5	34.0	40.9
Average	36.1	23.6	18.3	17.8	16.2

Residential Refuse Collection

Wilson

Fiscal Year 2009–10

MUNICIPAL PROFILE		EXPLANATORY INFORMATION
Population (OSBM 2009)	51,274	<p>Service Level and Delivery Residential refuse collection service is provided once a week at curbside to Wilson residents. Senior citizens and disabled persons may apply for and receive backyard pickup. There is currently a monthly \$14 fee per household for residential refuse collection service.</p> <p>The city used five one-person crews during FY 2009–10 working from automated packers. The city also used two three-person crews composed of one driver and two collectors working from semi-automated rear loaders. Residents are required to use ninety-six-gallon roll-out containers.</p> <p>The city serviced seventeen collection routes in a week during FY 2009–10. The packers made an average of two trips to the disposal facility per day per route with the distance to the transfer station being ten miles.</p> <p>Wilson collected 19,253 tons of residential refuse during the fiscal year at a cost of \$51 per ton. The cost per ton does not include the disposal cost of \$37.20, representing the tipping fee at the transfer station.</p> <p>Wilson defines automated packers as fully automated trucks requiring one driver. Packers are rear-loading, semi-automated trucks requiring one driver and two collectors.</p> <p>Conditions Affecting Service, Performance, and Costs The city of Wilson considers all complaints to be valid complaints.</p>
Land Area (Square Miles)	29.02	
Persons per Square Mile	1,767	
Topography	Flat	
County	Wilson	
Climate	Mild; little snow and ice	
Median Family Income (US Census 2000)	\$41,041	
FULL COST PROFILE		
Cost Breakdown by Percentage		
Personal Services	53.2%	
Operating Costs	39.2%	
Capital Costs	7.6%	
TOTAL	100.0%	
Cost Breakdown in Dollars		
Personal Services	\$ 522,606	
Operating Costs	\$ 385,510	
Capital Costs	\$ 74,902	
TOTAL	\$ 983,018	
SERVICE PROFILE		
FTE Positions—Collection	11.0	
FTE Positions—Other	1.0	
Tons Collected	19,253	
Residential Customers (number represents collection points)	17,900	
Collection Location (backyard for disabled)	Curbside	
Collection Frequency	1 x week	
Size of Crews (most commonly used)	1 & 3 person	
Percentage of Service Contracted	0%	
Service Fee (monthly)	\$14.00	
Type of Equipment	5 automated packers 2 packers	

Winston-Salem

Residential Refuse Collection

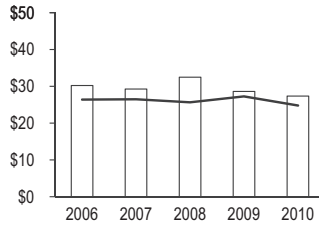
Key: Winston-Salem ■

Benchmarking Average —

Fiscal Years 2006 through 2010

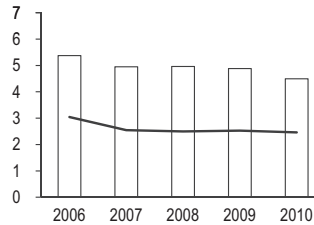
RESOURCE Measures

**Residential Refuse Collection
Costs per Capita**



Year	Winston-Salem	Average
2006	\$30.24	\$26.39
2007	\$29.28	\$26.50
2008	\$32.51	\$25.67
2009	\$28.63	\$27.25
2010	\$27.36	\$24.81

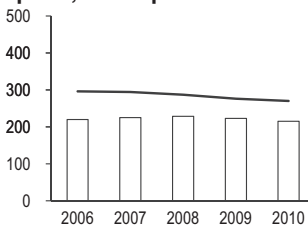
**Residential Refuse Collection FTEs
per 10,000 Population**



Year	Winston-Salem	Average
2006	5.37	3.04
2007	4.95	2.55
2008	4.96	2.50
2009	4.88	2.53
2010	4.49	2.46

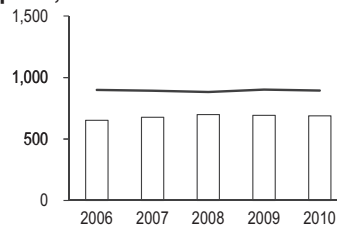
WORKLOAD Measures

**Residential Refuse Tons
per 1,000 Population**



Year	Winston-Salem	Average
2006	220	296
2007	225	294
2008	229	287
2009	223	276
2010	215	270

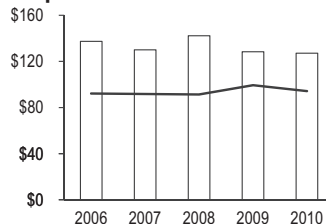
**Residential Refuse Tons
per 1,000 Collection Points**



Year	Winston-Salem	Average
2006	652	899
2007	677	893
2008	699	883
2009	693	902
2010	689	894

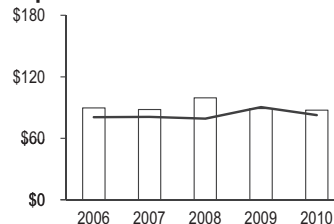
EFFICIENCY Measures

**Residential Refuse Collection Cost
per Ton Collected**



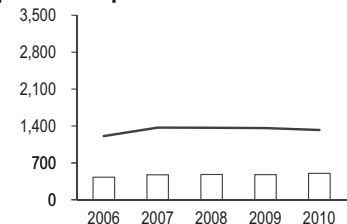
Year	Winston-Salem	Average
2006	\$137	\$92
2007	\$130	\$92
2008	\$142	\$91
2009	\$128	\$99
2010	\$127	\$94

**Residential Refuse Collection Cost
per Collection Point**



Year	Winston-Salem	Average
2006	\$90	\$81
2007	\$88	\$81
2008	\$99	\$79
2009	\$89	\$90
2010	\$88	\$83

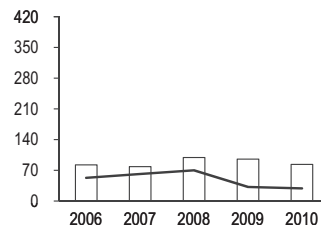
**Refuse Tons Collected
per Municipal Collection FTE**



Year	Winston-Salem	Average
2006	428	1,210
2007	475	1,371
2008	481	1,368
2009	477	1,362
2010	502	1,325

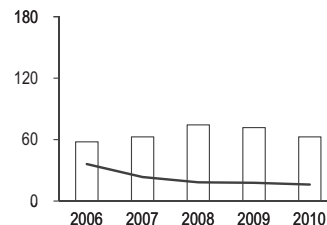
EFFECTIVENESS Measures

**Complaints per 1,000
Collection Points**



Year	Winston-Salem	Average
2006	82.6	52.8
2007	78.3	61.5
2008	99.1	70.0
2009	95.7	32.4
2010	83.6	28.9

**Valid Complaints per 1,000
Collection Points**



Year	Winston-Salem	Average
2006	57.8	36.1
2007	62.6	23.6
2008	74.4	18.3
2009	71.8	17.8
2010	62.7	16.2

Residential Refuse Collection

Winston-Salem

Fiscal Year 2009–10

MUNICIPAL PROFILE		EXPLANATORY INFORMATION
Population (OSBM 2009)	235,075	
Land Area (Square Miles)	133.19	
Persons per Square Mile	1,765	
Topography	Gently rolling	
County	Forsyth	
Climate	Moderate; some snow and ice	
Median Family Income (US Census 2000)	\$46,595	
FULL COST PROFILE		
Cost Breakdown by Percentage		
Personal Services	60.9%	
Operating Costs	28.3%	
Capital Costs	10.8%	
TOTAL	100.0%	
Cost Breakdown in Dollars		
Personal Services	\$ 3,917,176	
Operating Costs	\$ 1,822,175	
Capital Costs	\$ 692,584	
TOTAL	\$ 6,431,935	
SERVICE PROFILE		
FTE Positions—Collection	100.80	
FTE Positions—Other	4.80	
Tons Collected	50,608	
Residential Customers (number represents collection points)	73,500	
Collection Location	Backyard/Curbside	
Collection Frequency	1 x week	
Size of Crews (most commonly used)	3 person	
Percentage of Service Contracted	0%	
Service Fee	No	
Type of Equipment	3 automated packers 29 packers	
		<p>Service Level and Delivery Winston-Salem collects residential refuse once a week from backyards and at curbside. The city implemented a voluntary curbside collection program in March 2005. At the end of FY 2009–10, over 70 percent of households participated in the voluntary curbside collection program.</p> <p>The city uses twenty-nine three-person crews composed of a driver and two collectors equipped with rear-loading packers to collect most of the residential refuse. In addition, there are three automated trucks with one person, one special collections truck with one person, and one central business district crew with one driver and one collector.</p> <p>Residents may use four twenty-gallon containers, three thirty-two-gallon containers, or one ninety-six-gallon roll-out cart. There was no fee for the residential refuse service during FY 2009–10.</p> <p>The city collected 50,608 tons of residential refuse during FY 2009–10 from 73,500 collection points. The cost per ton was \$127, which does not include the tipping fee of \$36 per ton. The city used one hundred and twenty-eight collection routes during the fiscal year with an average of one trip per route per day to the landfill. The average distance to the landfill was ten miles.</p> <p>Winston-Salem primarily uses rear-loading packers, which are trucks that load from the back. Two lifters are on the back of each truck. The crews hook their carts onto these lifters and dump the refuse into the back of the truck. The compactor blade also is located in the back of the truck.</p> <p>Conditions Affecting Service, Performance, and Costs Winston-Salem was one of only two municipalities participating in this project that continued to collect residential refuse from the backyard for many customers. This is a relatively labor intensive process and represents a high level of service.</p>

